OKLAHOMA DEPARTMENT OF TRANSPORTATION

DATE: December 30, 1992, REVISED DECEMBER 31, 1992

TO: Division Engineers, Division Construction Engineers, Engineering/Branch Managers

FROM: Byron Poynter, Construction Engineer

SUBJECT: CONSTRUCTION CONTROL DIRECTIVE NO. 921229

Cancelled

STATEMENT OF CRITICAL NEED

A Statement of Critical Need, is now required for all purchases, including Change Orders. Please complete one "Critical Need" form and include with the transmittal for each Change Order.

Only one original copy is required.

A sample completed form is enclosed. Under "Justification of Critical Need", in addition to the need statement, enter what results could be expected if the request is not approved. If the work is not a supplemental agreement and has been completed, the result will be more or less as indicated on the sample.

If the work has not been performed, such as, when the change includes a supplemental agreement, indicate the result of not doing the work.

A blank form is enclosed. You will have to make your own copies until a supply of the form is available.

As always, if you have questions, call me.

Byron Poynter P.E.
Construction Engineer

Copy To: Distribution list:

PURCHASING FREEZE

STATEMENT OF CRITICAL NEED

Date: January 4, 1992

1. Agency Name/Number Dept. of Transportation/345 REQ.#

2. Check Appropriate Space(s):

__X__ Critical to Public Safety
_____ Critical to Life Sustaining Health Services
_____ Critical to Protection of Public Property
__X__ Critical to Performance of Agency Mission

Project (if applicable) SAP-3(220), Atoka County

Job/Piece 12520(04) Amount $ 1,694.37 Change No. 1

3. Goods or services to be acquired:

Pay for overruns of aggregate base for patching and yellow centerline stripe.

4. Justification of Critical Need:

To pay for work already completed. Disapproval of this request will constitute a breach of contract and result in arbitration and/or litigation.

Agency Head Signature

Cabinet Secretary Signature
(if over $5,000)

Dec. 1992 ODOT Const.

PURCHASING FREEZE

STATEMENT OF CRITICAL NEED

Date_____

1. Agency Dept. of Transportation/345 REQ. NO._____

2. Check Appropriate Space(s):

_____ Critical to Public Safety
_____ Critical to Life Sustaining Health Services
_____ Critical to Protection of Public Property
_____ Critical to Performance of Agency Mission

Project (if applicable)_____

Job/Piece_____ Amount $_____

3. Goods or services to be acquired: _____

_____

_____

_____

_____

4. Justification of Critical Need:_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Agency Head Signature_____

Cabinet Secretary Signature_____
(if over $5,000)

Dec. 1992 ODOT Const.

OKLAHOMA DEPARTMENT OF TRANSPORTATION

DATE: December 10, 1992

TO: Division Engineers, Division Construction Engineers, Engineering/Branch Managers

FROM: Byron Poynter, Construction Engineer

SUBJECT: CONSTRUCTION CONTROL DIRECTIVE NO. 921209

BUY AMERICA CERTIFICATIONS

It has come to the attention of this office that some "Buy America" certifications are being submitted prior to the steel products being purchased. This constitutes a "promise" to buy America, rather than a certification that the materials were milled and manufactured in America, or that the amount purchased from foreign countries did not exceed allowable limits. A copy of the current specification is enclosed.

While it is advisable to bring this requirement to the contractor's attention before the material is acquired, the actual certification should be done "after the fact". Please request the certification towards the end of the project, after the steel purchases have been made.

Byron Poynter P.E.
Construction Engineer

Copy To: Distribution list:

O K L A H O M A D O T
BAMS/PES - PROPOSAL AND ESTIMATION SYSTEM

SPECIAL PROVISIONS TEXT

CF106001 - 106-1(A)88S BUY AMERICA

106-1(a)91s
2-28-89
8-28-89
7-29-92

These Special Provisions revise, amend, and where in conflict supersede applicable Sections of the Standard Specifications for Highway Construction, Edition of 1988, and the Supplement thereto, Edition of 1991.

(Revise Section 106a to read as follows.)

SECTION 106.01. SOURCE OF SUPPLY AND QUALITY REQUIREMENTS.

(a) General.

(b) Buy America. All steel or iron products furnished under this Contract shall be domestic to the United States, including the manufacturing process of applied coatings, galvanizing, painting and any other coating that protects or enhances the value of steel or iron products included, except a minimum use of foreign products will be permitted if the cost of such materials does not exceed one-tenth of one percent (0.1 percent) of the total Contract cost or $2,500, which ever is greater.

The Contractor shall submit a certification stating that all products are milled, manufactured and processed domestically, or if foreign, the origin and value of any products used on the project.

Oklahoma Department of Transportation

Buy America Certifications
Construction Control Directive No. **19921209**

February 15, 2002

Scope: To provide guidance in reviewing and accepting the Buy America Certification submitted by the contractor.

It has come to the attention of this office that some Buy America Certifications are being submitted prior to the steel products being purchased. This constitutes a "promise" to buy America, rather than a certification that the materials were milled and manufactured in America, or that the amount purchased from foreign countries did not exceed allowable limits.

While it is advisable to bring this requirement to the contractor's attention before the material is acquired, the actual certification should be done "after the fact". Please request the certification towards the end of the project, after the steel purchases have been made.

There have been some cases where the Buy America Certification was furnished by a supplier or someone other than the Prime Contractor. Only the Prime Contractor is to submit the Buy America Certification. The certification must be signed by the prime contractor or one of his officers. The certification should include the following verbiage:

> "All steel and iron products used in the project were milled, manufactured, and processed domestically."

In reviewing the Buy America Certification, please consider the following:

1. Buy America applies to all projects which are let under the Standard Specifications for Highway Construction(refer to Section 106.01(b)).

2. Applies to iron and steel products and their coatings.

3. All manufacturing processes must take place domestically.

4. The materials must be permanently installed, not temporary.

Temporary materials may be left in place at the contractor's convenience.

5. Minimal use of foreign source materials is permitted. The value of the material is based on the "as delivered to the project site." This value is set at the greater of $2,500, or 0.1% of the original contract amount and is the cumulative value for all foreign source materials.

If you receive a Buy America Certification signed by the prime contractor and you suspect that the contractor has not conformed to the conditions stated above, please contact the Construction Division.

George Raymond, P.E.
Construction Engineer

OKLAHOMA DEPARTMENT OF TRANSPORTATION

DATE: October 21, 1992

TO: Division Engineers, Construction Engineers, Engineering/Branch Managers

FROM: Byron Poynter, Construction Engineer

SUBJECT: CONSTRUCTION CONTROL DIRECTIVE NO. 921021
REFER ALSO TO DIRECTIVE NO. 920916. → CANCELLED

STORM WATER RUNOFF PERMITS/NOTICE OF INTENT
MANAGEMENT PLANS - NOTICE OF TERMINATION

In order to mesh the requirements of the Environmental Protection Agency (EPA) with the needs of the Department and the contracting industry, a certain amount of evolution will have to occur. Following, are instructions based on the most recent plans for implementing the Stormwater Runoff program.

Often contractors wish to begin work as soon as the work order is received. Since the Notice of Intent (NOI) must be on file two days before work begins, it is necessary that the contractor file the NOI before the work order is issued. The EPA also requests that the contractor's NOI be submitted in the same envelope as the Department's NOI.

In view of the foregoing, the contractor will receive his/her copy of the NOI at the time of execution of the contract, with instructions to complete the form, sign and forward to the Resident Engineer. The Resident Engineer should promptly include his/her copy of the NOI with the contractor's and that of local governments (when applicable), and forward to the EPA. This is a change from the Special Provision which will be in the contract proposals for the October letting. The Special Provision will be modified for future lettings.

Another change is that the Resident Engineer now is required to submit a NOI for Local Government projects. This establishes the contractor, the Department and local government as tri-permittees.

At the time of submittal to EPA send copies of all NOIs to Construction. Issuance of work orders will be subject to the NOIs being on file.

When the project has stabilized 70% with new vegetation, all parties that have signed a NOI are to submit a Notice Of Termination (NOT). As with the NOI, the Resident Engineer is to collect and submit all copies in the same envelope.

STORMWATER MANAGEMENT PLAN CERTIFICATION

Enclosed are Stormwater Management Plan Forms for "on system" projects and Local Government projects. The Resident Engineer is to complete a copy of the appropriate form for each project which requires a Notice of Intent. Secure the proper signatures, include a copy of the portion of the USGS Topographic Map for the project site (your Division has the maps) and distribute to the contractor, on-site Stormwater Plan and county/city government (when applicable). Make office copies as needed until a supply of forms can be printed and distributed.

The process for compliance with the EPA requirements will be adjusted over the next few months until the standards and specifications are developed, and the program fully implemented. You will be notified as soon as possible of those changes.

This Directive includes the following documents:

- Instructions to the contractor (to be included with the contract packet).
- The on-system Stormwater Plan certification.
- The local government Stormwater Plan certification.
- An "Action Chart" which depicts who is to do what and when it is to be done.

Byron Poynter P.E.
Construction Engineer

Copy To: Distribution list.

OKLAHOMA DEPARTMENT OF TRANSPORTATION

INSTRUCTIONS FOR FILING NOTICES OF INTENT

TO THE CONTRACTOR

Special Provision CA107001, which deals with Stormwater Management, directs you to file a "Notice Of Intent" (NOI), direct to the Environmental Protection Agency (EPA). However, the EPA requests that your NOI be submitted in the same envelope with the NOI prepared by the Resident Engineer.

Please disregard the instruction of the Special Provision, sign and forward the NOI to the Resident Engineer for the project. The Resident Engineer will forward both NOI(s) to the EPA.

If you plan to begin work immediately after the Work Order is issued, forward the NOI as soon as possible to allow time for mailing. The NOI(s) must be on file with the EPA two days before work begins.

You should retain copies for your files and the Stormwater Management Plan.

Jack Stewart P.E.
Office Engineer

Byron Poynter P.E.
Construction Engineer

STORMWATER MANAGEMENT PLAN

PROJECT DESCRIPTION:

Estimated total area of site expected to be disturbed:_____ acres. Wetlands:_____ acres.
Estimated final runoff coefficient:_____.
Name of receiving waters:_____.

The Department and the contractor are jointly responsible as co-permittees for meeting all Environmental Protection Agency (EPA) requirements for stormwater runoff on this project. This includes all items necessary for accomplishing the temporary erosion control, temporary sediment control, and the permanent erosion control work for clearing operations, grading, surfacing, bridges and other construction operations. The requirements may include the use of such items as bale barriers, siltation screens, sediment filters, sedimentation basins, slope drains, mats, mulches, temporary seeding, dikes, berms, curbing, etc.

Unless otherwise specified, the work shall be accomplished and maintained with strict accordance with the requirements of the Standard Specifications for Highway Construction, Edition of 1988. The entire area will be inspected a minimum of once every seven calendar days and within 24 hours after any storm event greater than 0.5 inches.

Temporary erosion and settlement control measures which are required due to unforseen construction problems and are not shown on the plans shall be constructed when directed by the Engineer. Accountability and payment will be in accordance with Subsection 104.03 of the Standard Specifications for Highway Construction, Edition of 1988.

CERTIFICATION: I certify that this document, with the project plans and specifications, required schedules for accomplishing the temporary erosion control work and the appropriate USGS topographic map, constitute the stormwater management plan for this project. Further, 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 stormwater discharges associated with industrial activity from the construction site identified as part of this certification.

Owner - Oklahoma Department of Transportation, by:

_____ _____
Resident Engineer Date

Local Contact:
Name_____
Address_____
Phone_____

Operator:

_____ _____
Contractor (Co-permittee) Date

Local Contact:
Name_____
Address_____
Phone_____

By:_____
(Name)

_____
(Title)

10/19/92

LOCAL GOVERNMENT/THIRD PARTY OWNER
STORMWATER MANAGEMENT PLAN

PROJECT DESCRIPTION:

Estimated total area of site expected to be disturbed:_____ acres. Wetlands:_____ acres.
Estimated final runoff coefficient:_____.
Name of receiving waters:_____.

The _____, the Department and the contractor are jointly responsible as co-permittees for meeting all Environmental Protection Agency (EPA) requirements for stormwater runoff on this project. This includes all items necessary for accomplishing the temporary erosion control, temporary sediment control, and the permanent erosion control work for clearing operations, grading, surfacing, bridges and other construction operations. The requirements may include the use of such items as bale barriers, siltation screens, sediment filters, sedimentation basins, slope drains, mats, mulches, temporary seeding, dikes, berms, curbing, etc.

Unless otherwise specified, the work shall be accomplished and maintained with strict accordance with the requirements of the Standard Specifications for Highway Construction, Edition of 1988. The entire area will be inspected a minimum of once every seven calendar days and within 24 hours after any storm event greater than 0.5 inches.

Temporary erosion and settlement control measures which are required due to unforseen construction problems and are not shown on the plans shall be constructed when directed by the Engineer. Accountability and payment will be in accordance with Subsection 104.03 of the Standard Specifications for Highway Construction, Edition of 1988.

CERTIFICATION: I certify that this document, with the project plans and specifications, required schedules for accomplishing the temporary erosion control work and the appropriate USGS topographic map, constitute the stormwater management plan for this project. Further, 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 stormwater discharges associated with industrial activity from the construction site identified as part of this certification.

Owner - Oklahoma Department of Transportation, by:

_____ _____
Resident Engineer Date

Local Contact:
Name_____
Address_____
Phone_____

Local Government/Third Party Owner:

Name_____
Address_____
Phone_____

By:_____
(Name)

_____
(Title)

Operator:

_____ _____
Contractor (Co-permittee) Date

Local Contact:
Name_____
Address_____
Phone_____

By:_____
(Name)

_____
(Title)

OKLAHOMA DEPARTMENT OF TRANSPORTATION

REQUIRED ACTIONS FOR IMPLEMENTATION OF STORMWATER MANAGEMENT		
TIME PERIOD	PERSON INVOLVED	ACTION REQUIRED
After Contract Award	Office Engineer	Provide Notice of Intent to the contractor.
Contract Execution	Contractor	Complete, sign and forward Notice of Intent to Resident Engineer.
Before Work Order is Issued	Resident Engineer (R/E)	Complete R/E copy of NOI, Assemble with NOIs from contractor and city/county government (when applicable) and forward all to EPA in the same envelope.(Address in CCD 920916)
Before Works Begins	Resident Engineer	Return copies of R/E's NOI, county/city's NOI (when Appl.), and executed stormwater plan to the contractor and the on-site files.
During Constr-uction	Contractor	Maintain the complete Stormwater Management Plan on the project site, revising as needed.
When New Growth is At Least 70% Stabilized	Contractor	Complete a Notice of Termination report and forward to the Resident Engineer.
When New Growth is 70%	Resident Engineer	Assemble Notice of Termination for all that have signed NOIs and forward to the EPA. (Address is in Directive NO. 920916).

10-23-92 Const.

OKLAHOMA DEPARTMENT OF TRANSPORTATION

DATE: September 23, 1992

TO: Division Engineers, Construction Engineers, Engineering/Branch Managers

FROM: Byron Poynter, Construction Engineer

SUBJECT: CONSTRUCTION CONTROL DIRECTIVE NO. 920916

STORM WATER RUNOFF PERMITS/NOTICE OF INTENT

Beginning October 1, 1992, each project which disturbs 5 acres or more of vegetation will require a Storm Water Runoff Plan, to comply with the Environmental Protection Agency (EPA) requirements. Part of the plan is a "Notice of Intent" (NOI) which is filed against the state permit. This includes active projects as well as upcoming projects. The specifications, plans, special provisions and the NOI comprise the storm water plan. Instructions as to the procedure are as follows:

ACTIVE PROJECTS:

For active projects and projects let in September, the Resident Engineer will soon receive two copies of the NOI for each project assigned, which falls in the control category. One copy is made out in the name of the prime contractor, the other is made out in the name of the owner of the system. If the project is on the highway system, the "facility operator" will be shown as ODOT. If the project is county, city, or other, the facility operator will be shown accordingly.

If the form heading is "ODOT," the Resident Engineer is to sign the ODOT copy and forward to the EPA, with a signed copy being sent to the contractor. When there is a county or city involved, the Resident Engineer is to secure the proper signature, (county commissioner, city manager, etc.), and forward to the EPA. The contractor's copy is to be forwarded to the contractor for his/her signature, with instructions that he/she is to forward the NOI to the EPA, with a signed copy being returned to the Resident Engineer.

The implementation of the Storm Water Management Plan constitutes a modification of the contract. Submit a "no cost" change order for each of the affected projects. The supplemental agreement portion must be completed since we are modifying the contract.

PROJECTS FOR THE NOVEMBER AND LATER LETTINGS:

Bid proposals will include a special provisions which outline the responsibilities of the parties involved. Each work order will include a NOI form to be completed by the Resident Engineer, or county/city official, and forwarded to the EPA.

Notices of Intent are to be mailed to:

Storm Water Notices of Intent
P.O Box 1215
Newington, VA. 22122

The contractor is to retain copies of all pertinent records for a period of at least 3 years after the project has been stabilized.

When the new vegetation has stabilized the project to approximately 70%, the contractor is to file a "Notice of Termination" (NOT) with the EPA. This action terminates the NOI and transfers the runoff responsibility to the proper operating authority.

Notices of Termination are to be mailed to:

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

A copy of the NOT is to be furnished to the Resident Engineer.

A copy of the Federal Register (Sept. 9, 1992) has been included with this Directive which outlines the requirements. The contractor should give special attention to the section on "Storm Water Pollution Prevention Requirements" (page 41181). Residency personnel should become familiar with the inspection requirements of Section IV d., Inspections.

Byron Poynter P.E.
Construction Engineer

Copy To: Distribution list.

federal register

Wednesday
September 9, 1992

Part II

Environmental Protection Agency

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

ENVIRONMENTAL PROTECTION AGENCY

[FRL-4202-4]

Final NPDES General Permits for Storm Water Discharges from Construction Sites

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of final NPDES general permits.

SUMMARY: The Regional Administrators of Regions I, II, III, IV, V, VI, VIII, IX, and X (the "Regions" or the "Directors") are issuing final National Pollutant Discharge Elimination System (NPDES) general permits for storm water discharges associated with industrial activity from construction sites in 10 States (Alaska, Arizona, Idaho, Louisiana, Maine, New Hampshire, New Mexico, Oklahoma, South Dakota, and Texas); the Territories of Puerto Rico, Johnston Atoll, and Midway and Wake Islands; on Indian lands in Alaska, Arizona, California, Colorado, Florida, Idaho, Maine, Massachusetts, Mississippi, Montana, New Hampshire, Nevada, North Carolina, North Dakota, Utah, Washington, and Wyoming; from Federal facilities in Colorado, and Washington; and from Federal facilities and Indian lands in Louisiana, New Mexico, Oklahoma, and Texas.

These general permits establish Notice of Intent (NOI) requirements, special conditions, requirements to develop and implement storm water pollution prevention plans, and requirements to conduct site inspections for facilities with discharges authorized by the permit.

ADDRESSES: Notices of Intent to be authorized to discharge under these permits should be sent to: Storm Water Notices of Intent, PO Box 1215, Newington, VA 22122.

Other submittals of information required under these permits or individual permit applications should be sent to the appropriate EPA Regional Office. The addresses of the Regional Offices and the name and phone number of the Storm Water Regional Coordinator is provided in section IV.F of the Fact Sheet.

The index to the administrative records for these permits are available at the appropriate Regional Office. The complete administrative record is located at EPA Headquarters, EPA Public Information Reference Unit, room 2402, 401 M Street SW., Washington, DC 20460. A reasonable fee may be charged for copying. Specific record information will be made available at the appropriate Regional Office as requested.

DATES: These general permits shall be effective on September 9, 1992. This effective date is necessary to provide appropriate dischargers with the opportunity to comply with the October 1, 1992 deadline for submitting an NPDES application for storm water discharges associated with industrial by submitting a Notice of Intent (NOI) to be covered by the permits.

Deadlines for submittal of Notices of Intent (NOIs) are provided in section IV.A.1 of the Fact Sheet and part II.A of the general permits. Today's general permits also provide additional dates for compliance with the terms of the permit.

FOR FURTHER INFORMATION CONTACT: For further information on the final NPDES general permits and for copies of the Notice of Intent form (the Notice of Intent form in appendix C of this notice can be copied and submitted) contact the NPDES Storm Water Hotline at (703) 821-4823, or the appropriate EPA Regional Office. The name, address and phone number of the Regional Storm Water Coordinators are provided in section IV.F of the Fact Sheet.

SUPPLEMENTARY INFORMATION:

I. Introduction

The Regional Administrators of the United States Environmental Protection Agency (EPA) are issuing final general permits for the majority of storm water discharges associated with industrial activity as follows:

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.

This notice contains four sets of appendices. Appendix A summarizes EPA's response to major comments received on the draft general permits published on August 16, 1991, (56 FR 40948). Appendix B provides the language of the final general permits. The permits in appendix B are similar. Appendix B provides the language of the final general permits. Except as provided in part X of the permits, parts I through IX apply to all permits. Part X of the permit contains conditions which only apply in the State indicated. Appendix C is a copy of the Notice of Intent (NOI) form (and associated instructions) to be used by dischargers wanting to obtain coverage under the general permits. Appendix D is a copy of the Notice of Termination (NOT) form (and associated instructions) that can be used by dischargers wanting to notify

EPA that their storm water discharges associated with industrial activity have been terminated or that the permittee has transferred operation of the facility.

On August 16, 1991, (56 FR 40948) EPA requested public comment on draft general permits that were the basis for today's final general permits. In addition to addressing storm water discharges from construction activities, the August 16, 1991, draft general permits addressed storm water discharges from other industrial activities. The permits in this notice only address storm water associated with construction activity. Elsewhere in today's **Federal Register**, EPA is publishing NPDES permits for storm water discharges from nonconstruction industrial facilities.

EPA received over 125 comments on construction issues associated with the draft general permits. In addition, public hearings to discuss the draft general permits were held in Dallas, TX; Oklahoma City, OK; Baton Rouge, LA; Albuquerque, NM; Seattle, WA; Boise, ID; Juneau, AK; Pierre, SD; Phoenix, AZ; Orlando, FL; Tallahassee, FL; Augusta, ME; Boston, MA; and Manchester, NH.

EPA is incorporating portions of the detailed fact sheet for the draft general permits published on August 16, 1991, as part of the final fact sheet and statement of basis for today's final permits. The sections of the prior fact sheet being incorporated are Section 1, Background; Section 2, Types of Discharges Covered; and Section 3, Description of Discharges Covered; and Section 5, The Federal/Municipal Partnership: The Role of Municipal Operators of Large and Medium Municipal Separate Storm Sewers.

II. Coverage of General Permits

Section 402(p) of the Clean Water Act (CWA) clarifies that storm water discharges associated with industrial activity to waters of the United States must be authorized by an NPDES permit. On November 16, 1990, EPA published regulations under the NPDES program which defined the term "storm water discharge associated with industrial activity" to include storm water discharges from construction activities (including clearing, grading, and excavation activities) that result in the disturbance of five or more acres of total land area, including areas that are part of a larger common plan of development or sale (40 CFR 122.26(b)(14)(x)).[1] The term "storm water discharge from construction activities" will be used in this document to refer to storm water discharges from construction sites that meet the definition of a storm water discharge associated with industrial activity.

These final general permits may authorize storm water discharges from existing construction sites (facilities where construction activities began before October 1, 1992, and final stabilization is to occur after October 1, 1992) and new construction sites. New construction sites are those facilities where disturbances associated construction activities commence after October 1, 1992. To obtain authorization under today's permits, a discharger must submit a complete NOI and comply with the terms of the permit. The terms of the permit, including the requirements for submitting an NOI, are discussed in more detail below.

The following discharges are not authorized by these final general permits:

- 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;
- Non-storm water discharges (except certain non-storm water discharges specifically listed in today's general permits). However, today's permits can authorize storm water discharges from construction activities where such discharges are mixed with non-storm water discharges that are authorized by a different NPDES permit;
- Storm water discharges from construction sites that are covered by an existing NPDES individual or general permit. However, storm water discharges associated with industrial activity from a construction site that are authorized by an existing permit may be authorized by today's general permit after the existing permit expires, provided the expired permit did not establish numeric limitations for such discharges;
- Storm water discharges from construction sites that the Director has determined to be or may reasonably be expected to be contributing to a violation of a water quality standard; and
- Storm water discharges from construction sites if the discharges are likely to adversely affect a listed endangered or threatened species or a species that is proposed to be listed as endangered or threatened or its critical habitat.

III. Summary of Options for Controlling Pollutants

Most controls for construction activities can be categorized into two groups: (1) Sediment and erosion controls; and (2) storm water management measures. Sediment and erosion controls generally address pollutants in storm water generated from the site during the time when construction activities are occurring. Storm water management measures generally are installed during and before completion of the construction process, but primarily result in reductions of pollutants in storm water discharged from the site after the construction has been completed. Additional measures include housekeeping best management practices.

A. Sediment and Erosion Controls

Erosion controls provide the first line of defense in preventing offsite sediment movement and are designed to prevent erosion through protection and preservation of soils. Sediment controls are designed to remove sediment from runoff before the runoff is discharged from the site. Sediment and erosion controls can be further divided into two major classes of controls: Stabilization practices and structural practices. Major types of sediment and erosion practices are summarized below. A more complete description of these practices is given in "Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices", U.S. EPA, 1992.

1. Sediment and Erosion Controls: Stabilization Practices

Stabilization, as discussed here, refers to covering or maintaining an existing cover over soils. The cover may be vegetation, such as grass, trees, vines, or shrubs. Stabilization measures can also include nonvegetative controls such as geotextiles, riprap, or gabions (wire mesh boxes filled with rock). Mulches, such as straw or bark, are most effective when used in conjunction with establishing vegetation, but can be used without vegetation. Stabilization of exposed and denuded soils is one of the most important factors in minimizing erosion while construction activities occur. A vegetation cover reduces the erosion potential of a site by absorbing the kinetic energy of raindrops that would otherwise disturb unprotected soil; intercepting water so that it infiltrates into the ground instead of running off the surface; and slowing the velocity of runoff, thereby promoting deposition of sediment in the runoff. Stabilization measures are often the

[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 (*Natural Resources Defense Council v. EPA*, Nos. 90-70671 and 91-70200, slip op. at 6217 (9th Cir. June 4, 1992).

most important measures taken to prevent offsite sediment movement and can provide large reductions of suspended sediment levels in discharges and receiving waters.[2] Examples of stabilization measures are summarized below.

a. Temporary seeding. Temporary seeding provides for temporary stabilization by establishing vegetation at areas of the site where activities will temporarily cease until later in the construction project. Without temporary stabilization, soils at these areas are exposed to precipitation for an extended time period, even though work is not occurring on these areas. Temporary seeding practices have been found to be up to 95 percent effective in reducing erosion.[3]

b. Permanent seeding. Permanent seeding involves establishing a sustainable ground cover at a site. Permanent seeding stabilizes the soil to reduce sediment in runoff from the site by controlling erosion and is typically required at most sites for aesthetic reasons.

c. Mulching. Mulching is typically conducted as part of permanent and temporary seeding practices. Where temporary and permanent seeding is not feasible, exposed soils can be stabilized by applying plant residues or other suitable materials to the soil surface. Although generally not as effective as seeding practices, mulching by itself, does provide some erosion control. Mulching in conjunction with seeding provides erosion protection prior to the onset of vegetation growth. In addition, mulching protects seeding activities, providing a higher likelihood of successful establishment of vegetation. To maintain optimum effectiveness, mulches must be anchored to resist wind displacement.

d. Sod stabilization. Sod stabilization involves establishing long-term stands of grass with sod on exposed surfaces. When installed and maintained properly, sodding can be more than 99 percent effective in reducing erosion,[4] making it the most effective vegetation practice available. The cost of sod stabilization (relative to other vegetative controls) typically limits its use to exposed soils where a quick vegetative cover is desired and sites which can be maintained with ground equipment. In addition, sod is sensitive to climate and may require intensive watering and fertilization.

e. Vegetative buffer strips. Vegetative buffer strips are preserved or planted strips of vegetation at the top and bottom of a slope, outlining property boundaries, or adjacent to receiving waters such as streams or wetlands. Vegetative buffer strips can slow runoff flows at critical areas, decreasing erosion and allowing sediment deposition.

f. Protection of trees. This practice involves preserving and protecting selected trees that exist on the site prior to development. Mature trees provide extensive canopy and root systems which help to hold soil in place. Shade trees also keep soil from drying rapidly and becoming susceptible to erosion. Measures taken to protect trees can vary significantly, from simple measures such as installing tree fencing around the drip line and installing tree armoring, to more complex measures such as building retaining walls and tree wells.

2. Sediment and Erosion Controls: Structural Practices

Structural practices involve the installation of devices to divert flow, store flow, or limit runoff. Structural practices have several objectives. First, structural practices can be designed to prevent water from crossing disturbed areas where sediment may be removed. This involves diverting runoff from undisturbed upslope areas through use of earth dikes, temporary swales, perimeter dike/swales, or diversions to stable areas. A second objective of structural practices can be to remove sediment from site runoff before the runoff leaves the site. Approaches to removing sediment from site runoff include diverting flows to a trapping or storage device or filtering diffuse flow through silt fences before it leaves the site. All structural practices require proper maintenance (removal of sediment) to remain functional.

a. Earth dike. Earth dikes are temporary berms or ridges of compacted soil that channel water to a desired location. Earth dikes should be stabilized with vegetation.

b. Silt fence. Silt fences are a barrier of geotextile fabric (filter cloth) used to intercept sediment in diffuse runoff. They must be carefully maintained to ensure structural stability and to remove excess sediment.

c. Drainage swales. A drainage swale is a drainage channel lined with grass, riprap, asphalt, concrete, or other materials. Drainage swales are installed to convey runoff without causing erosion.

d. Sediment traps. Sediment traps can be installed in a drainage way, at a storm drain inlet, or other points of discharge from a disturbed area.

e. Check dams. Check dams are small temporary dams constructed across a swale or drainage ditch to reduce the velocity of runoff flows, thereby reducing erosion of the swale or ditch. Check dams should not be used in a live stream. Check dams reduce the need for more stringent erosion control practices in the swale due to the decreased velocity and energy of runoff.

f. Level spreader. Level spreaders are outlets for dikes and diversions consisting of an excavated depression constructed at zero grade across a slope. Level spreaders convert concentrated runoff into diffuse runoff and release it onto areas stabilized by existing vegetation.

g. Subsurface drain. Subsurface drains transport water to an area where the water can be managed effectively. Drains can be made of tile, pipe, or tubing.

h. Pipe slope drain. A pipe slope drain is a temporary structure placed from the top of a slope to the bottom of a slope to convey surface runoff down slopes without causing erosion.

i. Temporary storm drain diversion. Temporary storm drain diversions are used to re-direct flow in a storm drain to discharge into a sediment trapping device.

j. Storm drain inlet protection. Storm drain inlet protection can be provided by a sediment filter or an excavated impounding area around a storm drain inlet. These devices prevent sediment from entering storm drainage systems prior to permanent stabilization of the disturbed area.

k. Rock outlet protection. Rock protection placed at the outlet end of culverts or channels can reduce the depth, velocity, and energy of water so that the flow will not erode the receiving downstream reach.

l. Other controls. Other controls include temporary sediment basins, sump pits, entrance stabilization measures, waterway crossings, and wind breaks.

B. Storm Water Management Measures

Storm water management measures are installed during the prior to completion of the construction process, but primarily result in reductions of pollutants in storm water discharged from the site after the construction has been completed. Construction activities often result in significant changes in

[2] "Performance of Current Sediment Control Measures at Maryland Construction Sites", January 1990, Metropolitan Washington Council of Governments.

[3] "Guides for Erosion and Sediment Control in California," USDA, Soil Conservation Service, Davis CA, Revised 1985.

[4] "Guides for Erosion and Sediment Control in California," USDA Soil Conservation Service, Davis CA, Revised 1985.

land use. Such changes typically involve an increase in the overall imperviousness of the site, which can result in dramatic changes to the runoff patterns of a site. As the amount within a drainage area increases, the amount of pollutants carried by the runoff increases. In addition, activities such as automobile travel on roads can result in higher pollutant concentrations in runoff compared to preconstruction levels. Traditional storm water management controls attempt to limit the increases in the amount of runoff and the amount of pollutants discharged from a site associated with the change in land use.

Major classes of storm water management measures include infiltration of runoff onsite; flow attenuation by vegetation or natural depressions; outfall velocity dissipation devices; storm water retention structures and artificial wetlands; and storm water detention structures. For many sites, a combination of these controls may be appropriate. A summary of storm water management controls is provided below. A more complete description of storm water management controls is found in "Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices", U.S. EPA, 1992, and "A Current Assessment of Urban Best Management Practices," Metropolitan Washington Council of Governments, March 1992.

1. Onsite Infiltration

A variety of infiltration technologies, including infiltration trenches and infiltration basins, can reduce the volume and pollutant loadings of storm water discharges from a site. Infiltration devices tend to mitigate changes to predevelopment hydrologic conditions. Properly designed and installed infiltration devices can reduce peak discharges, provide ground water recharge, augment low flow conditions of receiving streams, reduce storm water discharge volumes and pollutant loads, and protect downstream channels from erosion. Infiltration devices are a feasible option where soils are permeable and the water table and bedrock are well below the surface. Infiltration basins can also be used as sediment basins during construction.[5] Infiltration trenches can be more easily placed into under-utilized areas of a development and can be used for small sites and infill developments. However, trenches may require regular maintenance to prevent clogs, particularly where grass inlets or other pollutant removing inlets are not used. In some situations, such as low density areas of parking lots, porous pavement can provide for infiltration.

2. Flow Attenuation by Vegetation or Natural Depressions

Flow attenuation provided by vegetation or natural depressions can provide pollutant removal and infiltration and can lower the erosive potential of flows.[6] In addition, these practices can enhance habitat values and the appearance of a site. Vegetative flow attenuation devices include grass swales and filter strips as well as trees that are either preserved or planted during construction.

Typically the costs of vegetative controls are less than other storm water practices. The use of check dams incorporated into flow paths can provide additional infiltration and flow attenuation.[7] Given the limited capacity to accept large volumes of runoff, and potential erosion problems associated with large concentrated flows, vegetative controls should usually be used in combination with other storm water devices.

Grass swales are typically used in areas such as low or medium density residential development and highway medians as an alternative to curb and gutter drainage systems.[8]

3. Outfall Velocity Dissipation Devices

Outfall velocity dissipation devices include riprap and stone or concrete flow spreaders. Outfall velocity dissipation devices slow the flow of water discharged from a site to lessen erosion caused by the discharge.

4. Retention Structures/Artificial Wetlands

Retention structures include ponds and artificial wetlands that are designed to maintain a permanent pool of water. Properly installed and maintained retention structures (also known as wet ponds) and artificial wetlands [9] can achieve a high removal rate of sediment, BOD, organic nutrients and metals, and are most cost-effective when used to control runoff from larger, intensively developed sites.[10] These devices rely on settling and biological processes to remove pollutants. Retention ponds and artificial wetlands can also create wildlife habitat, recreation, and landscape amenities, as well as corresponding higher property values.

5. Water Quality Detention Structures

Storm water detention structures include extended detention ponds, which control the rate at which the pond drains after a storm event. Extended detention ponds are usually designed to completely drain in about 24 to 40 hours, and will remain dry at other times. They can provide pollutant removal efficiencies that are similar to those of retention ponds.[11] Extended detention systems are typically designed to provide both water quality and water quantity (flood control) benefits.[12]

C. Housekeeping BMPs

Pollutants that may enter storm water from construction sites because of poor housekeeping include oils, grease, paints, gasoline, concrete truck washdown, raw materials used in the manufacture of concrete (e.g., sand, aggregate, and cement), solvents, litter, debris, and sanitary wastes. Construction site management plans can address the following to prevent the discharge of these pollutants:

- Designate areas for equipment maintenance and repair;
- Provide waste receptacles at convenient locations and provide regular collection of wastes;
- Locate equipment washdown areas on site, and provide appropriate control of washwaters:
- Provide protected storage areas for chemicals, paints, solvents, fertilizers, and other potentially toxic materials; and
- Provide adequately maintained sanitary facilities.

IV. Summary of Permit Conditions

These general permits contain Notice of Intent requirements, a prohibition on discharging sources of non-storm water, requirements for releases of hazardous substances or oil in excess of reporting

[5] "Controlling Urban Runoff: A Practical Manual for Planning and Designing Urban BMPs", July, 1987, Metropolitan Washington Council of Governments.

[6] "Urban Targeting and BMP Selection", United States EPA, Region V, November 1990.

[7] "Standards and Specifications for Infiltration Practices", 1984, Maryland Water Resources Administration.

[8] "Controlling Urban Runoff: A Practical Manual for Planning and Designing Urban BMPs", Metropolitan Washington Council of Governments, July 1987.

[9] See "Wetland basins for Storm Water Treatment: Discussion and Background", Maryland Sediment and Stormwater Division, 1987 and "The Value of Wetlands for Nonpoint Source Control—Literature Summary", Strecker, E., et.al., 1990.

[10] "Controlling Urban Runoff, A Practical Manual for Planning and Designing Urban BMPs", Metropolitan Washington Council of Governments, 1987.

[11] "Urban Targeting and BMP Selection". United States EPA, Region V, November 1990.

[12] "Urban Surface Water Management", Walesh, S.G., Wiley, 1989

quantities, requirements for developing and implementing storm water pollution prevention plans, and requirements for site inspections.

A. Notice of Intent Requirements

NPDES general permits for storm water discharges associated with industrial activity require that dischargers submit a Notice of Intent (NOI) to be covered by the permit prior to the authorization of their discharges under such permit (see 40 CFR 122.26(b)(2), (April 2, 1992, (57 FR 11394)). Consistent with these regulatory requirements, today's permits establish NOI requirements. Dischargers that submit a complete NOI are not required to submit an individual permit application for such discharge, unless the Director specifically notifies the discharger that an individual permit application must be submitted.

Dischargers who want to obtain coverage under these permits must submit NOIs using the form provided by EPA (or a photocopy thereof). The NOI form is provided in appendix C of this notice and can be photocopied for use in submittals. NOI forms are also available from EPA's Storm Water Hotline ((703) 821–4823) and EPA Regional Offices (see part F of today's notice). Completed NOI forms must be submitted to the following address: Storm Water Notices of Intent, PO Box 1215, Newington, VA 22122.

Dischargers operating under approved State or local sediment and erosion plans, grading plans, or storm water management plans, must, in addition to filing copies of the NOI with EPA, submit signed copies of the NOI to the State or local agency approving such plans by the deadlines stated below.

1. Deadlines for Submitting NOIs

Deadlines for submittal of NOIs to be authorized to discharge under these permits are as follows:

- On or before October 1, 1992, for storm water discharges from construction sites where disturbances associated with a construction project occur on or before October 1, 1992, and final stabilization [13] is completed at the site after October 1, 1992;
- 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), where such activities commence after October 1, 1992; and
- For storm water discharges from construction sites where the operator changes, (including projects where an operator is selected after an NOI has been submitted), an NOI shall be submitted at least 2 days prior to when the operator commences work at the site.

EPA will accept an NOI at a later date. However, in such instances, EPA may bring appropriate enforcement actions.

2. Authorization

Dischargers who submit a complete NOI in accordance with the requirements of these permits 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, unless notified by EPA.

EPA may deny coverage under this permit and require submittal of an individual NPDES permit application based on a review of the completeness and/or content of the NOI or other information (e.g., water quality information, compliance history, etc.). Where EPA requires a discharger authorized under the general permit to apply for an individual NPDES permit or an alternative general permit, EPA will notify the discharger in writing that a permit application is required. Coverage under this general permit will automatically terminate if the discharger fails to submit the required permit application in a timely manner. Where the discharger does submit a requested permit application, coverage under this general permit will automatically terminate on the effective date of the issuance or denial of the individual NPDES permit or the alternative general permit as it applies to the individual permittee.

3. Contents of the NOI

A photocopy of the NOI in appendix C of today's notice may be completed and submitted to EPA's central address to obtain authorization to discharge under today's permits. The NOI form requires the following information:

- 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;
- The site owner's name, address, and telephone number;
- The name, address, and telephone number of the operator(s) with day-to-day operational control who have been identified at the time of the NOI submittal, and their 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 of the additional operator must indicate the preexisting NPDES permit number for discharge(s) from the site;
- 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 waters);
- The permit number of any NPDES permit(s) for any other discharge(s) (including any other storm water discharges or any non-storm water discharges) from the site;
- An indication of whether the operator has existing sampling data that describe the concentration of pollutants in storm water discharges. Existing data should not be included as part of the NOI and should not be submitted unless and until requested by EPA; and
- 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 the permit and that such plan complies with approved State and/or local sediment and erosion plans or permits and/or storm water management plans or permits. A copy of the plans or permits should not be included with the NOI submission, and should not be submitted unless and until requested by EPA.

The NOI must be signed in accordance with the signatory requirements of 40 CFR 122.22. A complete description of these signatory requirements is provided in the instructions accompanying the NOI (see appendix C).

4. Additional Notification

In addition to submitting the NOI to EPA, facilities operating under approved State or local sediment and erosion plans, grading plans, or storm water management plans are required to submit signed copies of the NOI to the State or local agency approving such plans by the deadlines stated above. Failure to do so constitutes a violation of the permit.

[13] The term "final stabilization" is defined in today's permits and is discussed in more detail in the Notice of Termination section of today's fact sheet

B. Special Conditions

1. Prohibition on Non-Storm Water Discharges

Today's permits do not authorize non-storm water discharges that are mixed with storm water except for specific classes of non-storm water discharges specified in the permits. Non-storm water discharges that can be authorized under today's permits include discharges from firefighting activities; fire hydrant flushings; waters used to wash vehicles or control dust in accordance with permit requirements; potable water sources including waterline flushings; irrigation drainage; routine external building washdown that 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.[14]

To be authorized under today's permits, these sources of non-storm water (except flows from firefighting activities) must be specifically identified in the storm water pollution prevention plan prepared for the facility. (Plan requirements are discussed in more detail below). Where such discharges occur, the plan must also identify and ensure the implementation of appropriate pollution prevention measures for the non-storm water components of the discharge. For example, to reduce pollutants in irrigation drainage, a plan could identify low maintenance lawn areas that do not require the use of fertilizers or biocides; for higher maintenance lawn areas, a plan could identify measures such as limiting fertilizer use based on seasonal and agronomic considerations, decreasing biocide use with an integrated pest management program, introducing natural vegetation or more hearty species, and reducing water use (thereby reducing the volume of irrigation drainage).

Today's permits do not require pollution prevention measures to be identified and implemented for non-storm water flows from firefighting activities since these flows will usually occur as unplanned emergency situations where it is necessary to take immediate action to protect the public.

[14] These discharges are consistent with the allowable classes of non-storm water discharges to municipal separate storm sewer systems (40 CFR 122.26(d)(iv)(D)).

The general prohibition on non-storm water discharges in today's permits ensures that non-storm water discharges (except for those classes of non-storm water discharges that are conditionally authorized) are not inadvertently authorized by these permits. Where a storm water discharge is mixed with process wastewaters or other sources of non-storm water prior to discharge, and the discharge is currently not authorized by an NPDES permit, the discharge cannot be covered by today's permits and the discharger should (1) submit the appropriate application forms (Forms 1 and 2C) to obtain permit coverage or (2) discontinue the discharge.

2. Releases of Reportable Quantities of Hazardous Substances and Oil

Today's permits provide that the discharge of hazardous substances or oil from a facility must be eliminated or minimized in accordance with the storm water pollution plan developed for the facility. Where a permitted storm water discharge contains a hazardous substance or oil in an amount equal to or in excess of a reporting quantity established under 40 CFR 110, 40 CFR 117, or 40 CFR 302, during a 24-hour period, today's permits require the following actions:

- The permittee must 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 110, 40 CFR 117, and 40 CFR 302, as soon as they have knowledge of the discharge;
- The permittee must modify the storm water pollution prevention plan for the facility within 14 calendar days of knowledge of the release to provide (1) a description of the release, (2) the date of the release and (3) the circumstances leading to the release. In addition, the permittee must modify the plan, as appropriate, to identify measures to prevent the reoccurrence of such releases and to respond to such releases.
- Within 14 calendar days of the knowledge of the release, the permittee must submit to EPA (1) a written description of the release (including the type and estimated amount of material released), (2) the date that such release occurred, (3) the circumstances leading to the release, and (4) any steps to be taken to modify the storm water pollution prevention plan for the facility.

Where a discharge of a hazardous substance or oil in excess of reporting quantities is caused by a non-storm water discharge (e.g., a spill of oil into a separate storm sewer), the spill is not authorized by this permit. The discharger must report the spill as required under 40 CFR 110. In the event of a spill, the requirements of section 311 of the CWA and otherwise applicable provisions of sections 301 and 402 of the CWA continue to apply. This approach is consistent with the requirements for reporting releases of hazardous substances and oil-requirements that make a clear distinction between hazardous substances typically found in storm water discharges and those associated with spills that are not considered part of a normal storm water discharge (see 40 CFR 117.12(d)(2)(i)).

C. Storm Water Pollution Prevention Plan Requirements

The pollution prevention plans required by today's permits focus on two major tasks: (1) Providing a site description that identifies sources of pollution to storm water discharges associated with industrial activity from the facility and (2) identifying and implementing appropriate measures to reduce pollutants in storm water discharges to ensure compliance with the terms and conditions of these permits.

In developing these permits, the Agency reviewed a significant number of existing State and local sediment and erosion control and storm water management requirements. State and local data were reviewed for a wide range of climates and varying types of construction activities.

1. Contents of the Plan

Storm water pollution prevention plans must include a site description; a description of controls that will be used at the site (e.g., erosion and sediment controls, storm water management measures); a description of maintenance and inspection procedures; and a description of pollution prevention measures for any non-storm water discharges that exist.

a. Site description. Storm water pollution prevention plans must be based on an accurate understanding of the pollution potential of the site. The first part of the plan requires an evaluation of the sources of pollution at a specific construction site. The plan must identify potential sources of pollution that may reasonably be expected to affect the quality of storm water discharges from the construction site. In addition, the source identification components for pollution prevention plans must provide a description of the site and the construction activities. This information is intended to provide a better understanding of site runoff and major

pollutant sources. At a minimum, plans must include the following:

• A description of the nature of the construction activity. This would typically include a description of the ultimate use of the project (e.g., low-density residential, shopping mall, highway).

• A description of the intended sequence of major activities that disturb soils for major portions of the site (e.g., grubbing, excavation, grading).

• 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. Where the construction activity is to be staged, it may be appropriate to describe areas of the site that will be disturbed at different stages of the construction process.

• Estimates of the runoff coefficient of the site after construction activities are completed as well as existing data describing the quality of any discharge from the site or the soil. The runoff coefficient is defined as the fraction of total rainfall that will appear at the conveyance as runoff. Runoff coefficients can be estimated from site plan maps, which provide estimates of the area of impervious structures planned for the site and estimates of areas where vegetation will be precluded or incorporated. Runoff coefficients are one tool for evaluating the volume of runoff that will occur for a site when construction is completed. These coefficients assist in evaluating pollutant loadings, potential hydraulic impacts to receiving waters, and flooding impact. They are also used for sizing of post-construction storm water management measures.

• A site map indicating drainage patterns and approximate slopes anticipated after major grading activities, areas of soil disturbance, and outline of areas that will 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; the location of surface waters (including wetlands); and locations where storm water is discharged to a surface water. Site maps should also include other major features and potential pollutant sources, such as the location of impervious structures and the location of soil piles during the construction process.

• The name of the receiving water(s), and areal extent of wetland acreage at the site.

b. Controls to reduce pollutants. The storm water pollution prevention plan must describe and ensure that implementation of practices that will be used to reduce the pollutants in storm water discharges from the site and assure compliance with the terms and conditions of the permit. Permittees are required to develop a description of four classes of controls appropriate for inclusion in the facility's plan, and implement controls identified in the plan in accordance with the plan. The description of controls must address (1) erosion and sediment controls, (2) storm water management, (3) a specified set of other controls, and (4) any applicable procedures and requirements of State and local sediment and erosion plans or storm water management plans.

The pollution prevention plan must clearly describe the intended sequence of major activities and when, in relation to the construction process, the control will be implemented. Good site planning and preservation of mature vegetation are primary control techniques for controlling sediment in storm water discharges during construction activities as well as for developing a strategy for storm water management that controls pollutants in storm water discharges after the completion of construction activities. Properly staging major earth disturbing activities can also dramatically decrease the costs of sediment and erosion controls. The description of the intended sequence of major activities will typically describe the intended staging of activities on different parts of the site.

Permittees must develop and implement four classes of controls in the pollution prevention plan, each of which is discussed below.

i. Erosion and sediment controls. The requirements for erosion and sediment controls for construction activities in these permits have three goals: (1) To divert upslope water around disturbed areas of the site; (2) to limit the exposure of disturbed areas to the shortest duration possible; and (3) to remove sediment from storm water before it leaves the site. Erosion and sediment controls include both stabilization practices and structural practices.

Stabilization Practices. Pollution prevention plans must include a description of interim and permanent stabilization practices, including site-specific scheduling of the implementation of the practices. The plans should ensure that existing vegetation is preserved where attainable and that disturbed portions of the site are stabilized as quickly as possible. Stabilization practices are the first line of defense for prevention erosion; they include temporary seeding, permanent seeding, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, preservation of mature vegetative buffer strips, and other appropriate measures. Temporary stabilization practices are often cited as the single most important factor in reducing erosion at construction sites.[15]

Stabilization also involves preserving and protecting selected trees that were on the site prior to development. Mature trees have extensive canopy and root systems, which help to hold soil in place. Shade trees also keep soil from drying rapidly and becoming susceptible to erosion. Measures taken to protect trees can vary significantly, from simple measures such as installing tree fencing around the drip line and installing tree armoring, to more complex measures such as building retaining walls and tree wells.

Since stabilization practices play such an important role in preventing erosion, it is critical that they are rapidly employed in appropriate areas. These permits provide that, except in three situations, stabilization measures be initiated on disturbed areas as soon as practicable, but no more than 14 days after construction activity on a particular portion of the site has temporarily or permanently ceased. The three exceptions to this requirement are the following:

• Where construction activities will resume on a portion of the site within 21 days from when the construction activities ceased.

• Where the initiation of stabilization measures is precluded by snow cover, in which case, stabilization measures must be initiated as soon as practicable.

• 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 measure is precluded by seasonal arid conditions, in which case, stabilization measures must be initiated as soon as practicable.

Structural Practices. The pollution prevention plan must include a description of structural practices to the degree economically attainable, to divert flows from exposed soils, store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Structural controls are necessary because vegetative controls cannot be employed at areas of the site that are continually disturbed and because a finite time period is required before vegetative practices are fully effective. Options for such controls include silt fences, earth dikes, drainage swales, check dams, subsurface drains,

[15] "New York Guidelines for Urban Erosion and Sediment Control", USDA, Soil Conservation Service, March 1988.

pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, sediment traps, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins. Structural measures should be placed on upland soils to the degree possible.

For sites with more than 10 disturbed acres at one time that are served by a common drainage location, a temporary or permanent sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent control measures (such as suitably sized dry wells or infiltration structures), must be provided where economically attainable until final stabilization of the site has been accomplished. Flows from offsite areas and flows from onsite areas that are either undisturbed or have undergone final stabilization may be diverted around both the sediment basin and the disturbed area. The requirement to provide 3,600 cubic feet of storage area per acre drained does not apply to such diverted flows.

For the drainage locations which serve more than 10 disturbed acres at one time and where a sediment basin providing storage or equivalent controls for 3,600 cubic feet per acre drained is not economically attainable, smaller sediment basins 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. Diversion structures should be used on upland boundaries of disturbed areas to prevent runon from entering disturbed areas.

For drainage locations serving 10 or less acres, smaller sediment basins or sediment traps should be used and at a minimum, silt fences, or equivalent sediment controls are required for all sideslope and downslope boundaries of the construction area. Alternatively, the permittee may provide a sediment basin providing storage for 3,600 cubic feet of storage per acre drained. Diversion structures should be used on upland boundaries of disturbed areas to prevent runon from entering disturbed areas.

ii. Storm water management. The plan must include a description of "storm water management" measures [16]. These permits address only 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 responsible only for the installation and maintenance of storm water management measures prior to final stabilization of the site and are not responsible for maintenances after storm water discharges associated with construction activities have been eliminated from the site.

Land development can significantly increase storm water discharge volumes and peak velocities where appropriate storm water management measures are not implemented. In addition, storm water discharges will typically contain higher levels of pollutants, including total suspended solids (TSS), heavy metals, nutrients, and oxygen demanding constituents.[17]

Storm water management measures that are installed during the construction process can control the volume of storm water discharged and peak discharge velocities, as well as reduce the amount of pollutants discharged after the construction operations have been completed. Reductions in peak discharge velocities and volumes can also reduce pollutant loads, as well as reduce physical impacts such as stream bank erosion and stream bed scour. Storm water management measures that mitigate changes to predevelopment runoff characteristics assist in protecting and maintaining the physical and biological characteristics of receiving streams and wetlands.

Structural measures should be placed on upland soils to the degree attainable. The installation of such devices may be subject to section 404 of the CWA if the devices are placed in wetlands (or other waters of the United States).

Options for storm water management measures that are to be evaluated in the development of plans include infiltration of runoff on site; flow attenuation by use of open vegetated swales and natural depressions; storm water retention structures and storm water detention structures (including wet ponds); and sequential systems that combine several practices.

The pollution prevention plan must include an explanation of the technical basis used to select the practices to control pollution where flows exceed predevelopment levels. The explanation of the technical basis for selecting practices should address how a number of factors were evaluated, including the pollutant removal efficiencies of the measures, the costs of the measure, site specific factors that will affect the application of the measures, the economic achievability of the measure at a particular site, and other relevant factors.

EPA anticipates that storm water management measures at many sites will be able to provide for the removal of at least 80 percent of total suspended solids (TSS).[18] A number of storm water management measures can be used to achieve this level of control, including properly designed and installed wet ponds, infiltration trenches, infiltration basins, sand filter system, manmade storm water wetlands, and multiple pond systems. The pollutant removal efficiencies of various storm water management measures can be estimated from a number of sources, including "Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices", U.S. EPA, 1992, and "A Current Assessment of Urban Best Management Practice", prepared for U.S. EPA by Metropolitan Washington Council of Governments, March 1992. Proper selection of a technology depends on site factors and other conditions.

In selecting storm water management measures, the permittee should consider the impacts of each method on other water resources, such as ground water. Although storm water pollution prevention plans primarily focus on storm water management, EPA encourages facilities to avoid creating ground water pollution problems. For example, if the water table is unusually high in an area or soils are especially sandy and porous, an infiltration pond may contaminate a ground water source unless special preventive measures are taken. Under EPA's July 1991 Ground Water Protection Strategy, States are encouraged to develop Comprehensive State Ground Water Protection Programs (CSGWPP). Efforts to control storm water should be compatible with State ground water objectives as reflected in CSGWPPs.

The evaluation of whether the pollutant loadings and the hydrologic conditions (the volume of discharge) of flows exceed predevelopment levels can be based on hydrologic models which consider conditions such as the natural vegetation which is typical for the area.

Increased discharge velocities can greatly accelerate erosion near the

[16] For the purpose of the special requirements for construction activities, the term "storm water management" measures refers to controls that will primarily reduce the discharge of pollutants in storm water from sites after completion of construction activities.

[17] See "Nationwide Urban Runoff Program," EPA, 1984.

[18] TSS can be used as an indicator parameter to characterize the control of other pollutants, including heavy metals, oxygen demanding pollutants, and nutrients, commonly found in storm water discharges.

outlet of onsite structural measures. To mitigate these effects, these permits require that velocity dissipation devices be placed at discharge locations and along the length of any outfall channel as necessary to provide a non-erosive velocity flow from the structure to a water course. Velocity dissipation devices maintain and protect the natural physical and biological characteristics and functions of the watercourse, e.g., hydrologic conditions, such as the hydroperiod and hydrodynamics, that were present prior to the initiation of construction activities.

iii. Other controls. Other controls to be addressed in storm water pollution prevention plans for construction activities require that no non-storm water solid materials, including building material wastes shall be discharged at the site, except as authorized by a section 404 permit.

These final permits require that offsite vehicle tracking of sediments and the generation of dust be minimized. This can be accomplished by measures such as providing gravel or paving at access entrance and exit drives, parking areas, and unpaved roads on the site carrying significant amounts of traffic (e.g., more than 25 vehicles per day); providing entrance wash racks or stations for trucks; and/or providing street sweeping.

In addition, these permits require that the plan shall ensure and demonstrate compliance with applicable State and/or local sanitary sewer, septic system, and waste disposal regulations.[19]

iv. State and local controls. Many municipalities and States have developed sediment and erosion control requirements for construction activities. A significant number of municipalities and States have also developed storm water management controls. These general permits require that storm water pollution prevention plans for facilities that discharge storm water associated with industrial activity from construction activities include procedures and requirements of State and local sediment and erosion control plans or storm water management plans. Permittees are required to provide a certification that their storm water pollution prevention plan reflects requirements related to protecting water resources that are specified in State or local sediment and erosion plans or storm water management plans.[20]

In addition, permittees are required to amend their storm water pollution prevention plans to reflect any change in a sediment and erosion site plan or site permit or storm water management site plan or site permit approved by State or local officials for which the permittee receives written notice. Where such amendments are made, the permittee must provide a recertification that the storm water pollution prevention plan has been modified. This provision does not apply to provisions of master plans, comprehensive plans, nonenforceable guidelines, or technical guidance documents, but rather to site-specific State or local permits or plans.

c. Maintenance. Erosion and sediment controls can become ineffective if they are damaged or not properly maintained. Maintenance of controls has been identified as a major part of effective erosion and sediment programs. Plans must contain a description of prompt and timely maintenance and repair procedures addressing all erosion and sediment control measures (e.g., sediment basins, traps, silt fences), vegetation, and other measures identified in the site plan to ensure that such measures are kept in good and effective operating condition.

d. Inspections. Procedures in a plan must provide that specified areas on the site are inspected by qualified personnel provided by the discharger a minimum of once every seven calendar days and within 24 hours after any storm event of greater than 0.5 inches. Areas of the site that must be observed during such inspections include disturbed areas, areas used for storage of materials that are exposed to precipitation, structural control measures, and locations where vehicles enter or exit the site. Where sites have been temporarily or 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 (with an average annual rainfall of 10 to 20 inches) the inspection must be conducted at least once every month.

Disturbed areas and areas used for storage of materials that are exposed to precipitation must be inspected for evidence of, or the potential for, pollutants entering the runoff from the site. Erosion and sediment control measures identified in the plan must be observed to ensure that they are operating correctly. Observations can be made during wet or dry weather conditions. Where discharge locations or points are accessible, they must be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. This can be done by inspecting receiving waters to see whether any signs of erosion or sediment are associated with the discharge location. Locations where vehicles enter or exit the site must be inspected for evidence of offsite sediment tracking.

Based on the results of the inspection, the site description and the pollution prevention measures identified in the plan must be revised as soon as possible after an inspection that reveals inadequacies. The inspection and plan review process must provide for timely implementation of any changes to the plan within 7 calendar days following the inspection.

An inspection report that summarizes the scope of the inspection, name(s) and qualifications of personnel conducting the inspection, the dates of the inspection, major observations relating to the implementation of the storm water pollution prevention plan, and actions taken must be retained as part of the storm water pollution prevention plan for at least three years after the date of inspection. The report must be signed in accordance with the signatory requirements in the Standard Conditions section of these permits.

Diligent inspections are necessary to ensure adequate implementation of onsite sediment and erosion controls, particularly in the later stages of construction when the volume of runoff is greatest and the storage capacity of the sediment basins has been reduced.[21]

e. Non-storm water discharges. Today's permits may authorize storm water discharges from construction

[19] In rural and suburban areas that are served by septic systems, malfunctioning septic systems can contribute pollutants to storm water discharges. Malfunctioning septic tanks may be a more significant surface runoff pollution problem than a ground water problem. This is because a malfunctioning septic system is less likely to cause ground water contamination where a bacterial mat in the soil retards the downward movement of wastewater. Surface malfunctions are caused by clogged or impermeable soils, or when stopped up or collapsed pipes force untreated wastewater to the surface. Surface malfunctions can vary in degree from occasional damp patches on the surface to constant pooling or runoff of wastewater. These discharges have high bacteria, nitrate, and nutrient levels and can contain a variety of household chemicals. This permit does not establish new criteria for septic systems, but rather addresses existing State or local criteria.

[20] Operators of storm water discharges from construction activities which, based on an evaluation of site specific conditions, believe that State and local plans do not adequately represent BAT and BCT requirements for the facility may request to be excluded from the coverage of the general permit by submitting to the Director an individual application with a detailed explanation of the reasons supporting the request, including any supporting documentation showing that certain permit conditions are not appropriate.

[21] "Performance of Current Sediment Control Measures at Maryland Construction Sites", January 1990, Metropolitan Washington Council of Governments.

activities that are mixed with discharges from firefighting activities, fire hydrant flushings, waters used to wash vehicles or control dust in accordance with efforts to minimize offsite sediment tracking, potable water sources including waterline flushings, irrigation drainage from watering vegetation, routine exterior building washdown that 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 (including dewatering ground water infiltration), and foundation or footing drains where flows are not contaminated with process materials such as solvents, provided the non-storm water component of the discharge is specifically identified in the pollution prevention plan. In addition, the plan must identify and ensure the implementation of appropriate pollution prevention measures for each of the non-storm water component(s) of the discharge.[22]

EPA believes that where these classes of non-storm water discharges are identified in a pollution prevention plan and where appropriate pollution prevention measures are evaluated, identified, and implemented, they generally pose low risks to the environment. The Agency also notes that it can request individual permit applications for such discharges where appropriate. The Agency is not requiring that flows from fire-fighting activities be identified in plans because of the emergency nature of such discharges coupled with their low probability and the unpredictability of their occurrence.

2. Deadlines for Plan Preparation and Compliance

Today's permits establish the following deadlines for storm water pollution prevention plan development and compliance:

- The plan must be completed prior to the submittal of an NOI to be covered under this permit and updated as appropriate.
- For construction activities that have begun on or before October 1, 1992, except for sediment basins, 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 the permits by no later than December 1, 1992.
- For construction activities that have begun after October 1, 1992, the plan must provide for compliance with the terms and schedule of the plan beginning with the initiation of construction activities.

3. Signature and Plan Review

Signature and plan review requirements are as follows:

- The plan must be signed by all permittees for a site in accordance with the signatory requirements in the Standard Permit Conditions section of the permit, and must be retained on site at the facility that generates the storm water discharge.
- The permittee must make plans available, upon request, to EPA, and State or local agency approved sediment and erosion plans, grading plans, or storm water management plans. In the case of a storm water discharge associated with industrial activity that discharges through a municipal separate storm sewer system with an NPDES permit, permittees must make plans available to the municipal operator of the system upon request.
- EPA may notify the permittee at any time that the plan does not meet one or more of the minimum requirements. Within 7 days of such notification from EPA (or as otherwise requested by EPA), the permittee must make the required changes to the plan and submit to EPA a written certification that the requested changes have been made.

4. Keeping Plans Current

The permittee must amend the plan whenever there is a change in design, construction, operation, or maintenance, that has a significant effect on the potential for the discharge of pollutants to waters of the United States or to municipal separate storm sewer systems. The plan must also be amended if it proves to be ineffective in eliminating or significantly minimizing pollutants in the storm water discharges from the construction 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. Amendments to the plan will be reviewed by EPA as described above.

5. Additional Requirements

These permits 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, only under the following conditions:

- The industrial source other than construction is located on the same site as the construction activity; and
- Storm water discharges from where the construction activities are occurring are in compliance with the terms of this permit.

6. Contractors

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 presented below before conducting any professional service at the site identified in the 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."

All certifications must be included in the storm water pollution prevention plan.

D. Retention of Records

The permittee is required to retain records or copies of all reports required by this permit, including storm water pollution prevention plans and records of all data used to complete the NOI to be covered by the permit, for a period of at least three years from the date of final stabilization. This period may be extended by request of the Director.

E. Notice of Termination

A discharger may submit a Notice of Termination (NOT) to EPA in two sets of circumstances: (1) After a site has undergone final stabilization and the facility no longer discharges storm water associated with industrial activity from a construction site and (2) when the permittee has transferred operational control to another permittee and is no longer an operator for the site. NOTs must be submitted using the form provided by the Director (or a photocopy thereof). A copy of the NOT form is in Appendix D and can be photocopied for use. NOTs will assist EPA in tracking the status of the discharger.

Today's permits define final stabilization for the purpose of submitting an NOT as occurring when all soil disturbing activities are completed and a uniform perennial

[22] This is consistent with the allowable types of non-storm water discharges to municipal separate storm sewer systems (40 CFR 122.26(d)(2)(iv)(A)).

vegetative cover with a density of 70 percent for the unpaved areas and areas not covered by permanent structures has been established or equivalent stabilization measures have been employed. Equivalent stabilization measures include permanent measures other than establishing vegetation, such as the use of rip-rap, gabions, and/or geotextiles.

A copy of the NOT, and instructions for completing the NOT, are provided in Appendix D of today's notice. The NOT form requires the following information:

- 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.
- 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 form the Clean Water Act."

Notices of Termination are to be sent to the following address: Storm Water Notice of Termination, P.O. Box 1185, Newington, Virginia 22122.

The NOT must be signed by the appropriate individual in accordance with the signatory requirements of 40 CFR 122.22. A description of these signatory requirements is provided in the instructions accompanying the NOT (see appendix D).

Submittal of a NOT, by itself, does not relieve permittees from the obligations of the permit, such as the requirement to stabilize the site. Appropriate enforcement actions may still be taken for permit violations where a permittee submits a NOT but the permittee has not transferred operational control to another permittee or the site has not undergone final stabilization.

F. Regional Offices

Notices of Intent to be authorized to discharge under these permits should be sent to: Storm Water Notices of Intent, P.O. Box 1215, Newington, VA 22122.

Other submittals of information required under these permits or individual permit applications or other written correspondence concerning discharges in any State, Indian land, or from any Federal Facility covered, should be sent to the appropriate EPA Regional Office listed below:

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. Contact: Veronica Harrington, (617) 565-3525.

NJ, NY, PR, VI

United States EPA, Region II, Water Management Division, (2WM-WPC), Storm Water Staff, 26 Federal Plaza, New York, NY 10278. Contact: Jose Rivera, (212) 264-2911.

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

United States EPA, Region IV, Water Management Division, (FPB-3), Storm Water Staff, 345 Courtland Street, NE., Atlanta, GA 30365. Contact: Chris Thomas, (404) 347-3012.

AR, LA, NM (except see Region IX for Navajo lands and see Region VIII for Ute Mountain Reservation land), 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. Contact: Region VI Storm Water Hotline at (214) 655-xxxx.

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. Contact: Vern Berry, (303) 293-1630.

Note.—For *Montana Indian Lands*, please use the following address:

United States EPA, Montana Operations Office, Federal Office Building, Drawer 10096, 301 South Park, Helena, MT 59620-0026. Contact: Paul Montgomery, (406) 449-5486.

AZ, CA, HI, NV, American Samoa, Guam, the Goshute Reservation in UT and NV, the Navajo Reservation in UT, NM, and AZ, the Duck Valley Reservation in NV and ID, Johnston Atoll, Midway and Wake Island

United States EPA, Region IX, Water Management Division, (W-5-1), Storm Water Staff, 75 Hawthorne Street, San Francisco, CA 94105. Contact: Eugene Bromley, (415) 744-1906.

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. Contact: Steve Bubnick, (202) 553-8399.

V. Cost Estimates

The two major costs associated with pollution prevention plans for construction activities include the costs of sediment and erosion controls (see Table 1) and the costs of storm water management measures (see Table 2). Today's permits provide flexibility in developing controls for construction activities. Typically, most construction sites will employ several types of sediment and erosion controls and storm water management controls, but not all the controls listed in Tables 1 and 2. In general, sites that disturb a large area will incur higher pollution prevention costs.

TABLE 1.—SEDIMENT AND EROSION CONTROL COSTS

Temporary seeding	$1.00 per square foot.
Permanent seeding	$1.00 per square foot.
Mulching	$1.25 per square foot.
Sod stabilization	$4.00 per square foot.
Vegetative buffer strips	$1.00 per square foot.
Protection of trees	$30.00 to $200.00 per tree set.
Earth dikes	$5.50 per linear foot.
silt fences	$6.00 per linear foot.

TABLE 1.—SEDIMENT AND EROSION CONTROL COSTS—Continued

drainage swales—grass	$3.00 per square yard.
drainage swales—sod	$4.00 per square yard.
drainage swales—riprap	$45.00 per square yard.
drainage swales—asphalt	$35.00 per square yard.
drainage swales—concrete	$65.00 per square yard.
check dams—rock	$100.00 per dam.
check dams—covered straw bales	$50.00 per dam.
level spreader—earthen	$4.00 per square yard.
level spreader—concrete	$65.00 per square yard.
subsurface drain	$2.25 per linear foot.
Pipe slope drain	$5.00 per linear foot.
Temporary storm drain diversion	variable.
storm drain inlet protection	$300.00 per inlet.
rock outlet protection	$45.00 per square yard.
sediment traps	$500 to $7,000 per trap.
temporary sediment basins	$5,000 to $50,000 per basin.
sump pit	$500 to $7,000.
Entrance stabilization	$1,500 to $5,000 per entrance.
Entrance wash rack	$2,000 per rack.
Temporary waterway crossing	$500 to $1,500.
Wind breaks	$2.50 per linear foot.

Practices such as sod stabilization and tree protection increase property values and satisfy consumer aesthetic needs.
Sources: "Means Site Work Cost Data", 9th edition, 1990, R.S. Means Company.
"Sediment and Erosion Control, An Inventory of Current Practices", prepared by Kamber Engineering for U.S. EPA, April 1990.

TABLE 2.—ANNUALIZED COSTS OF SEVERAL STORM WATER MANAGEMENT OPTIONS FOR CONSTRUCTION SITES

	Annualized cost for 9-acre developed area	Annualized cost for 20-acre developed area
Wet Ponds	$5,872	$9,820
Dry Ponds	3,240	5,907
Dry Ponds with Extended Detention	3,110	5,413
Infiltration Trenches	4,134	6,359

Estimates based on methodology presented in "Cost of Urban Runoff Quality Controls", Wiegand, C., Schueler, T., Chittenden, W., and Jellick, D., Urban Runoff Quality-Impact and Quality Enhancement Technology, Proceedings of an Engineering Foundation Conference, ASCE, 1986, edited by B. Urbonas and L.A. Roesner.
Costs are presented in 1992 dollars. Annualized costs are based on a 10 year period and 10 percent discount rate. Estimates include a contingency cost of 25 percent of the construction cost and operation and maintenance costs of 5 percent of the construction cost. Land costs are not included.

VI. Economic Impact (Executive Order 12291)

EPA has submitted this notice to the Office of Management and Budget for review under Executive Order 12291.

VII. Paperwork Reduction Act

EPA has reviewed the requirements imposed on regulated facilities in these final general permits under the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 et. seq. EPA did not prepare an Information Collection Request (ICR) document for today's permits because the information collection requirements in these permits have already been approved by the Office of Management and Budget (OMB) in submissions made for the NPDES permit program under the provisions of the Clean Water Act.

VIII. Section 401 Certification

Section 401 of the CWA provides that no Federal license or permit, including NPDES permits, to conduct any activity that may result in any discharge into navigable waters shall be granted until the State in which the discharge originates certifies that the discharge will comply with the applicable provisions of sections 301, 302, 303, 306, and 307 of the CWA. The section 401 certification process has been completed for all States, Indian lands and Federal *facilities covered by today's general* permits. The following summary indicates where additional permit requirements have been added as a result of the certification process and also provides a more detailed discussion of additional requirements for Puerto Rico and Arizona in particular.

Region I

Maine: No additional 401 conditions.

Maine: Indian lands only, no additional 401 conditions.

Massachusetts: Indian lands only, no additional 401 conditions.

New Hampshire: No additional 401 conditions.

New Hampshire: Indian lands only, no additional 401 conditions.

Region II

Puerto Rico: See the following discussion and part X.A of the general permit for additional 401 conditions.

The Environmental Quality Board (EQB) of Puerto Rico issued on June 25, 1992, the General Water Quality Certificate (GWQC) in accordance with section 401 of the Clean Water Act for *storm water discharges from* construction activities that are classified as associated with industrial activity. This action was taken in response to the Region II Environmental Protection Agency's certification request of November 1, 1991.

The EQB's draft GWQC incorporated special conditions that must be met by all storm water discharges from construction activities that are classified as associated with industrial activity. A public notice was prepared including a notification to interested parties about the intention to issue a GWQC. The public notice provided a thirty (30) day public comment period. The EQB did not receive any comments regarding the GWQC; therefore, the EQB has finalized the GWQC.

The special conditions included in the GWQC are intended to assure that the general permit applicant will comply with the applicable requirements of the

Commonwealth of Puerto Rico Law and section 301(b)(1)(c) and 401(d) of the Clean Water Act. The GWQC contains, among others, the following special conditions:

• Prior to the construction of any treatment system of waters composed entirely of storm water, the permittee shall obtain the approval of the engineering report, plans, and specifications from the EQB.

• 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 discharge associated with industrial activity:

—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.

—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.

• All discharges covered by the GWQC shall be free of oil sheen at all times.

• The storm water discharges from construction activities covered by the GWQC will not cause violation of the applicable water quality standards.

• From 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. This certification should be signed by the person who fulfills the signatory requirements of the general permit.

• For construction activities that have begun after October 1, 1992, that 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 of the general permit.

• Compliance with the pollution prevention plan requirements does not relieve the permittee of his or her responsibility to comply with the provisions of the Sediment and Erosion Control Plant (Plan CEST, as referred to in Spanish) required by EQB.

Review and appeals of special conditions attributable to the GWQC shall be made through the applicable procedures of the Commonwealth of Puerto Rico and may not be through EPA procedures. Copies of the GWQC may be obtained by writing to the EQB, P.O. Box 11488, Santurce, Puerto Rico, 00910, or by calling at (809) 767–8181.

Region IV

Florida: Indian lands only, no additional 401 conditions (two separate permits for two different tribes).

Mississippi Indian lands: No additional 401 conditions.

North Carolina Indian lands: No additional 401 conditions.

Region VI

Louisiana and Indian lands in Louisiana: No additional 401 conditions.

New Mexico and Indian lands in New Mexico (except Navajo lands and Ute Mountain Reservation lands): No additional 401 conditions.

Oklahoma and Indian lands in Oklahoma: No additional 401 conditions.

Texas and Indian lands in Texas: No additional 401 conditions.

Region VIII

South Dakota and Indian lands in South Dakota: No additional 401 conditions.

Montana Indian lands only: No additional 401 conditions.

North Dakota Indian lands only: No additional 401 conditions.

Wyoming Indian lands only: No additional 401 conditions.

Utah Indian lands only (except the Goshute Reservation in Utah and Navajo reservation lands in Utah): No additional 401 conditions.

Colorado Federal facilities, Colorado Indian lands, and New Mexico Indian lands (including the Southern Ute Reservation and the Ute Mountain reservation, which includes the entire reservation, which is located in Colorado and New Mexico): See part X.B for additional 401 conditions.

Region IX

Arizona: See the following discussion and part X.C of the general permit for additional 401 conditions.

A special condition (see part X.C of the permit) was added to ensure compliance with the water quality standards of the State of Arizona. Although the general permit excludes from coverage facilities which contribute to a violation of a state water quality standard, the State of Arizona is concerned about the practical implementation of this exclusion. The State believes that there is considerable uncertainty regarding the quality of storm water runoff from different types of facilities and which facilities should be excluded from coverage. In addition, the State has expressed concern regarding the performance of the BMPs which would be required by the permit. There, part X.C was added to ensure compliance with State water quality standards for facilities which are covered by the permit.

The special condition in part X.C of the permit (well registration numbers) was added primarily to ensure protection of State groundwater resources. The State is concerned that in Arizona, many facilities may dispose of some storm water to dry wells or injection wells rather than discharge to surface waters. This special condition will allow the State to gather additional information concerning discharges to groundwater. The State also wishes to receive a copy of the actual NOI forms for its files. The special condition in part X.C of the permit will allow the State to receive NOTs as well as NOIs.

The special condition in part X.C of the permit was added to provide a definition of the term "significant sources of non-storm water" which was not otherwise defined. The State is particularly concerned about discharges which may cause or contribute to a violation of a water quality standard.

Arizona Indian lands only (including the Navajo reservation lands in Utah, New Mexico): No additional 401 conditions. California Indian lands only: No additional 401 conditions. Nevada Indian lands only (including the Duck Valley reservation lands in Nevada and Idaho, including the Goshute territory in Utah): No additional 401 conditions. Johnston Atoll: No additional 401 conditions. Midway and Wake Island: No additional 401 conditions.

Region X

Alaska: See part X.D for additional 401 conditions. Alaska Indian lands: No additional 401 conditions. Idaho: See part X.E for additional 401 conditions. Idaho Indian lands (except the Duck Valley reservation lands in Nevada and Idaho): No additional 401 conditions. Washington Indian lands: No additional 401 conditions. Washington Federal facilities, see part X.F for additional 401 conditions.

IX. Regulatory Flexibility Act

Under the Regulatory Flexibility Act, U.S.C. 601 et. seq., EPA is required to prepare a Regulatory Flexibility Analysis to assess the impact of rules on small entities. No Regulatory Flexibility Analysis is required, however, where the head of the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities.

Today's permits provide small entities with an application option that is less burdensome than individual applications or participating in a group application. The other requirements have been designed to minimize significant economic impacts of the rule on small entities and does not have a significant impact on industry. In addition, the permits reduce significant administrative burdens on regulated sources. Accordingly, I hereby certify pursuant to the provisions of the Regulatory Flexibility Act, that these permits will not have a significant impact on a substantial number of small entities.

Authority: Clean Water Act, 33 USC 1251 *et seq.*

Dated: August 28, 1992.

Patricia Meaney,

Acting Regional Administrator, Region I.

Fact Sheet for Final National Pollutant Discharge Elimination System General Permit for Storm Water Discharges from Construction Activities That Are Classified as "Associated With Industrial Activity" Located in the Commonwealth of Puerto Rico (PRR100000)

(The following signature indicates approval of the Fact Sheet developed for the permit indicated above.)

Dated: August 28, 1992.

William J. Muszynski,

Acting Regional Administrator, Region II.

Dated: August 28, 1992.

Patrick M. Tobin,

Acting Regional Administrator, Region IV.

Dated: August 27, 1992.

B.J. Wynne,

Regional Administrator, Region VI.

Dated: August 28, 1992.

Kerrigan Clough,

Acting Regional Administrator, Region VIII.

Dated: August 28, 1992.

Daniel W. McGovern,

Regional Administrator, Region IX.

Dated: August 27, 1992.

Dana Rasmussen,

Regional Administrator, Region X.

Appendix A—Summary of Responses to Public Comments on the August 16, 1991, Draft General Permits

NOI Deadlines

In the August 16, 1991, draft general permits, EPA proposed that NOIs to obtain coverage under the permits be submitted within 180 days of the date of issuance of the general permits or at least 30 days prior to the commencement of construction of a new storm water discharge associated with industrial activity.

Subsequent to the August 16, 1991, notice, EPA extended to October 1, 1992 the regulatory deadlines for submitting individual permit applications (see November 5, 1991, (56 FR 56549)), and *part 2 of group applications (see April 2,* 1992 (57 FR 11394)), for storm water discharges associated with industrial activity.

Today's final general permits provide that NOIs for construction activities that commence before October 1, 1992, and continue past that date must be submitted on or before October 1, 1992. As discussed in the November 5, 1991, and April 2, 1992, rules, the October 1, 1992, date provides consistency with the deadlines for submitting individual permit applications and Part 2 of group applications. Using the October 1, 1992, deadline will minimize confusion regarding these deadlines, particularly where EPA issues permits for different States on different dates, and will provide an equitable framework for complying with permit application requirements.

As discussed in more detail below, some commenters on the August 16, 1991, draft general permits indicated that, in some cases, general contractors would not have been selected 30 days prior to the commencement of the construction activities. These commenters indicated that if general contractors were required to submit NOIs 30 days prior to commencing construction activities, then delays in project initiation could result. In response to these concerns, today's permits provide that NOIs for construction activities that commence after October 1, 1992, be submitted at least 2 days prior to the commencement of construction. EPA believes that shortening the deadline for submitting NOIs for storm water discharges from construction sites that commence after October 1, 1992, will minimize delays in project starts and, as discussed below, address concerns regarding who needs to apply. Today's rule also clarifies that where an operator has not yet been identified at the point in time during the planning process when an NOI for the site is initially submitted, the owner may submit an initial NOI with the operator submitting an NOI at a later date (but prior to the time when that operator commences work at the site).

Some commenters requested clarification as to whether dischargers that missed the deadlines for submitting an NOI may ultimately obtain general permit coverage. A number of these commenters were particularly concerned about situations where a discharger is unaware of the requirement to obtain an NPDES permit for their discharge by October 1, 1992. These commenters urged EPA to provide flexibility in allowing them to submit an NOI to be authorized to discharge under the general permit after the deadlines specified in the general permit.

In response, EPA recognizes that there will be situations where it will be appropriate to allow a discharge to be authorized under the general permit after the deadline for submitting an NOI. For example, some facilities may only become aware of the general permit or even that their storm water discharge must be authorized by an NPDES permit after the deadline for submitting an NOI has passed. The Agency recognizes that the NPDES storm water program is relatively new, at least in terms of implementation activities, and that the application deadlines have changed on several occasions, which may have confused some dischargers. While ignorance of NPDES storm water requirements is not a shield from enforcement for discharging without a permit, the Agency recognizes the administrative advantages to allowing an existing discharger to obtain coverage under the general permit. For example, an existing facility that missed the October 1, 1992, deadline for submitting an NOI may experience significant project delays if it is required to wait until an individual permit is issued for the site.

In response to these concerns, today's permit clarifies that a discharger that misses either the October 1, 1992 deadline or the 48-hour deadline for facilities that commence construction after October 1, 1992, may submit an NOI and be authorized to discharge under the general permits. However, EPA wants to clarify that in such instances, the Agency may bring an appropriate enforcement action against the discharger.

NOI Requirements—Who Applies?

A number of commenters requested that EPA clarify which parties associated with a construction project must submit an NOI to be covered by the general permit. Some commenters indicated that different parties (e.g., site owner, developer, general contractor), can have different roles at different construction projects. Some of the commenters suggested that EPA should establish flexible requirements for who must submit an NOI to address the roles of the different parties responsible for the project, roles that can vary from site to site.

The commenters raised two major sets of concerns on this issue. The first set of concerns addressed the relationship between permit compliance and business practices in the construction industry. Several commenters indicated that, in situations where competitive bids are used to award construction contracts, they believed it was critical that the party that controls the specifications of the project incorporate prior to the bidding process the project specifications for sediment and erosion controls and storm water management measures necessary for permit compliance. These commenters indicated that they thought successful program implementation depended on ensuring that the specifications and costs associated with compliance with the permit be considered during the bid process. They indicated that the contractors bidding on the job should know the requirements of a storm water pollution prevention plan for a site to ensure that all of the bidders will be able to take the costs of complying with the plan into consideration in preparing a bid for the project. Several commenters raised concerns that contractors that were considering the costs associated with permit compliance may be at a competitive disadvantage when bidding on a project where sediment and erosion controls and/or storm water management measures were not addressed in the project specifications used during the bid process. These commenters thought that such an approach may result in economic incentives for other contractors to short change the pollution controls necessary under the permit in an attempt to submit a more competitive bid. Other commenters raised concerns that contractors may not be able to unilaterally build certain storm water management devices or sediment and erosion controls that are not identified in job specifications. In addition, some commenters indicated that if the party controlling the job specification (typically an owner or developer) were not permittees or co-permittees, then the costs of modifying plans after project initiation to address changes in site conditions would fall on the contractor, who may not be able to recoup the costs from the owner/developer.

The second set of concerns involved timing issues and the potential for delayed project starts. Several commenters indicated that in the construction industry, the site owner or developer (or their representative) often obtains required permits before the construction contract is awarded. This is done to prevent delays and to give the owner/developer an opportunity to modify job specifications to address issues raised in seeking permits. Some of these commenters noted the connection between the issues of who is required to submit an NOI and when an NOI is required. They indicated that in a significant number of situations, a contractor will not have been selected 30 days prior to initiation of the construction project.[23] Many of these commenters raised concerns that projects could be delayed if EPA required the contractor to submit the NOI 30 days prior to initiation of the project. Other commenters suggested that multiple general contractors could be used at some sites, with the first contractor initiating work (such as initial clearing and grading) long before the second contractor is selected.

In response, today's permits require the "operator" of a construction site to submit the NOI for coverage under a permit. For the purposes of submitting NOIs under these general permits, the Agency wants to clarify that the "operator" is the party or parties that either individually or taken together meet the following two criteria: (1) They have operational control over the site specifications (including the ability to make modifications in specifications), and (2) they have the day-to-day operational control of those activities at the site necessary to ensure compliance with plan requirements and permit conditions (e.g. are authorized to direct workers at the site to carry out activities identified in the plan).

Control over site specifications is necessary to ensure that the site plan allows for the design of storm water management measures and other controls necessary to comply with the permit. In addition, control over site specifications is necessary to modify specifications based on information obtained during the construction process or as otherwise required by EPA. Day-to-day operational control over activities at the site is necessary to ensure that plans are effectively implemented. This is particularly true in the construction industry where conditions and activities are continually changing.

EPA anticipates that different types of parties (e.g., owners, developers, general contractors, etc.) will satisfy the two criteria for the operator that must submit the NOI at different projects. In addition, the Agency anticipates that in many instances, more than one party will have to submit an NOI for the same project in order to satisfy both criteria. For example, at a given site, the property owner may have operational control over site specifications, while a general contractor may have day-to-day control over activities at the site. In this situation, both the property owner and the general contractor must submit an NOI. EPA believes that this approach is necessary to ensure that the relevant parties are aware of their responsibilities under the permit.

EPA believes that this approach also addresses concerns about timing issues and minimizes the potential for delayed project starts. The Agency has incorporated a considerable amount of flexibility into the NOI requirements of today's permits to minimize the potential for project delays. Where multiple parties are required to submit NOIs for the same site, and all parties are known before the NOIs are submitted, then an NOI must be submitted for each party, with all NOIs for the project sent to EPA together in the same envelope. In situations where the party that controls the site specifications (such as an owner or developer) wants to submit an NOI before the operator(s) with day-to-day control of activities at the site is selected, they may do so. However, after an operator with day-to-day control of site activities is selected, the newly selected operator must submit an NOI before commencing activities on the site. Similarly, where a second operator with day-to-day control is selected after the first operator has commenced work, the newly selected operator must submit an NOI before they commence activities on the site. This flexibility should ensure that projects are not delayed.

EPA strongly recommends that pollution prevention plans be prepared

[23] The August 16, 1991 draft general permits would have required for many construction sites that NOIs be submitted 30 days before construction starts.

well in advance of submitting an NOI. Preparing plans as part of the project design phase will ensure that sediment and erosion controls and storm water management concepts are incorporated into the site design in the most cost-effective manner. Where competitive bids are used to award construction contracts, the Agency strongly recommends that the party that controls the specifications of the project prepare the pollution prevention plan prior to initiation of the bid process to ensure that bidders will clearly understand what controls will be necessary. One of the major advantages to a general permit for storm water discharges from construction activities is that it provides a known framework for developing storm water pollution prevention plans. The regulatory certainty provided by a general permit is intended to provide site developers with an opportunity to develop storm water pollution prevention plans well in advance of initiating construction at a site. The Agency recommends that developers take advantage of the opportunity to develop a storm water pollution prevention plan well in advance of initiating construction activities, and to make the design of sediment and erosion controls and storm water management measures an integral phase of the site design process. Early plan preparation will allow the costs of plan compliance to be considered during the bid process and will encourage the maximization of net environmental benefits by considering sediment and erosion controls and storm water management before site plan parameters and procedures are locked in.

Other commenters requested clarification on whether a NOI must be submitted where the property changes ownership, for example, when a developer sells a graded lot to a builder for residential buildings. A number of these commenters indicated that ownership and general contractors frequently change during the construction process. One example given was for residential land development, where an initial land owner acts as the initial developer, and hires a general contractor to put in roads, rough grading and major utility trunks (e.g., sewer and water lines). The developer then sells off parcels to one or more builders, and the builder, or the builder's contractors erect structures, tap into utilities, and put a final grade on the lot. Builders may continue to own the property or sell it (as in the case of a detached single family home) either after or prior to the establishment of final vegetative cover.

Today's permits provide that NOIs must identify and be signed by the party(s) that has operational control of the site. As discussed above, two criteria are to be evaluated when determining the operator(s) for the purpose of NOI submission, the operator must (1) have operational control of the site specifications (including the ability to make modifications in specifications); and (2) have the day-to-day operational control of those activities at the site necessary to ensure compliance with plan requirements and permit conditions. For many construction projects, more than one party (such as a site owner and general contractor for the project) will have to submit an NOI to ensure that both criteria are met. Where one of the parties that exhibits operational control changes, as determined by applying the two criteria, then the new party meeting the criteria must submit a new NOI. Thus, if the original developer sells a parcel to a builder, and the builder takes over operational control of site specifications and/or day-to-day operational control of activities at the site necessary to ensure compliance with plan requirements and permit conditions, than the builder must submit a new NOI.

In response to concerns about multiple parties involved in the construction process, and to provide additional clarification, today's permits also require that all contractors and subcontractors that will implement measures identified in the plan be identified in the plan, and certify that they understand the terms and conditions of today's permit. The Agency believes that this is an appropriate mechanism for ensuring that the responsibilities of the various parties involved are clearly understood. However, the Agency wants to clarify that subcontractors themselves do not need to submit an NOI provided the operator with day-to-day operational control of activities at the site (such as a general contractor) has submitted an NOI. Subcontractors need only certify their knowledge of permit requirements.

EPA believes that the approach taken to NOI requirements in today's permits will have a number of benefits. First, the Agency believes that it is critical that the parties with operational control over both site specifications and day-to-day activities at the site be identified in the NOI. This will assist in identifying responsible parties, provide for an opportunity for the various parties involved to clarify the terms and responsibilities of the plan among themselves, and ensure that effective enforcement may take place.

Second, the Agency believes that it is appropriate to provide flexibility, consistent with the NPDES regulations,[24] by allowing the owner to submit an NOI prior to selection of a general contractor or other operator, as long as the new operator submits an updated NOI after they are selected. This approach will minimize delays to conducting construction activities. In addition, it will address situations where a second operator or general contractor is selected during the construction process to either replace an earlier operator/general contractor or to conduct a different phase of the project.

The Agency believes that shortening the minimum time period between when an NOI is submitted and when a discharge is authorized to 2 days will simplify the NOI process and minimize any project delays. The NOI process will be simplified by allowing more time for all of the operators at the site to be identified, which will increase the likelihood that all or most site operators will be selected prior to the deadline for submitting an NOI. This will allow all operators to be identified in the initial submittal.

Concerns About Project Delays

A number of comments raised concerns that the NPDES requirements for storm water discharges from construction activities may result in significant delays to construction projects. Several of these commenters indicated that they believed EPA's review of detailed pollution prevention plans prior to the issuance of permits could not be accomplished in a short period of time. Other commenters requested clarification as to when dischargers would be authorized to discharge under the permit. Some commenters expressed concerns that EPA would not be able to approve NOIs in a timely manner. As discussed above, some commenters were concerned about

[24] The NPDES regulations at 40 CFR 122.21(b) provide that when a facility or activity is owned by one person, but is operated by another person, it is the operator's duty to obtain a permit. However, EPA's regulations do not preclude an owner from applying for a permit where the operator has not yet been identified or where the owner and operator are the same entity. Thus, in the case of storm water discharges from construction sites, the Agency's regulations do not preclude the owner of a planned construction site during the plan development phase before the bid process has been completed so long as when a different operator is chosen (such as a general contractor), the new operator becomes a co-permittee. EPA considers the term "operator" to include a general contractor in certain circumstances where the contractor has operational control over activities at the site (see November 16, 1990 (55 FR 48034).

the issues of deadlines for submitting NOIs and who must submit NOIs.

In response, the Agency has taken a number of steps to minimize delays to construction projects. As discussed above, shortening the deadline for submitting NOIs and providing flexibility to allow owners to submit NOIs before contractors are selected will minimize project delays. In addition, EPA wants to clarify that, unless the discharger is notified by EPA to the contrary, storm water discharges form construction sites identified in a complete NOI 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, provided a pollution prevention plan has been prepared in accordance with the requirements of the permit. This short time period between submitting NOIs and being authorized to discharge under the general permit will minimize delays to construction project starts.

The Agency also wants to clarify that it does not intend to conduct detailed reviews of all pollution prevention plans prior to authorizing such storm water discharges under today's permit. Today's permits do not require permittees to submit pollution prevention plans to EPA before commencing discharges. As discussed above, today's permits base authorization on the submittal of an NOI rather than on EPA review and approval of individual site pollution prevention plans. However, under the permits, EPA retains authority to request and review storm water pollution prevention plans and to require dischargers to adjust plans or submit individual permit applications where appropriate.

NOI Requirements

A number of commenters on the August 16, 1991, draft general permits indicated that NOI requirements were generally less burdensome than individual permit applications. However, commenters raised several concerns with specific requirements of the NOI.

The August 16, 1991, draft permits would have required that NOIs include the mailing address of the facility. One commenter indicated that construction sites may not have mailing addresses. In response today's permits provide that where a mailing address for a construction site is not available, the location can be described in terms of the latitude and longitude to the nearest 15 seconds or the section, township, range to the nearest quarter section of the approximate center of the facility that the construction site is located in. However, a mailing address must be provided for the site owner and the operator. These addresses can be different than address of the construction site.

The August 16, 1991, draft permits would have required up to four 4 digit standard industrial classification (SIC) codes that best describe the principal products of the facility. EPA notes that while this requirement may be appropriate for other classes of facilities it is generally not necessary for construction activities.

A number of commenters suggested additional information that should be included in NOIs for construction sites, including area to be disturbed, a schedule of activities, erosion and sediment control plans approved by State and local governments. In response, as discussed above, EPA does not intend to conduct intensive plan reviews prior to approving NOIs. Rather, the Agency intends to use information in NOIs primarily for tracking purposes. However, today's permits require more detailed information be included in pollution prevention plans. Therefore, the Agency believes that the NOI requirements of today's permits will provide sufficient information to satisfy the limited purpose for which the Agency intends to use the NOI, and that additional information will be available to the Agency, where necessary, in the required pollution prevention plans or from other sources.

Notice of Termination

Some commenters requested clarification as to when requirements to discharge according to a permit for storm water discharges from construction activities end. Other commenters requested clarification on who is responsible for maintaining vegetation and structures after construction was completed. Some commenters requested that EPA provide a mechanism for reporting to EPA when construction activities at a site have been completed. Several commenters suggested that the general permits provide the discharger with the opportunity to file a notice of termination at the completion of construction.

In response to these concerns, today's permits have been modified to allow permittees to submit a Notice of Termination (NOT) to EPA indicating that the specific activities in the pollution prevention plan have ended and either the area has been stabilized or the operator has changed and the next steps in the plan are the responsibility of a different operator. NOTs must include a certification that disturbed soils at the identified facility have been finally stabilized and temporary erosion and sediment control measures have been removed, or that all storm water discharges associated with industrial activity from the identified facility that are authorized by a NPDES general permit have otherwise been eliminated, or that the person submitting the NOT is no longer the operator.

For the purpose of these general permits, EPA is defining the term "final stabilization" to mean that all soil disturbing activities at the site have been completed, and that a uniform perennial vegetative cover with a density of 70 percent of the cover for the area has been established or that equivalent stabilization measures have been employed. The 70 percent criteria applies to the minimum density of vegetation associated with all disturbed areas where vegetative stabilization is to be established. (The criteria is not met when 30 percent of the exposed area is not stabilized and 70 percent of the exposed area is fully stabilized). Equivalent stabilization measures would include situations where adequate and appropriate geotextiles and/or mulches are used to stabilize a site until vegetation is established. In addition, equivalent measures would include situations where a site is completely covered with impervious structures, and therefore is generally not susceptible to soil and erosion from precipitation.

The Agency believes that final stabilization is a critical component of a construction project. The 70 percent criterion provides a completion point that is directly tied to the key sediment and erosion objectives of the plan. The 70 percent criterion also is consistent with several State and local program requirements (see for example, "Pennsylvania Soil and Erosion Control Manual", 1983). The 70 percent criterion has been identified as economically achievable for several of the management measures for construction activities in the "Proposed Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters", EPA, May 1991, proposed under section 6217(g) of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA).

The Agency wants to also clarify that after the site is finally stabilized and all storm water discharges associated with industrial activity are eliminated from a facility, then the NPDES program generally does not require the discharger to continue to maintain vegetation or storm water measures at the site. Thus, a storm water discharge from a non-industrial site will generally

not be subject to existing NPDES requirements after construction activities, including final stabilization, at the site have been completed pending the expiration of the storm water permit moratorium and EPA regulations under section 402(p)(6) of the CWA [25].

Discharges from Asphalt Plants

A number of commenters indicated that construction activities frequently use mobile asphalt plants and mobile concrete plants at a construction site on a temporary basis. These facilities mix asphalt cement or portland cement with aggregate to produce asphalt pavement or concrete. One commenter indicated that for highway and related public works projects, such plants are often located on leased property immediately adjacent to the construction site. Some commenters recommended that mobile asphalt or concrete plants used at a construction site be covered under the general permit for construction activities. In addition, one commenter recommended that storm water discharges from mobile asphalt or concrete plants used at a construction site that otherwise did not have a storm water discharge associated with industrial activity (e.g., a site that disturbed less than 5 acres), should not be required to obtain an NPDES permit.

In response, the Agency agrees that a number of construction sites will employ the services of mobile asphalt or concrete plants. The Agency notes that this situation is similar to that of a construction project that is conducted at an existing industrial facility (e.g., for the purpose of expanding or otherwise modifying the industrial facility). The Agency has noted that the storm water concerns, along with the appropriate controls, are somewhat different for construction projects than for other traditional industrial facilities, including mobile asphalt or concrete plants. Accordingly, the August 16, 1991, draft general permits contained requirements for pollution prevention plans for storm water discharges from construction sites that were significantly different from plan requirements for other types of industrial facilities. The Agency notes that the operator of mobile asphalt or concrete plants can be different from the site operator. Today's permits reflect EPA's attempts to address these concerns without imposing significant administrative burdens or increasing the potential for delay. Today's general permits clarify that storm water discharges associated with industrial activity from a construction site that are mixed with a storm water discharge from an industrial source other than construction (including storm water discharges from dedicated asphalt or concrete plants) may be covered by the permit under the following conditions:

- The industrial source other than construction is located on the same site as the construction activity;
- 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
- 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 in compliance with the terms, including applicable NOI or application requirements, of a different NPDES general permit or individual permit authorizing such discharges.

This approach will ensure that appropriate pollution prevention measures are implemented for the various components of industrial activity occurring at the site. The Agency also intends to issue general permits for storm water discharges associated with industrial activity from facilities other than construction activities in the near future. The Agency intends that, similar to today's permits, the permits for storm water discharges from traditional industries will establish simplified procedures for permit coverage that will minimize project delays and burdens on permittees with temporary or permanent industrial facilities.

With respect to mobile asphalt or concrete plants at construction sites of less than five acres, the Agency notes that storm water discharges from the asphalt plant or concrete will generally be associated with industrial activity. The regulatory definition of storm water discharge associated with industrial addresses both concrete plants and asphalt plants (see 40 CFR 122.26(b)(14)(ii)). However, the storm water discharges from the rest of the construction site would generally not meet the definition of "storm water associated with industrial activity" if the site did not disturb more than five acres. Thus, the operator of the mobile asphalt or concrete plant would be required to obtain NPDES permit coverage (under a permit other than today's permit), while other storm water discharges from the site would generally not need NPDES permit coverage.

Non-Storm Water Discharges

The August 16, 1991, draft permit required that all discharges covered by the permits had to be composed entirely of storm water, and that discharges of material other than storm water must be in compliance with a different NPDES permit issued for the non-storm water discharge. EPA indicated that it was taking this approach because these general permits were not intended to authorize process wastewaters.

A number of commenters strongly supported the prohibition, or noted that it appeared reasonable. However, a number of comments addressing this provision raised technical concerns that certain non-storm water discharges are commonly allowed to discharge via a separate storm sewer or are otherwise mixed with storm water discharges. These commenters indicated that some classes of non-storm water discharges could not easily be separated from drainage or separate storm sewer systems, and that separating such discharges from a storm system would typically not provide any environmental benefits. Some of these commenters indicated that they believed that a strict prohibition on non-storm water discharges would significantly limit the number of facilities that obtained coverage under the general permit.

In response to these comments, EPA believes that it is important to retain a modified version of this provision in the permit to clarify that certain non-storm water discharges, such as process waste waters, or discharges from portable toilets, are not authorized by these storm water general permits. However, today's permits provide for two sets of circumstances where storm water discharges that are mixed with storm water may be authorized by this permit.

Consistent with the proposal, the permit authorizes storm water discharges associated with industrial activity that are mixed with non-storm water discharges that are in compliance with a different NPDES permit. Typically, the compliance point for numeric limitations for the non-storm water discharge will be before the discharges are mixed. Similarly, where a permit for a non-storm water discharge requires monitoring, such monitoring should be conducted prior to mixing or during dry weather conditions when the storm water discharges are not

[25] However, where a construction project results in an industrial facility or activity, an NPDES permit is still required to authorize any storm water discharges associated with industrial activity (as defined at 40 CFR 122.26(b)(14)). In addition, section 402(p)(2)(E) of the CWA provides EPA and authorized NPDES States with authority to designate storm water discharges that are a significant contributor of pollutants to waters of the United States or that contribute to a violation of a water quality standard as needing an NPDES permit.

occurring. This will allow a discharger to use the same conveyance or outfall for both process discharges authorized by a different NPDES permit and storm water discharges authorized by today's permits.

In response to comments, the Agency recognizes that discharging some classes of non-storm water via separate storm sewers or otherwise mixed with storm water discharges are largely unavoidable and/or may pose little if any environmental risk. Therefore, the Agency has clarified that today's permits authorize storm water discharges from construction activities that may mix with discharges from fire fighting activities, fire hydrant flushings, waters used to wash vehicles or control dust in accordance with efforts to minimize offsite sediment tracking, potable water sources (including waterline flushings), irrigation drainage from watering vegetation, routine exterior building washdown that 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 (including dewatering ground water infiltration), and foundation or footing drains where flows are not contaminated with process materials such as solvents, provided the non-storm water component of the discharge is specifically identified in the pollution prevention plan. In addition, the plan must identify and ensure the implementation of appropriate pollution prevention measures for each of the non-storm water component(s) of the discharge. EPA believes that where these classes of non-storm water discharges are identified in a pollution prevention plan and where appropriate pollution prevention measures are evaluated, identified and implemented, they generally pose low risks to the environment. The Agency also notes that EPA can request individual permit applications for such discharges where appropriate. The Agency is not requiring that flows from fire-fighting activities be identified in plans because of the emergency nature of such discharges and because of their low probability and the unpredictability of their occurrence. The Agency notes that the approach in today's permits taken for non-storm water discharges is parallel to the approach taken for non-storm water discharges to large and medium municipal separate storm sewer systems in its November 16, 1990 rulemaking (55 FR 47990).

One commenter on the August 16, 1991, draft permits suggested that EPA exempt discharges from a 25-year, 24-hour storm event from the prohibition on non-storm water discharges, because during such an event non-storm water discharges may occur that are beyond the permittee's ability to control. EPA does not agree that the occurrence of a 25-year, 24-hour storm event should result in a wholesale exemption from NPDES requirements for non-storm water discharges. Large storm events should not be used as an excuse for dumping non-storm water discharges to waters of the United States; such discharges remain point source discharges under the CWA. Typically, systems that can result in non-storm water discharges should be designed to ensure no unpermitted discharge during large storm events. The Agency believes that the approach taken in today's permits is suitable for such releases, and does not want to create confusion or encourage such releases by providing such an exemption. Factors such as extreme or hazardous weather conditions can be evaluated as a matter of enforcement discretion where appropriate.

Releases of Reportable Quantities of Hazardous Substances

The August 16, 1991, draft general permits provided that the permits would not relieve the permittee of reporting requirements for releases of hazardous substances in excess of reporting quantities established under 40 CFR 117 and 40 CFR 302. The draft permits further provided that the discharge of hazardous substances in storm water discharges are to be minimized in accordance with the applicable storm water pollution prevention plan and that in no case shall storm water discharges contain a hazardous substance equal to or in excess of a reporting quantity.

A number of commenters strongly supported the provision or noted that it appeared reasonable. However, several other commenters indicated that the prohibition on releases of hazardous substances in excess of reporting quantities acted as a series of effluent limitations, and that the Agency had not established such limitations consistent with the technology-based or water quality-based standards of the CWA. These commenters indicated that the reporting quantities established under 40 CFR 117 and 40 CFR 302 were not developed as numeric effluent limitations under the NPDES program. One of these commenters indicated that some hazardous substances still had reporting quantities of 1 pound which had been arbitrarily established by Congress. However, a number of the commenters that objected to the prohibition as an perceived effluent limitation agreed that the reporting such discharges was appropriate and that a facility with such a discharge should not be exempt from liability provisions under CERCLA or the CWA. Some of these commenters also noted that the use of best management practices aimed at preventing and/or cleaning up the release, instead of numeric end-of-pipe limitations, is the most effective way to address these discharges.

In response, the Agency has modified this provision in today's permits for the purposes of providing additional consistency with the reporting requirements for releases of hazardous substances and oil in excess of reporting quantities at 40 CFR 110, 40 CFR 117 and 40 CFR 302, to provide clarification that the Agency does not intend for the prohibition on releases in excess of reporting quantities to act as numeric effluent limitations, and to address such releases in a manner consistent with the approach taken in today's permits with respect to pollution prevention plan implementation.

Today's permits require that the discharge of hazardous substances or oil in the storm water discharge(s) from a facility must be minimized in accordance with the applicable storm water pollution prevention plan for the facility. 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, the permittee must:

- Notify the National Response Center (NRC) as soon as he or she has knowledge of the discharge;
- Notify the appropriate EPA Regional Office within 14 calendar days of knowledge of the release; and
- Modify the storm water pollution prevention plan for the facility within 14 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 permittee must modify the plan as appropriate to identify measures to prevent the reoccurrence of such releases and to respond to such releases.

The Agency has clarified that today's permits do not authorize the discharge of hazardous substances or oil resulting from an on-site spill. This is consistent with CWA and CERCLA requirements for hazardous substances and oil for anticipated intermittent point source discharges at 40 CFR 117.12(d)(2)(i).

The Agency believes that this approach will result in the same objectives as the approach laid out in the August 16, 1991, draft permits (i.e., to provide the Agency with information that allows for considering whether an individual permit is appropriate), while minimizing confusion and concerns regarding the provision. Further, this approach provides additional flexibility for implementing appropriate pollution prevention measures. The Agency also believes that ample enforcement authority exists under the CWA and CERCLA for addressing releases of hazardous substances in excess of reportable quantities. The approach taken in the today's permits also supplements those authorities by providing additional notification requirements and by addressing pollution prevention measures in addition to the response/enforcement authorities under CERCLA and section 311 of the CWA.

One commenter raised concerns that the prohibition implied that discharges of a hazardous substance up to an applicable reporting quantity was acceptable and that a permittee was not required to do anything unless such a release occurred. In response, EPA does not intend to imply that discharges of hazardous substances of amounts up to an applicable reporting quantity are acceptable in the sense that a discharger must do nothing until they discharge a hazardous substance or oil in excess of a reportable quantity. The Agency notes that these permits do not establish numeric effluent limitations for storm water discharges from construction activities. Rather, the permits require dischargers to develop and implement best management practices and pollution prevention measures to reduce and/or control pollutants in the discharge even in cases where the discharge does not contain hazardous substances or contains hazardous substances at levels significantly lower than reporting quantities.

One commenter suggested that EPA exempt discharges from a 25-year, 24-hour storm event from the prohibition on reportable quantities because such releases may be beyond the discharger's ability to control. In response, the Agency has, except for spills, modified today's permit by replacing the prohibition on reporting quantities with a requirement the discharge of hazardous substances or oil must be minimized in accordance with the applicable storm water pollution prevention plan for the facility. Today's permits are not intended to authorize spills of hazardous substances from non-storm sources, and the Agency does not believe that it would be appropriate to authorize such discharges during a 25-year, 24-storm event.

Pollution Prevention Plan Requirements

At the heart of the August 16, 1991, draft permits were flexible requirements for the development and implementation of storm water pollution prevention plans. The draft general permits proposed that plans identify of pollutant sources and specify implementation of measures to prevent or otherwise reduce pollutants in storm water discharges. For construction activities, the draft general permits proposed a flexible framework for the development of control measures to be implemented in accordance with pollution prevention plans. The flexible framework for controls primarily addressed sediment and erosion measures, and storm water management measures.

A number of commenters encouraged EPA to maintain flexibility in controls because of the site-specific nature of construction activities. These commenters expressed their belief that adequate flexibility allows for the most efficient and cost-effective implementation of pollution prevention plans for sediment and erosion control and storm water management. The Agency agrees that flexibility is important to establishing effective and workable general permits.

A large construction industry trade association noted that, generally, the pollution prevention plans requirements of the August 16, 1991, draft general permits reflected an appropriate level of erosion and storm water management control for most construction projects. Their comments indicated that most development projects already employ the controls set forth in the plan.

A number of commenters stressed the importance of appropriate timing of controls, for example, that perimeter controls should be established before conducting major grubbing and grading activities. Other commenters stressed the importance of good site planning as a primary control technique for controlling sediment in storm water discharges from construction sites. Some of these commenters pointed to a number of benefits of good site planning, such as limiting the amount of disturbed area at any given time. Other commenters raised concerns that because activities at construction site typically change during the course of the project, permittees could not provide for compliance with all provisions of the plan at all times. In other words, the timing of certain controls would be dependent on the timing associated with construction activities that were relevant to that control.

The Agency agrees with these comments that the timing of controls and site planning are critical components to the success of the measures identified in a plan. As is discussed in more detail later, the Agency believes that good site planning also provides a number of significant economic incentives to dischargers. In addition, the Agency recognizes that sediment and erosion controls and other pollution prevention measures need to be coordinated with site activities, and that not all measures will be taken at the same time at a given site. For example, it is generally not appropriate to attempt to establish vegetation on portions of a site unless construction activities which will disturb that portion of the site have been completed or are temporary inactive.

In response to these concerns, the Agency has modified the permit to require that the plan clearly describe the intended sequence of major activities, and that for each control measure, the timing during the construction process for which the measure will be implemented. For example, perimeter controls for one portion of the site might 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. In that instance, perimeter controls would be actively maintained until final stabilization of portions of the site that are upward of the perimeter control. Requiring that plans clearly describe the intended sequence of major activities will assist in ensuring that measures are implemented at appropriate times. In addition, as discussed in more detail below, the Agency believes that this provision will encourage sound site planning, which can provide economic incentives to the discharger while at the same time minimize the discharge of pollutants to waters of the United States.

Several commenters urged EPA to impose sediment and erosion controls such as sediment traps and stabilization measures on all storm water discharges from construction activities over 1 or 2 acres is size. In response, EPA wants to clarify that these general permits only address storm water discharges from construction activities that are classified as "associated with industrial activity" pursuant to 40 CFR 122.26(b)(14). The regulatory definition of "storm water discharge associated with industrial activity" is limited to those construction activities or common plans of development or sale that will result in

the disturbance of five or more acres total land area.

A number of other commenters suggested that storm water discharges from construction activities subject to State and local requirements where local regulations are more or less in conformance with Federal guidelines should be exempted from either NPDES permit requirements altogether or from the requirement to develop pollution prevention plans. In response, the Agency wants to clarify that today's general permits can allow coverage of all storm water discharges from construction activities that result in the disturbance of five or more acres.

Section 402(p)(2)(B) of the CWA provides that storm water discharges associated with industrial activity must be authorized by an NPDES permit. EPA has defined the term "storm water discharge associated with industrial activity" to include storm water discharges from construction sites that disturb 5 or more acres (see 40 CFR 122.26(b)(14)).[26] Storm water discharges that are classified as a storm water discharge associated with industrial activity are not exempted from the requirement to obtain an NPDES permit even though they are in compliance with stringent State or local requirements. The Agency has attempted to develop the requirements in today's permits such that they will not conflict with State or local requirements. As part of this effort, today's permits require that pollution prevention plans for construction sites include requirements in applicable sediment and erosion site and/or storm water management plans or site permits approved by State or local officials.

Several commenters indicated that the amount of detail required in a plan was unduly burdensome for small sites. In response, EPA has attempted to provide a flexible framework for developing pollution prevention plans for construction activities, which minimizes burdens on construction site operators consistent with the requirements of the CWA. The Agency notes that many State or local governments typically require sediment and erosion plans, grading plans and/or storm water management plans that are significantly more detailed than those required under today's permits and that are accompanied by a more burdensome review process, and that such requirements usually apply to most sites that are smaller than 5 acres, as well as those sites that are 5 or more acres. The Agency has attempted to ensure that dischargers would be able to build on plans developed in accordance with State and local requirements and thereby minimize the burdens of today's permit requirements. The Agency also wants to clarify that under the NPDES regulations, only construction activities with a "storm water discharge associated with industrial activity" (e.g., those sites that disturb more than five acres) are generally required to obtain NPDES permit coverage.

A number of commenters indicated their belief that large linear construction projects, such as highway, pipeline, or utility corridor projects should be exempt from NPDES requirements. In response, the Agency again wants to clarify that the regulatory definition of "storm water associated with industrial activity" defines applicability in terms of whether a construction project disturbs more than five acres, and that storm water discharges from linear construction projects that satisfy this criterion are required to obtain NPDES permit coverage.

Several commenters indicated that projects that crossed State lines would be subject to different permits. The Agency wants to clarify that where a construction project with storm water discharges associated with industrial activity crosses State lines, the discharger must obtain permit coverage in each of the States where construction activities associated with the project will occur.

Pollutant Source Identification Requirements

The August 16, 1991, draft permits contained tailored pollutant source identification requirements for pollution prevention plans for construction activities. The draft permits required that plans provide a description of the nature of the construction activity; estimates of the total area of the site and the area of the site that is expected to undergo excavation or grading; an estimate of the runoff coefficient of the site and existing data describing the soil or the quality of any discharge from the site; a site map indicating drainage patterns and approximate slopes after major grading activities, the location of major control structures identified in the plan, and the location of surface waters; and the name of receiving waters.

One commenter indicated that runoff coefficients would typically change during the construction process, and requested clarification as to when during the construction process that coefficient should be estimated. In response, the Agency has clarified in the final permit that the site description in the plan should contain an estimate of the runoff coefficient when construction at the site is completed. The Agency believes that an estimate of the runoff coefficient after construction is completed is important for characterizing the discharge and sizing drainage and storm water management devices. The Agency believes that dischargers will generally have access to site plans that will allow the estimation of such coefficients.

A number of commenters urged EPA to require additional information describing other major features that could be pollutant sources. Various items that were suggested by commenters included areas used for storage of soils, chemicals and wastes, as well as areas where spills of toxic or hazardous materials may occur (such as areas where fueling activities are conducted).

In response to these comments, the Agency encourages dischargers to identify additional major pollutant sources in the plan where appropriate, such as soil stockpiles, vehicle maintenance areas, waste storage area, and portable sanitary units. However, today's permits do not specify that additional activities or features of sites be identified to ensure flexibility and to avoid confusion.

One commenter recommended that EPA not require the location of soil stockpiles to be identified in pollution prevention plans, since soil stockpiles are typically stored for short durations or are moved from location to location several times over short periods of time. Another commenter indicated that sites for soil storage are usually not identified until construction actually begins.

In response, today's permits require permittees to provide a description of potential sources of pollution that may reasonably be expected to affect the quality of storm water discharges from the site, such as exposed, unstabilized soil stockpiles. The Agency wants to clarify that where major sources of pollutants are identified in a storm water pollution prevention plan for a site, and the pollutant source is moved, or conditions at the site change, then the plan is to be modified to address the change in condition. Identifying a pollutant source, such as a soil stockpile, in a storm water pollution prevention plan does not preclude a discharger from moving the pollutant source during the construction process, as long as the plan is updated in an appropriate manner. Similarly, if a major pollutant source, such as a soil

[26] 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. *Natural Resources Defense Council* v. *EPA*, Nos. 90-70671 and 91-70200 (9th Cir., June 4, 1992).

stockpile, is not initially identified in a plan, the discharger is not precluded from establishing the stockpile at a later date as long as the plan is updated in an appropriate manner. This approach is consistent with good planning practices that are necessary for successful implementation of sediment and erosion controls.

Several commenters indicated that large, linear construction projects, such as pipeline projects, road construction, and powerline installation offered unique circumstances and would have difficulty in providing source identification information. One commenter gave the example that it would not be possible to provide a concise description of a project occurring over a 150 mile corridor.

In response, the Agency believes that the requirements in today's permits should be applicable to large, linear construction projects. The Agency believes that the basic information required in the plan is important for evaluating and designing pollution prevention measures. The Agency agrees that a 150 mile long construction project is a complex undertaking, and as a result, that storm water pollution prevention plans for such projects may not be "concise statements". However, the Agency recognizes the amount of preplanning that goes into such a project, and believes that most of the information required in the source identification portions of the permits will either already be available or can be developed with a reasonable effort. For example, operations involving the construction of roads or other structures will be concerned with evaluating and/or modifying grades. Information used in the construction process can be used to develop estimates or descriptions of drainage patterns and approximate slopes anticipated after grading activities.

Sediment and Erosion Controls—General Comments

The August 16, 1991, draft general permits recognized that measures to control sediment and erosion at construction activities could be broken into two major classes: (1) Vegetation measures that are intended to cover or maintain an existing cover over soils; and (2) structural practices to divert flows from upland areas or to remove sediment from site runoff. The draft general permits required that pollution prevention plans for construction activities contain a description of both vegetation measures and structural practices that would be used at the site.

A number of commenters indicated that the primary water quality concern with construction sites is the control of suspended solids. These commenters implied that the Agency should focus efforts primarily or exclusively on sediment and erosion controls at construction sites. The Agency agrees that controlling the discharge of sediment is a primary objective of today's permits. However, the Agency also notes that in some circumstances, material handling practices at a site may result in the discharge of toxic pollutants via a storm water conveyance to waters of the United States and should be addressed in the storm water pollution prevention plans for construction sites. In addition, studies such as the Nationwide Urban Runoff Program (NURP) show that after construction is completed, storm water from the site can contain a variety of toxic metals and other constituents. The storm water management measures in today's permits can be designed to reduce the discharge of these pollutants.

Some commenters indicated they believed that the mandatory controls listed should be provided as guidelines to be considered on a case-by-case basis. Another commenter did not support the inclusion of design standards into sediment controls, but rather favored the development of guidelines to be considered on a case-by-case basis, with individual site controls selected by the permittee based on a consideration of the area, terrain, climate, type of construction, duration of construction and any other relevant factors. In response, the Agency believes that it has provided an appropriate amount of flexibility in today's general permits. However, where dischargers believe that the measures required by the permit are not appropriate for their site, they may submit an individual application to the appropriate EPA Regional Office rather than submit an NOI to be covered by these permits.

One commenter suggested that a simple performance standard for sediment and erosion control, such as requiring "measures to keep silt out of streams" should be incorporated into the permit. Another commenter noted that one State (which is an authorized NPDES State), requires that turbidity downstream from the construction site not exceed upstream turbidity by more than 60 nephelometric turbidity units (NTUs). In response, the Agency will continue to evaluate appropriate design and performance standards for storm water discharges from construction activities. However, at this time, the Agency does not have sufficient data to support the application of the performance standard suggested by the commenter to the variety of site-specific conditions that the facilities covered by today's permits will face.

Sediment and Erosion Controls—Stabilization Measures

The August 16, 1991, draft general permits required that storm water pollution prevention plans from construction activities contain a description of vegetative practices designed to preserve existing vegetation where attainable and to revegetate open areas as soon as practicable after grading or construction. The draft permits provided that vegetative practices are to be initiated on all disturbed areas within 7 calendar days of the last activity at the area. The permit recognized that vegetative practices may include: temporary seeding, permanent seeding, mulching, sod stabilization, vegetative buffer strips, and protection of trees.

Several commenters requested that EPA clarify whether commonly used stabilization measures such as mulching, providing a straw cover, or the use of geotextiles would be considered "vegetative practices" under the permits. In response, the Agency has replaced the term "vegetative practices" with the term "stabilization measures" in the final permits. The Agency believes that replacing the term "vegetative practices" (used in the August 16, 1991, draft general permits), with the term "stabilization measures" will ensure adequate flexibility to allow the use of erosion control measures, such as mulch or geotextiles, other than establishing vegetative cover. The Agency had intended such flexibility in the August 16, 1991, draft permits, but a number of commenters were concerned that a more limited interpretation of the term "vegetative practices" might result. The Agency believes that these misinterpretations will be minimized by this terminology change.

One commenter suggested that gabions (wire mesh boxes filled with rock and used for bank or slope stabilization) be listed as a sediment and erosion control. The Agency agrees that gabions, where installed correctly, are an effective measure for stabilizing channels and steep slopes and can act as a retaining wall. The Agency wants to clarify that in some situations, gabions can be used as a component of a strategy to comply with the stabilization provisions of today's permits and has listed them as an available measure. However, the Agency believes that attempting to list every possible soil and erosion measure in the permit would cause confusion and

has added the term "other appropriate measures" to the list of stabilization measures in the permit to ensure the intended flexibility in selecting measures.

A number of commenters addressed the requirement in the August 16, 1991, draft general permits that vegetative practices (stabilization measures) be initiated within 7 calendar days of the last activity at disturbed areas. Several of these commenters requested clarification of the phrase "last activity at that area". These commenters indicated that some dischargers may argue that the provision could be interpreted not to apply until after final rough grading occurs even where portions of a site undergo initial grading followed by an extended period (several months or even years) where no construction activity occurs on that part of the site. In response to this concern, the Agency has modified the language in the final permit to address stabilization requirements "after the construction activity in that portion of the site has temporarily or permanently ceased". The Agency recognizes that at some construction sites, a large area can be denuded of vegetation by initial grading or other activities, even though subsequent construction activity will not be conducted on significant portions of the site for several months or even years. The Agency also recognizes that disturbed areas where no construction is occurring for extended periods can create significant amounts of pollutants if interim stabilization measures are not taken. The Agency agrees with commenters that an interpretation of this provision that does not address situations where construction activities temporarily cease for an extended length of time is not consistent with the stabilization measures required under the permits. The Agency has therefore clarified that the stabilization requirements in today's permits apply to when activities temporarily and permanently cease.

A number of commenters questioned the length of the seven day time period in the draft permits. Some commenters suggested a number of alternatives that would provide additional flexibility, such as requiring that vegetative practices be initiated "within a reasonable period upon completion of final grading", expanding the time frame to a longer period (such as 14 or 30 days), conditioning the requirement to apply only during periods of the year when rain is reasonably expected, or specifying that any State or local requirements for the initiation of vegetative practices take precedence over the general permit requirement. These comments generally noted that, although the 7 day period is used by some States and local governments, a 14 day period is more commonly used.

In response to these comments, the Agency is modifying the language in the final permits to provide that, except for three situations, stabilization measures may be initiated as soon as practicable, but in no case more than 14 days after construction activity on a portion of the site has temporarily or permanently ceased. The three exceptions to this requirement are the following:

- Where construction activities will resume on a portion of the site within 21 days from when the construction activities ceased;
- Where the initiation of stabilization measures is precluded by snow cover, in which case, stabilization measures must be initiated as soon as practicable.
- 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 is precluded by seasonal arid condition, in which case, stabilization measures must be initiated as soon as practicable.

This modification has been made so that the requirement in these permits is more consistent with the various State and local requirements in areas where the permits will apply and to provide construction site operators additional flexibility in providing for stabilization measures. This modification also provides flexibility in situations where activities at a portion of a site are discontinued for only a relatively short period of time (i.e., more than 14 days, but less than 21 days).

One commenter expressed concern that a 7 day period was too long and that even a short rainstorm during the 7 day period could result in damaging sediment and erosion of streams. This commenter urged EPA to require stabilization within 72 hours. The commenter indicated that the 72 hour time period was consistent with the Agency's proposed guidance specifying management measures for sources of Nonpoint Pollution in Coastal Waters.

The Agency agrees that storm events during the period prior to stabilization can result in the discharge of significant amounts of sediments to waters of the United States. The Agency also notes that EPA requested comment on a 72 hour stabilization requirement for particularly sensitive watersheds (but not for general usage) in "Proposed Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters", May 1991. While the Agency agrees that a 72 hour stabilization requirement should be considered for sensitive watersheds, the Agency does not agree that this criterion is appropriate for today's general permits, which are intended to address a wide range of facilities occurring under a wide range of conditions.

Several commenters urged EPA to require that stabilization measures be completed within a specified time after the last activity, rather than just initiated. These commenters pointed out that where seeding occurred without mulcing or geotextiles, a significant amount of erosion could occur prior to germination and establishment of a protective cover. In response, the Agency is concerned that establishing deadlines for when stabilization measures must be completed may not provide enough flexibility, given the variety of conditions that facilities covered by today's permits will face. While the Agency recognizes that erosion can occur during the time between initiation of stabilization measures and when an area is finally stabilized, the Agency believes that establishing a time period by which vegetation must be established in these general permits may in some cases limit the ability of the discharger to determine with certainty that initiated measures will be fully successful within the minimum time frame. Therefore, today's permits only address when stabilization measures must be initiated. However, the Agency does encourage dischargers to complete stabilization measures as quickly as possible and to use measures such as mulch or geotextiles where there will be a significant lag between initiation of vegetative measures and establishing a satisfactory vegetative cover.

One commenter suggested that the time period for initiating stabilization measures should correspond to the time period that the NPDES authority plans to conduct routine site inspections. In other words, the commenter suggested that if EPA intended to conduct a site inspection every two weeks, dischargers should be given at least 2 weeks before initiating stabilization measures otherwise the requirements may not be adequately enforced. In response, the Agency is not basing the time period on the frequency at which the Agency is likely to conduct inspections. The Agency will rely on a number of tools, such as permittee inspection and compliance evaluation reports and unannounced EPA site inspections to ensure compliance with this provision.

A number of commenters raised concerns that the draft provision did not

take into account different climatic conditions in the various States where EPA was issuing permits. In particular, a number of commenters questioned the feasibility of initiating vegetative practices within 7 days of the last activity during periods that were not conducive to revegetation efforts, such as in dry weather periods or during winter conditions.

A number of these commenters urged the Agency to provide for special considerations in arid regions or for time periods where there was snow cover.

Some of these commenters noted that seeding, planting, or sodding within seven days may not be appropriate because the best success with planting occurs during limited seasons. Other commenters noted that in arid regions, hot, dry summer months are not conductive to good seed germination and that plants have little chance of survival without a great investment of time, money, and water. In such arid areas, water for artificial irrigation is often not available and, where available, is expensive and may not be the best use of limited water resources. Some of these commenters indicated that revegetation efforts should be well coordinated with seasonal weather conditions to minimize the loss and costs of vegetation.

One commenter indicated that in arid regions or regions with predictably long durations of dry weather, it may be more cost effective for the builder to wait to complete two or three homes and landscape simultaneously rather than landscape each home site as construction is completed. If rainfall is not expected during this period and perimeter sediment controls are maintained, this practice would pose limited threats to water quality. Other commenters indicated their belief that rapid stabilization measures may not always be necessary, especially in areas of the country which go many weeks in the summer without any rain, because of the lower likelihood of discharging storm water. One commenter indicated that EPA should allow the option of "equivalent measures" such as proper slope design and construction, with seeding or planting to occur as soon as conditions are favorable, for protecting exposed soils during dry seasons.

While the Agency agrees that some phases of the stabilization process, such as spreading grass or wildflower seeds, should be coordinated with seasonal climatic conditions, measures such as the application of mulch and/or geotextiles do not depend on conditions that allow grass or wildflower seeds to germinate or become established. However, at this point in time, the Agency believes it is appropriate to provide additional flexibility with respect to stabilization requirements during dry seasons in arid or semi-arid climates while the Agency continues to evaluate appropriate stabilization measures for arid and semi-arid climates. Therefore, today's permits provide that where stabilization measures are precluded by seasonal arid conditions, the 14 day criteria is replaced by the criteria that stabilization measures shall be initiated as soon as practicable. In general, the determination of when stabilization measures are practicable should consider seasonal rainfall patterns. In the August 16, 1991, notice, the Agency requested comment on defining "arid areas" as areas with an average annual rainfall of less than 10 inches and "semi-arid areas" as areas with an average annual rainfall of 10 to 20 inches. Most comments addressing this issue generally agreed that this was an acceptable way to characterize arid and semi-arid conditions. Therefore, today's permits incorporate these criteria for defining arid and semi-arid regions.

Other commenters noted that snow cover could preclude the initiation of stabilization measures, and that frozen ground could interfere with establishing vegetation. The Agency agrees that snow cover may preclude the initiation of stabilization measures, and has modified today's permits to provide additional flexibility in such cases. The Agency recognizes that frozen ground conditions will generally slow vegetative growth, but will not preclude the initiation of stabilization measures such as the use of mulches, geotextiles and even seeding. The Agency also recognizes that initiating vegetative measures on frozen ground conditions differs from such activities in arid conditions in several respects. First, initiating vegetative measures in arid conditions may require artificial watering to avoid having seed and seedlings die, whereas on frozen ground, seeds generally will remain dormant but undergo less harm. Second, the potential for storm water discharges during arid conditions and during winter conditions in non-arid climates is significantly different. The additional flexibility in today's permits is limited to snow cover and arid conditions, the conditions that EPA has identified as creating the most difficulty and expense for initiating stabilization measures.

One commenter suggested that selective location of small detention basins for removal of runoff sediments would be more successful and cost effective than vegetative measures. The Agency disagrees with this comment. As discussed in the August 16, 1991, notice, stabilization measures are generally recognized as being the most important measures taken to prevent off-site sediment movement, and can provide up to a six-fold reduction in discharge suspended sediment levels. Stabilization measures, such as restoring vegetative cover, can prevent erosion by protecting soils. Stabilization measures should be viewed as the first line of defense in preventing off-site sediment movement. Structural sediment measures are generally recognized as a second line of defense for portions of the site where stabilization practices cannot be immediately employed due to construction activity. Structural sediment measures focus on removing pollutants from runoff. It is typically more effective to stabilize a portion of a site (where possible) than to provide structural controls that attempt to remove pollutants from runoff. Structural controls typically only remove 50 to 95 percent of the sediment in a discharge. In addition, small basins are expected to have discharges from a significant percentage of storm events. However, stabilization measures can be difficult to employ while construction activities are occurring on a specific portion of the site.

One commenter urged the Agency to specify a minimum amount or percentage of area at construction sites where vegetation must be preserved. While the Agency agrees with the commenter that preserving vegetation during construction activities can often be the most efficient and cost-effective sediment and erosion practice, the Agency does not believe that a numeric criterion could be established that would be appropriate for all facilities covered by these general permits. For some sites, such as infill projects in densely developed areas, requiring dischargers to preserve a minimum amount of vegetation could result in significant modifications to project designs. The Agency does not believe that today's general permit is the appropriate tool for establishing such site-specific criteria for finished sites. Rather, today's permits require that plans ensure that existing vegetation is preserved where attainable. The Agency believes that an approach using this narrative criterion is more appropriate because it will provide more flexibility in meeting the objective of preserving existing vegetation. While today's permit does not establish a minimum amount of vegetation that must be preserved at a site, it does provide that a site must undergo final stabilization prior to eliminating a storm water

discharge associated with industrial activity from a construction site. Today's permits require that plans ensure that existing vegetation is preserved where attainable. Planning to preserve existing vegetation where attainable can significantly reduce the compliance costs of today's permits by minimizing the amount of disturbed areas where stabilization measures must occur. This will also decrease pollutant discharges.

Sediment and Erosion Controls—Structural Measures

The August 16, 1991, draft permits required storm water pollution plans for construction activities to include a description of structural practices to the degree attainable to divert flows or otherwise limit runoff from exposed areas of the site. The draft permits required that detention basins providing storage for a 10 year, 24 hour storm or equivalent measures be established where attainable where more than 10 disturbed acres at one time are served by a common drainage location. The draft permits required that silt fences, straw bale dikes, or equivalent sediment controls be provided for all sideslope and downslope boundaries of the construction area where a sediment basin was not attainable for drainage locations serving more than 10 disturbed acres and for drainage locations which serve 10 or less disturbed acres.

A number of commenters indicated that straw bales and brush barriers have limited effectiveness for successful use in controlling sediment in runoff from construction activities. Some of these commenters indicated that these controls are seldom if ever installed properly or maintained, and must be replaced frequently. Some commenters indicated that encouraging straw bales or brush barriers might conflict with State or local requirements that might not allow their use as a sediment control measure. These commenters recommend that straw bales and brush barriers should not be identified in the permit as methods of structural control. In response to comments, and based on further evaluation of the administrative record, the Agency agrees with these commenters and has modified the final general permits so that these controls are not specifically listed as an appropriate structural control. The permits indicate that structural 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. In addition, today's permits require that pollution prevention plans include requirements specified in applicable sediment and erosion and/or storm water management site plans or site permits that have been approved by State or local officials.

Several commenters indicated that temporary sediment traps should be required for discharge points where temporary sediment basins were not required, including where the area served by a drainage location was less than 5 acres and had concentrated flows or which drained an area of greater than 2 acres. The Agency agrees that properly installed and maintained temporary sediment traps can provide effective sediment removal where sediment basins are not economically attainable. The Agency also recognizes that installing sediment traps can be less expensive than installing larger sediment basins, and that in some situations where it is not economically attainable to install a sediment basin, it is easier to find locations for siting smaller sediment traps. In response, today's permits continue to specifically list sediment traps as a structural practice, and the Agency strongly recommends the use of sediment traps where more effective sediment basins are not economically attainable.

In the August 16, 1991, notice, the Agency requested comment on the minimum size criteria for the temporary sediment basins and on whether a 10 acre threshold for requiring sediment control basins was appropriate. The Agency received a number of commenters addressing the minimum size criteria for the temporary sediment basins. A number of the industry commenters supported the 10-year, 24-hour storm as being a reasonable basis for sediment basin design, and noted that the rule provided the necessary flexibility to be appropriate. One regulatory Agency suggested use of a more stringent 25-year, 24-hour storm. However, other commenters urged the Agency to use a smaller storm as the basis for design, and offered various alternates. One of these commenters indicated its belief that a majority of sites would find the 10-year, 24-hour criteria to be unattainable, and that the use of sediment basins would be rejected at these sites in favor of less effective controls.

In response to comments, today's permits are providing additional flexibility for requirements for sediment basins by using a criteria based on the 2-year, 24-hour storm rather than the 10-year, 24-hour storm. [As discussed below, today's permits use a criterion expressed in terms of cubic feet of water storage per drainage acre as a surrogate for the 2-year, 24-hour storm). The Agency has selected the 2-year, 24-hour storm in response to concerns that the 10-year, 24-hour storm was too stringent in some cases, and based on further consideration of standards of practice in the construction industry and by a number of State and local governments as the basis for basin design. As discussed below, the 2-year, 24-hour storm event is consistent with the Agency's approach in the "Proposed Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters", EPA, May 1991.

Several commenters indicated that expressing the size criteria for sediments basins in terms of a storm event was too vague or that permittees would have difficulty ascertaining the size of a design storm in a particular region. Several other commenters that supplied calculations or other information exhibited some confusion regarding the manner in which they calculated basin volumes based on a storm event. Other commenters indicated that different models or equations would result in significantly different basin volumes for the same site and design-storm. While the Agency does not agree that permittees would necessarily have a difficult time ascertaining the size of a design storm,[27] the Agency is concerned about the possible confusion among the construction industry associated with basing the size of basins on a design storm, and the possible variation in basin volume based solely on the equation or model used. In order to minimize confusion among permittees, the Agency has decided to define the minimum size of basins in terms of a volume criterion (cubic feet of water storage per disturbed acre) rather than using a design storm. Using a criterion of 3,600 cubic feet per acre as a surrogate for a two-year storm will provide clarity to the requirement. In addition, a criterion based on cubic feet per acre can be more equitable than a criterion based on a storm size, since applying a criterion based on a storm size requires the use of a hydraulic model. Since hydraulic models can differ, and different parameters can be used in models to lead to different results,

[27] This information is available from a number of sources, including from the National Climatic Center of the Environmental Data Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce; and "Weather Bureau Technical Paper No. 40", May 1961 and "NOAA Atlas 2", 1973 for the 11 Western States.

dischargers using different models and applying different criterion to their models could end up with different size specifications for essentially the same size storm. However, a criterion based on the number of cubic feet of water storage per disturbed acre will be much more equitably applied since it is based on only one parameter (the number of disturbed acres) which is easily and uniformly estimated.

EPA has established the 3,600 cubic feet per disturbed acre criteria based on an evaluation of the 2-year, 24-hour storm for a number of areas addressed by today's permits. The Agency selected a 3-inch storm event as representative of the 2-year, 24-hour storm, based on the evaluation of the 2-year, 24-hour storm in a number of locations. The Agency further assumed that a 3-inch storm will generate 1 inch of runoff which is approximately 3,600 cubic feet. (This assumes that one-third of the rainfall runs off the site, and two-thirds of the rainfall is infiltrated at the site). The 3,600 cubic foot criterion has also been identified in "Proposed Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters", EPA, May 1991, as being able to handle 90 percent of the storms each year.[28]

A number of commenters objected to the allowing an exemption from the requirement to provide basins where such basins are not attainable. One commenter implied that the exemption from the requirement to install a basin was akin to an exemption from the requirement to obtain an NPDES permit. Several industry commenters indicated that this would give operators who are unconcerned about good design/construction practices a competitive advantage by providing an overly broad loophole, and requested that EPA remove the exemption to provide a "level playing field" for all. Other commenters indicated that other structural controls such as silt fences were not as effective as sediment basins.

In response, the Agency remains concerned about eliminating the exemption in this permit. The Agency believes there will be circumstances where it is not technically feasible to provide sediment basins, and does not believe that it would be appropriate to effectively preclude coverage of such sites under today's permits. Today's permits are intended to address a large number of construction sites. Sufficient flexibility is necessary to accommodate differences between sites. Further, it should be recognized that sediment basins are just one component of the comprehensive pollution prevention approach required under today's permits. As part of this comprehensive approach, today's permits requires that for drainage locations which serve 10 or more disturbed acres and where a sediment basin or equivalent controls are not economically attainable, sediment traps, silt fences, or equivalent sediment controls are required for all sideslope and downslope. While the Agency notes that these substitute structural controls may not be as effective as sediment basins at removing sediment from runoff, the Agency notes that it has limited this exemption for drainage locations that serve more than 10 disturbed acres to situations where basins are unattainable. In such cases, dischargers are still required to comply with the other provision of the permit, and are encouraged to emphasize other aspects of the pollution prevention plan, such as preserving mature vegetation, sequencing project activities to minimize the amount of exposed area, and quickly stabilizing disturbed areas when activities have temporarily or permanently ceased.

A number of commenters requested clarification of the factors that should be considered when determining whether a sediment basin would be attainable. One commenter indicated that in heavily populated, densely developed areas, it may be physically impossible to implement sediment basins. One commenter indicated that detention basins should be required when an area will be disturbed for a certain length of time rather than being based on the size of the disturbance, and that other factors, such as the receiving stream, should also be factored into any decision. One commenter indicated that regulatory hurdles associated with obtaining any Federal, State or local permit for installing of a basin may make a basin unattainable.

In response, the Agency wants to clarify that an evaluation of whether a sediment basin is unattainable at a particular site should be based on the reasonableness of the relationship between the costs of attaining a reduction in effluent and the effluent reduction benefits derived. This evaluation should be based on a consideration of factors related to the availability of space for the basin, and difficulties in construction (e.g. removing underlying bedrock). Construction activities that commence prior to October 1, 1992 may consider the existing site plan when evaluating whether sediment basins are unattainable. For example, a basin may be unattainable because of space limitations associated with site design. However, the attainability of sediment basins at sites which began construction prior to October 1, 1992 should be reevaluated prior to commencing subsequent phases of the project.

The Agency does not agree that the length of time that an area is disturbed and the nature of the receiving stream are appropriate factors when considering whether a basin is 'attainable'. The Agency believes that concerns about 'unexpected' storm events in arid regions, the potential for significant amounts of precipitation during relatively short time periods, and potential project delays make a criterion based on the disturbance time inappropriate. Basing a decision on whether a basin is attainable on factors such as the ability of the stream to accept sediment is inappropriate, as the requirement for sediment basins in today's permit is technology-based and not water quality-based. Further, the Agency has concerns about the ability of dischargers to evaluate the capability of a receiving water to accept sediment. While Federal, State or local legal prohibitions on such a basin would clearly make a basin not attainable, EPA does not believe that the requirement to obtain a Federal, State or local permit (other than an NPDES permit) for basin installation and potential delays associated with obtaining such permits, per se, should not be considered as making a basin not attainable. The Agency believes that it has provided sufficient flexibility in the permit by providing additional alternatives for drainage locations that serve less than 10 disturbed acres at any one time. EPA believes that this approach provides dischargers with economic incentives to schedule activities at the site so as to minimize the area disturbed at any one time. In addition, the Agency believes that such scheduling activities will result in less pollutant discharges than would occur if appropriate scheduling is not conducted.

One commenter raised concerns about possible water quality impacts associated with the timing of releases from temporary sediment basins. The commenter suggested that EPA should coordinate the requirement for basins with other activities within a basin. In response, EPA notes that the construction process in general will have significant changes to the hydrology of the runoff from a site. Generally, construction sites will discharge a considerably higher volume

[28] See also "Performance of Current Sediment Control Measures at Maryland Construction Sites" Schuller and Lugbill, 1990.

of runoff after preexisting vegetation is disturbed. Sediment basins can change the timing associated with when runoff is discharged, and will often result in a decreased volume of runoff discharged. EPA notes that the potential for impacts on receiving streams of the increased volume of runoff generated by a site depends on a complex array of variables, including the nature and locations of other activities within the watershed, that are generally beyond the scope of this permit. In addition, the Agency notes that concerns about timing the hydraulic release of a temporary sediment basin are generally significantly less than when siting storm water management basins within a watershed because of the temporary nature of sediment basins and differences in typical outlet designs. The Agency recommends that dischargers consider potential impacts to receiving waters associated with increases in the volume of runoff from the construction site when it develops its pollution prevention plan.

Several commenters indicated that the construction of roads should be specifically exempted from the requirement to install sediment basins because the linear nature of road construction would render such a containment system impracticable. In response, the Agency wants to clarify that the requirement for basins applies to drainage locations serving more than 10 acres. As discussed above, space availability is one factor to consider when determining that a sediment basin is not attainable. EPA recognizes that in some cases, limited space will make the installation of a sediment basin not attainable.

Several commenters recommended that temporary sediment basins should be required for all drainage locations larger than five acres. In response, today's permit requires that all permittees identify and implement 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. EPA recognizes that a number of technologies can be used to remove sediment in storm water discharges from construction sites, including sediment basins, sediment traps, and silt fences. The effectiveness of the various technologies depends on a number of factors, including the volume of flow to the control measure. For a given storm event, the volume of storm water from disturbed areas of a construction site depends on the disturbed area drained.

Silt fences generally cannot handle large flows. When exposed to large flows, silt fences can be knocked over, torn, or covered with silt. For this reason, the applicability of silt fences is often limited to under two acres. Sediment traps can generally handle larger flows than silt fences, but generally have less capacity than sediment basins. The capacity of a sediment basin depends on a number of factors, including the size of the sediment trap. A number of State and local governments generally limit the use of sediment traps to drainages of below 10 acres.[29]

In developing today's permits, the Agency recognizes that the selection of appropriate structural measures for sediment control will depend on a number of factors, including the size of the drainage area. The Agency believes that today's permits provide the appropriate amount of flexibility, consistent with the physical limitations of the various types of control techniques.

While the Agency recognizes that basins will be the most appropriate sediment control for some drainage locations that serve an area of less than 10 acres, the Agency believes it is appropriate to retain additional flexibility in these general permits for implementing sediment controls for drainage locations serving less than 10 acres. Today's general permits are anticipated to authorize discharge from a large, diverse set of sites, and therefore this additional flexibility is appropriate. The Agency also notes, that in general, drainage locations serving smaller areas may be faced with more obstacles in siting such basins.

One commenter requested guidance on when temporary sediment basins could be removed. Another commenter indicated that temporary sediment basins should remain in place until full vegetative and/or mechanical stabilization is achieved, whereupon removal is accepted practice. In response, EPA agrees that generally basins should not be removed until the final stabilization of basin's drainage area is completed. However, in some cases, basins may not be attainable during the final phases of the project when space becomes limited. In such cases, the determination of the basins attainability may change with time, with the basin being attainable during the initial stages of the project, but becoming unattainable during the later stages of the project.

One commenter, while indicating that the requirement for sediment basins to a 10-year, 24-hour storm was reasonable, requested clarification whether a facility that only discharged during a 10-year, 24-hour storm was required to obtain a permit. In response, the regulatory definition of storm water discharge associated with industrial activity does not exempt from NPDES requirements discharges that result from a 10-year, 24-hour storm. The Agency believes that the requirements of today's permits are appropriate for construction sites that only discharge during a 10-year, 24-hour storm. The Agency notes that such storm events can sweep out significant amounts of sediment from basins, and that other measures required under today's permits, such as stabilization measures can limit the amount of sediment in basins that can be subsequently discharged. In addition, the stabilization measures and other measures of today's permits are often necessary to keep sediment basins from losing significant capacity which can lead to basin failure. The Agency also notes that basins that are not drawn down (allowed to discharge in a controlled fashion) in between storm events can overflow after a series of storms, which individually are substantially less than the 10-year, 24-hour storm.

Storm Water Management Controls

The August 16, 1991, draft permits required that pollution prevention plans provide a description of storm water management measures (i.e. measures to control pollutants in storm water discharges that will occur after construction operations have been completed). The draft permits indicated that such practices may include a variety of measures, and that the plan must provide a justification based on site conditions for rejecting each measure. In addition, the draft permits provided that velocity dissipation devices were to be placed at the outfall location for all detention or retention structures and along the length of any outfall channel as necessary to provide a non-erosive velocity flow.

A number of commenters requested that EPA clarify who had responsibility to maintain storm water management controls after construction was completed. In response to these

[29] See for example, discussion of sediment traps in "Maryland Standards and Specifications for Soil Erosion and Sediment Control", Maryland Department of the Environment in cooperation with Soil Conservation Service, 1991 (10 acre limit), "Wisconsin Construction Site Best Management Practice Handbook", Wisconsin Department of Natural Resources, 1989 (5 acre limit); and "Erosion and Sediment Control Planning and Design Manual", North Carolina Department of Natural Resources and Community Development, 1988 (5 acre limit).

concerns, the Agency had modified today's permits to clarify that the permits only address the initial installation, establishment and operation of storm water management measures during the time that construction activities are occurring, and do not establish requirements for the ongoing 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. Of course, if the construction operation is for the purpose of building a manufacturing facility or other industrial facility which will have storm water discharges associated with industrial activity (as defined at 40 CFR 122.26(b)(12)) after the construction is completed, then the permit for such a discharge may require the subsequent operator of the industrial activity discharge to maintain storm water management measures.

Several commenters expressed their belief that permits for construction activities should not address storm water management controls, where such controls primarily mitigate the increase in pollutants in storm water discharges that will not be subject to the NPDES program after the construction activity is completed. As discussed above, some of these commenters were concerned about possible liability for storm water discharges that occur after construction has been completed.

The Agency disagrees with these comments. First, as discussed above, the Agency has clarified in today's permits that construction site operators will generally not be liable for maintaining storm water structures after construction is completed. Second, the Agency notes that one of the major reasons for deciding to address certain construction activities under the definition of storm water discharge associated with industrial activity was to ensure that storm water management practices were incorporated at such sites (see November 16, 1991, (55 FR 48034)). The Agency also notes that developing a drainage system for storm water is an essential component of a construction project. It is generally much more cost effective to design storm water management controls that reduce the discharge of pollutants into sites during the construction process than it is to retrofit such controls afterwards.[30]

Section 402(a)(1) of the CWA provides that NPDES permits may impose "conditions as the Administrator determines are necessary to carry out the provisions of the Act". In addition, EPA is authorized under 40 CFR 122.44(k)(3) to impose BMPs which are "reasonably necessary * * * to carry the purposes of the Act".[31] The Agency recognizes that construction projects which do not incorporate appropriate storm water management practices can result in dramatic increases in the peak flow rates and volumes of storm water from a site after the construction activities have been completed. Increased discharge volumes can result in increased pollutant loads. In addition, pollutant loads in storm water discharges from the site may increase beyond predevelopment levels because the activities at the site are more intensive after the construction than before construction. These changes, along with increased peak flow rates, can have significant impacts on receiving surface waters. The Agency believes that addressing storm water management controls during the construction phase recognizes that the installation of storm water management and other drainage devices is an integral part of the construction process and is consistent with the objective of maintaining the chemical, physical, and biological integrity of receiving waters.[32]

Two commenters pointed out that storm water management controls could result in significant long term changes to the hydrology of streams and that facilities which modify flood hydrographs (modify the volume of flow with time) should be carefully designed and coordinated with other such facilities in the basin so that the combined effect does not actually increase flood peaks downstream and adversely affect downstream riparian habitat. In response, the Agency recognizes that the addition of impervious structures during the construction process can cause significant changes to the flow patterns of a site. These changes can result in downstream flooding and increases in peak stream velocities and volumes which can have significant negative impacts on the structures of the stream and its ability to act as an aquatic habitat. The Agency also notes that storm water management devices, which generally attempt to restore the natural drainage patterns of a site as much as possible, can influence the volume and rate of peak storm water discharges. The Agency has modified today's permits in two ways to address these concerns. First, the Agency has clarified that velocity dissipation devices at discharge locations and along the length of any outfall channel must be provided as necessary to provide a non-erosive velocity flow from the structure to a water course to better protect and maintain the natural physical and biological characteristics and functions of receiving streams. In addition, as discussed below, today's permit requirements for storm water management encourage dischargers to provide storm water management measures that will mitigate the adverse effects of increases in the volume of storm water discharges beyond predevelopment levels.

The Agency also recognizes the importance of considering various aspects of a watershed when planning development within a watershed. Although such watershed planning is beyond the scope of this permit, the Agency encourages municipalities to develop a watershed approach when planning development and associated storm water management for such new development.[33]

Performance Standards for Storm Water Management Controls

As part of the August 16, 1991, notice, the Agency requested comments on the appropriateness of establishing performance standards or design standards in general permits for storm water management measures to be installed at construction sites. A number of commenters expressed concern regarding the lack of a standard. They indicated that without standards, the permit requirements were too weak, and would not provide the control intended under the CWA. One of these commenters indicated that storm water management controls for new development were perhaps the single most crucial aspect of the general permit, because such controls had the greatest potential for resulting in cost-effective measures that would limit

[30] For example, see the National Urban Runoff Program (NURP) report, EPA, 1984.

[31] This standard for BMPs was recognized in *NRDC* v. *Costle*, 568 F.2d at 1380.

[32] See section 101(a)(1) of the CWA.

[33] Consistent with this objective, NPDES permit applications for discharges from large and medium municipal separate storm sewer systems require that municipal applicants address planning procedures for a comprehensive master plan to develop storm water controls for new development in proposed storm water management programs. (see 40 CFR 122.26(d)(2)(iv)(A)(2)).

impacts to water quality and water resources.

Commenters suggested a number of different approaches to standards for storm water management measures. Several commenters indicated that both performance and design standards were intimately related and needed to be considered in an integrated fashion for successful storm water measures programs. Representatives from several States with successful storm water management programs recommended that EPA establish a performance standard for storm water measures for new development of 80% removal of suspended solids. Another commenter indicated that standards should be developed that put a cap on the total imperviousness of sites, and require a minimum level of mature vegetation preservation. This commenter cited studies that indicated that where total imperviousness of a watershed was greater than 10 to 15 percent, significant declines in stream health would result.

Some commenters indicated that performance standards would promote flexibility to allow the selection of efficient, effective storm water measures. Other commenters asserted that the general permits should rely on design standards rather than performance standards because design standards are effective, easily understood by the regulated community and successfully used in existing State storm water programs. Some of these commenters recognized the need to ensure that design standards did not conflict with existing State and local requirements.

Other commenters urged EPA not to establish design or performance standards for storm water management measures to operate at completed construction sites. Several of these commenters indicated that flexibility is needed to determine the most appropriate site-specific methods for storm water measures, taking into account a number of conditions at individual sites, and that flexibility to determine the most appropriate site-specific controls would not be available if specific standards were mandated for all facilities. Some of these commenters supported deferring to owners and State and local regulators to establish appropriate requirements for storm water measures. One commenter encouraged EPA not to establish national BMP design and performance standards, but rather encouraged the Agency to require States to establish pollution reduction goals.

In response, the Agency remains concerned that NPDES general permits which address a large number of sites which are subject to different State and local requirements and that establish rigid performance standards or design standards for storm water management may not provide a mechanism with sufficient flexibility to address site specific factors. While the Agency recognizes that such requirements will often be appropriate in individual permits in other permit issuing efforts, or other regulatory efforts, the Agency has concerns about the extensive use of such standards in this Tier I general permit. The Agency will continue to evaluate appropriate standards for storm water management applicable to new developments along with the need to provide flexibility in allowing for site-specific adaptation of standards based on project constraints, local conditions and the location of the discharge within the watershed. Therefore, today's general permits do not establish extensive mandatory performance standards or design standards for storm water management measures.

Rather than establish specific performance or design standards, today's permits require that the pollution prevention plan must include an explanation of the technical basis used to select the practices to control pollution where flows exceed predevelopment levels. The explanation of the technical basis for selecting practices should address how a number of factors were evaluated, including the pollutant removal efficiencies of the measures, the costs of the measure, site specific factors that will affect the application of the measures, the economic achievability of the measure at a particular site, and other relevant factors.

However, the Agency does recognize the importance of installing storm water management measures during the construction process, and the need to provide additional guidance on what is expected for permit compliance. EPA anticipates that storm water management measures at many sites will be able to provide for the removal of at least 80 percent of total suspended solids (TSS) [34]. A number of storm water management measures can be used to achieve this level of control, including properly designed and installed wet ponds, infiltration trenches, infiltration basins, sand filter system, manmade storm water wetlands, and multiple pond systems.

[34] TSS can be used as an indicator parameter to characterize the control of other pollutants, including heavy metals, oxygen demanding pollutants, and nutrients, commonly found in storm water discharges.

In addition, the 80 percent control level for TSS is required in a number of State and local programs for storm water management, including programs in Florida, Delaware and the Lower Colorado River Authority (Texas) [35] As noted in the August 16, 1991, draft permits, the limiting runoff volumes to predevelopment levels is consistent with goals or requirements for storm water management developed by a number of local governments. Limiting increases in runoff volumes above predevelopment levels is generally consistent with flood control measures and provides the additional benefits of mitigating significant long-term changes to the hydrology of streams (such as streambed scour and streambank erosion), increases in flood peaks downstream and adverse impacts to downstream riparian habitat.

No Discharge of Solid Materials

The August 16, 1991, draft permits contained a provision that no solid waste, including building materials, shall be discharged. Today's permits use the term "solid materials" instead of the term "solid waste" to avoid confusion with the use of the term "solid waste" under RCRA. Solid materials include non-storm water related discharges such as waste building materials, demolition debris, water used to wash concrete trucks, and discharges from sanitary facilities.

One commenter indicated that certain building materials can be left behind without any impact on water quality or sediment run-off, and that the permit should allow environmentally benign materials to be buried on site. The Office of the Governor in Alaska indicated that the broad prohibition on disposal of wastes at a construction site was inappropriate for Alaskan conditions, where waste disposal sites may not exist off-site and that sound waste disposal management practices can be achieved onsite in many cases. In response, the Agency remains concerned that inappropriate disposal of building materials, plastics, and other solid materials at construction facilities adversely impacts surface waters. However, to ensure that this provision is not interpreted too broadly, today's

[35] The Agency notes that these programs provide some flexibility in meeting this goal by providing for variances or waivers which can be granted based on a review of site plans. The Agency remains hesitant to require that storm water management measures provide for 80 percent removal in today's general permits because of concerns that the Agency would not be able to provide flexibility to sites where such controls were not economically achievable.

permits have been modified to clarify that no solid materials, including building materials, shall be discharged to waters of the United States, except as authorized by a CWA section 404 permit. This modification is also intended to clarify that today's permits are not intended to supersede section 404 requirements.

Off-Site Tracking

The August 16, 1991, draft permits contained a provision that required that off-site vehicle tracking of sediment be minimized. The fact sheet noted that off-site vehicle tracking of sediment could be minimized by paving or graveling roads at the site. Several commenters requested that EPA clarify what constitutes compliance with minimizing the tracking of sediments. Several commenters indicated that in some situations, washing the undercarriage of trucks and other dust control measures are preferable methods for minimizing off-site vehicle tracking. One commenter suggested that where off-site tracking occurs, there should be provisions for street cleaning.

The Agency believes that off-site vehicle tracking of sediment can be an important pollutant source to waters of the United States. The Agency recognizes that there are a number of techniques that can be used to minimize off-site tracking, including providing gravel or paving at site exit locations, parking areas, and roads that carry significant amounts of traffic (e.g., more than 25 vehicles per day), establishing truck washing racks to wash the undercarriage of trucks and other dust control measures. Often, a combination of these measures is required to effectively minimize off-site tracking. The selection of measures depends on the nature of the site. For example, it may be more cost-effective to gravel an onsite road that receives heavy traffic than to rely solely on truck washing racks to prevent the truck from becoming heavily covered with mud. The Agency believes that it is appropriate to provide some flexibility for facilities to select technologies to minimize off-site tracking. However, the Agency also believes that it is important for dischargers to evaluate whether problems associated with off-site tracking have arisen. As discussed in more detail below, the Agency has modified requirements for site inspection to ensure that visual inspections of site entrances and exits evaluate the effectiveness of measures to minimize off-site tracking. In general, significant amounts of sediment coming from a construction site should not be seen on public roads at site exit locations.

Compliance With State or Local Requirements for Sediment and Erosion Control or Storm Water Management

A number of commenters indicated the importance of ensuring that NPDES requirements are consistent with State and local requirements. Several commenters attested to the effectiveness of several State and local program requirements, although some commenters pointed out that in some areas of the country there are no State or local soil and erosion controls or storm water management requirements. Some commenters urged EPA to use the existing framework of erosion and sediment control measures required by various State and local governments. Some of these commenters indicated that many cities had existing institutional frameworks for inspections and permitting in the form of planning and zoning reviews, building and grading permits, and inspectors.

Several commenters asked EPA to clarify that the provision requiring compliance with State and local erosion and sediment/storm water management plans applied to site plans and permits as opposed to comprehensive plans or master plans which provide a framework for issuing site plans and permits. These commenters indicated that a particular site may be operating under permits or plans which were approved based on exceptions or deviations from a master plan or comprehensive plan. Other commenters indicated similar concerns regarding State or local guidelines which are not legally binding, but again provide a framework for developing site plans or permits. In response, EPA has revised the general permit language to clarify that provisions of master plans, comprehensive plans, or technical guidance documents that are not identified in a specific plan or permit that is issued for the construction site are not incorporated by reference into the NPDES permit. Further, the term 'site' has been introduced into the permit language before the terms plan or permit to help distinguish between site plans/permits and master plan requirements.

One commenter objected to the requirement to incorporate those requirements of State and local plans or permits that are independent of water pollution control concerns. In response, the Agency has revised the permit language to more clearly indicate that only those requirements in State or local plans or permits that are applicable to protecting surface water resources need to be incorporated into the storm water pollution prevention plans required under the NPDES permits.

One commenter indicated that EPA should ensure that a minimum level of controls be instituted for construction activities even where the State or local government does not have adequate controls. This commenter indicated that a key reason for a national NPDES program was to assure national consistency and to prevent economic disincentives to lock in States with progressive storm water programs. EPA agrees with this commenter that the NPDES permit should establish a minimum level of controls for construction activities. As discussed in greater detail above, storm water pollution prevention plans addressing the implementation of sediment and erosion controls and storm water management measures are required for all sites authorized to discharge by the permits.

One commenter supported the inclusion of State and locally approved storm water plans in the NOI as a way to ensure that the NPDES requirements are compatible with State and local requirements. This would in turn reduce duplication of efforts. In response, while EPA recognizes that a goal of today's permits is to avoid conflicts between NPDES permit requirements and State and local permit requirements, it is not requiring the submission of plans with NOIs. Rather, today's permits provide that NOIs must contain a certification that a storm water pollution prevention plan has been prepared for the facility, 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. The Agency believes that the flexible nature of the permits' requirements for storm water pollution prevention plans coupled with the requirement that plans must include 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 will avoid conflicts and reduce duplication of efforts.

Several commenters were concerned that the requirement for storm water discharges associated with industrial activity from construction activity to be authorized by an NPDES permit was duplicative. Some of these commenters requested a waiver from NPDES permit requirements where other State or local controls are in place. In response, NPDES permits are required under the CWA for storm water discharges

associated with industrial activity. EPA has defined the term at 40 CFR 122.26(b)(14) to include storm water discharges from those construction sites which disturb five or more acres. Compliance with State or local requirements does not waive the requirement to obtain an NPDES permit. The Agency believes that requiring that plans provide for compliance with State or local requirements for sediment and erosion control and/or storm water management will support the goal of minimizing conflicts between NPDES permit requirements and State and local requirements. The Agency believes that this approach will minimize the administrative burdens associated with these general permits, consistent with the requirements of the CWA. In addition, the Agency notes that the potential for these permits to delay projects is greatly reduced by this approach.

One commenter indicated that EPA should not incorporate State and local requirements into NPDES permits because EPA has not shown that States and local enforcement of sediment and erosion control requirements has been ineffective, that federal enforcement of State and local requirements may result in interpretations that are contrary to those of State and local officials, and that incorporating these requirements by reference would discourage State and local governments from regulation.

In response, the Agency does remain concerned that State and local enforcement and implementation of sediment and erosion controls are not always effectively enforced.[36] In addition, NPDES permits for storm water discharges associated with industrial activity from construction activities must establish conditions in accordance with the CWA, and the Agency does not have to make a showing that State and local programs are ineffective to establish today's permit requirements.

The Agency does not intend to discourage State and local governments from implementing sediment and erosion and/or storm water management requirements. The Agency will be working with municipal operators of large and medium municipal separate storm sewer systems to ensure that such municipalities implement effective local soil and erosion and storm water management programs.[37] In addition, the Agency is continuing to work with State and local governments under section 319 of the CWA and section 6217(g) of the CZARA to develop State and local storm water management and soil and erosion programs.

The Agency believes that in a general permit context, the best way to ensure NPDES permit requirements are compatible with State and local requirements is to build on the requirements of State and local plans or permits. In addition, the process of issuing State and local plans typically represents identification of controls and measures that are achievable at a particular site. The Agency encourages dischargers with concerns that federal enforcement of State and local requirements may result in interpretations contrary to those of State and local officials, to provide a clear description of such requirements in their storm water pollution prevention plans. The Agency intends to work with State and local officials to resolve these issues when they arise. In addition, the general permits specifically provide that dischargers seeking NPDES permit requirements that do not require the provisions of an approved State or local plan or permit be in a storm water pollution prevention plan required by the NPDES permit must submit an individual permit application along with a description of why requirements in approved State or local plans or permits should not be applicable as a condition of an NPDES permit.

One commenter, while supporting the concept that NPDES permit requirements should be compatible with requirements in State and local plans or permits, opposed the extension of federal enforcement to State and local requirements which exceed the NPDES permit requirements. EPA disagrees with the commenter. As stated above, the Agency believes that requiring permittees to provide a certification in their storm water pollution prevention plan that their storm water pollution prevention plan reflects requirements in sediment and erosion site plans or site permits or storm water management site plans or site permits approved by State or local officials is the best way to ensure that the NPDES permit requirements are compatible with State and local requirements. In addition, the process of issuing State and local plans typically represents identification of controls and measures that are achievable and otherwise appropriate at a particular site. Today's permit provides dischargers with a mechanism for obtaining alternative NPDES permit conditions where the discharger believes that the State or local measures should not be applicable as a condition of an NPDES permit. This approach allows EPA to provide considerable flexibility in the requirements of today's permit while ensuring that adequate and appropriate measures are required.

One commenter indicated that State administrative review procedures may not have been used in the development of State or local plans. In response, the Agency believes that adequate administrative review procedures will be provided in the development of most State or local requirements. Where this is not the case, dischargers may submit an individual application along with an explanation of why requirements in approved State or local plans or permits should not be applicable as a condition of an NPDES permit. However, in response to concerns raised by the commenter, today's permit requires that permittees provide a certification in their storm water pollution prevention plan that their storm water pollution prevention plan reflects requirements in sediment and erosion site plans or site permits or storm water management site plans or site permits approved by State or local officials. In addition, today's permit requires that storm water pollution prevention plans must be amended to reflect any change in a 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 must provide a recertification in the storm water pollution plan that the storm water pollution prevention plan has been modified to address such changes. This will ensure that the permittee is only responsible under today's permits for requirements for which they have received adequate notice.

One commenter indicated that allowing facilities the opportunity to seek NPDES permit requirements that did not require the provisions of an approved State or local plan or permit was not consistent with the objective of environmental protection. In response, the Agency wants to clarify that this process does not preempt State or local requirements. A discharger may still face State or local enforcement actions for a violation of a State or local

[36] See "Performance of Current Sediment Control Measures at Maryland Construction Sites", January 1990, Metropolitan Washington Council of Governments. Also, some commenters noted that some State and local programs are subject to significant rates of non-compliance and technology failure

[37] For example, the permit application requirements for discharges from large and medium municipal separate storm sewer systems require that municipal applicants submit proposed management plans to reduce pollutants in storm water discharges from construction sites (see 40 CFR 122.26(d)(2)(iv)(D)).

requirement even where EPA issues an individual NPDES permit that does not specifically require compliance with the State or local requirement. Rather, the process is intended to ensure compliance with the pollution control measures of the CWA.

Discharge Monitoring

On August 16, 1991, EPA requested comment on modifying the regulatory provision at 40 CFR 122.44(i)(2), addressing the establishment of discharge monitoring reporting requirements in NPDES permits for storm water discharges associated with industrial activity. The regulation existing at the time of the proposal provided that requirements in NPDES permits, including NPDES permits for storm water discharges, to report monitoring results are to be established with a frequency dependent on the nature and effect of the discharge, but in no case less than once a year.

In the August 16, 1991, notice, EPA specifically identified six options for modifying requirements to report monitoring results for storm water discharges associated with industrial activity. In addition, the draft general permits in the same August 16, 1991, notice requested comment on annual discharge sampling of storm water discharges from most classes of storm water discharges associated with industrial activity, including those from construction activities, because this approach was consistent with the option EPA favored in the August 16, 1991, notice for the regulatory change. However, in the August 16, 1991, notice, the Agency indicated that the monitoring requirements in the final permits could be less stringent if the regulatory change provided additional flexibility with respect to minimum monitoring requirements.

On April 2, 1992, (57 FR 11394), EPA published final regulatory modifications to the minimum discharge monitoring and reporting requirements for storm water discharges. Under the modified regulatory framework, monitoring requirements for NPDES permits for storm water discharges associated with industrial activity are to be established on a case-by-case basis, with minimum requirements relating to site inspections rather than discharge monitoring.

A number of commenters on the August 16, 1991, draft general permits indicated that they did not believe that discharge sampling was appropriate for storm water discharges from construction sites due to their temporary nature and variability associated with ground cover, topography, soil types or other factors. Other commenters noted that monitoring efforts can be difficult and expensive to implement due to the intermittent nature of discharges. Several commenters questioned the usefulness of data generated by untargeted sampling requirements and indicated that resources would be better utilized planning, implementing and maintaining effective onsite runoff controls. These commenters indicated their belief that monitoring may be unnecessary where a permittee has developed, implemented, and maintained an effective storm water management control plan. Another commenter indicated that instream sampling used in one State (which is an authorized NPDES State) to evaluate the contribution of a construction site to increased turbidity levels.

Several commenters indicated that sampling of the outfalls associated with long linear projects would present logistic problems. Several commenters from State Departments of Transportation suggested that sampling should only be required for a percentage of their sites, which would be fairly similar in nature throughout the State. Another commenter representing a State Department of Transportation suggested that sampling should not be required unless the project is greater than 5 acres and goes beyond 12 weeks.

Several commenters suggested that EPA require that a Registered Professional Engineer or certified erosion control specialist certify that a storm water pollution plan is being properly implemented at a construction site in lieu of sampling, or that EPA focus on requirements for site inspections or other means of evaluating the effectiveness of controls and permit compliance.

Based on a consideration of the comments received on the draft general permits, and consistent with the regulatory modifications at 40 CFR 122.44 published on April 2, 1992, today's permits do not require construction operators to conduct storm water monitoring. While, the Agency recognizes that storm water monitoring from construction sites can be appropriate in some situations, the Agency is concerned about requiring storm water monitoring for all facilities covered by today's permit for a number of reasons. The Agency has concerns that sampling data may not reflect the transient nature of construction activities. As discussed below, the Agency believes that inspection requirements can be as or more effective than monitoring discharges for evaluating compliance with permit conditions. In addition, the Agency has concerns regarding the possible burdens placed on industries and EPA regarding the review of this information.

Site Inspections

The August 16, 1991, draft permits required that all erosion controls on the site be inspected by the discharger at least once every seven calendar days. Subsequent to the August 16, 1991, notice, the Agency published regulatory modifications on April 2, 1992, (57 FR 11394), to provide that NPDES permits for storm water discharges must, at a minimum, require the discharger to conduct an annual inspection of the facility site to identify areas contributing to a storm water discharge associated with industrial activity and to evaluate whether pollution prevention measures are adequate and properly implemented. The April 2, 1992 rule also requires that permits for storm water discharges require operators to maintain records summarizing the results of the inspection and a certification that the facility is in compliance with the permit.

As discussed above, the issue of site inspections is related to the issue of discharge monitoring. A number of commenters on the August 16, 1991, notice generally supported the use of site inspections as a method for evaluating the performance and effectiveness of strategies to reduce pollutants in storm water discharges. These commenters indicated that site inspections can be a more appropriate tool than discharge monitoring for ensuring effective implementation of best management practices. One commenter believed an active inspection program could be instrumental in preventing erosion of soil or stock piles.

EPA generally agrees with these commenters, and consistent with the April 2, 1992, regulatory modifications has decided to focus more on site inspection requirements in these general permits rather than on discharge monitoring requirements. Today's permits require, with several exceptions, that qualified personnel (provided by the discharger) inspect disturbed areas, 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. The Agency believes that such inspections are a critical component of a pollution prevention strategy and are necessary to ensure that measures are being properly implemented. The Agency believes that inspections play a particularly important role in pollution prevention strategies for construction activities. Frequent and thorough

inspections are necessary because of the transient nature of construction activities and the nature of measures to reduce pollutants in storm water discharged from construction sites. Because construction sites can be complex, transient operations, frequent inspections are necessary to ensure that new pollutant sources are identified, measures are implemented for new activities at the site, and existing measures are kept operational. Measures to reduce pollutants in storm water discharges, such as silt fences, mulching, sediment ponds, and vegetation, must be properly maintained in order to be effective. Often, these types of controls may become altered by construction activities or by storm events such that their ability to remove pollutants is severely limited. For example silt fences can be run over by equipment, blown out of position by wind, broken during significant storm events, or backfilled with sediment. Sediment basins can lose capacity when they are filled with sediment or when they are not appropriately drawn down in between storm events. In addition, basins can be short-circuited by incorrect flow patterns. Areas that are restabilized with new vegetation can develop severe gullies before vegetation can be established or vegetation may die due to a number of conditions. Given these concerns, the Agency believes that frequent inspections (e.g., once a week and after significant storms that may limit the effectiveness of measures) for construction activities are appropriate and necessary for successful program implementation. The Agency agrees with comments that the major sources of pollutants, as well as major control measures should be observed as part of routine inspections. Today's general permits require inspections of: (1) Disturbed areas, (2) areas used for storage of materials that are exposed to precipitation, (3) erosion and sediment control measures identified in the plan, (4) accessible discharge locations or points, and (5) locations where vehicles enter or exit the site.

One commenter noted the importance of requiring adequate documentation of visual inspections by the dischargers. In response, today's permits clarify that for inspections required under the permit, dischargers must develop a report summarizing the scope of the inspection, name and qualifications of personnel making the inspection, the date of the inspection, major observations made, and actions taken to revise implementation of the plan where appropriate. The Agency believes that this requirement is particularly important given the lack of requirements to collect discharge monitoring data under the permit and the increased importance placed on using site inspections to ensure the effective implementation of pollution prevention plans. The Agency also notes that this approach is consistent with the April 2, 1992 regulatory revisions which require that, at a minimum, NPDES permits for storm water discharges require the discharger to maintain a record summarizing the results of the inspection and a certification that the facility is in compliance with the plan and the permit, and to identify any incidents of non-compliance. Such report and certification must be signed in accordance with the signatory requirements at 40 CFR 122.22.

Several commenters requested that EPA clarify that sediment and erosion controls must be maintained as well as inspected. One commenter urged EPA to clarify that the inspection procedure should include requirements to maintain pollution prevention controls or reevaluate requirements in pollution prevention plans. In response to these comments, today's permits have been clarified to require that plans include a description of procedures to maintain vegetation in good and effective operating conditions, as well as erosion and sediment control measures and other protective measures identified in the site plan. Today's permits also require that pollution prevention measures identified in a facility's plan be revised as appropriate within 7 calendar days based on the results of the inspection.

One commenter requested clarification as to whether the permittee or EPA would be responsible for the inspection. In response, EPA has clarified that the discharger, and not a local, State or EPA regulatory official, will be responsible for conducting the site inspection.

A number of commenters indicated that EPA should specify the qualification of site inspectors. Various types of qualifications were suggested by the commenters, including registered landscape architects, professional engineers, erosion and sediment control specialists certified by the International Soil and Water Conservation Society, and representatives of Soil and Water Conservation Districts. In response, although today's permits do not specify the qualifications of inspectors, the Agency agrees that certain specialists may be appropriate for conducting inspections in some situations. While such qualifications may not be necessary for weekly inspections, use of personnel with specific expertise or training may be helpful during the initial development of plans or to evaluate whether the installation of major structural devices, such as sediment basins, has been conducted properly. However, the Agency is concerned that specifying the qualifications of the inspector could limit flexibility and create problems where an inspector with specified qualifications is not readily available. The Agency will continue to evaluate such approaches, although today's permits maintain flexibility with respect to the qualifications of the person(s) conducting site inspections.

Several commenters raised concerns that inspection requirements were excessive in certain circumstances. One commenter raised concerns about construction projects located in remote areas that are not actively staffed for long periods of time, particularly during the winter months when such operations are typically idled. This commenter raised additional concerns about having to conduct inspections after 24 hour storm events exceeding 0.5 inches because such a condition would require operators to locate and maintain meteorological equipment continuously. Another commenter indicated that requiring weekly inspections in arid areas may waste resources and time, because several months may pass between measurable storm events. This commenter suggested that for arid areas, inspections should be require on a monthly basis or after major storms. Another commenter indicated that weekly inspections are warranted while construction activities are taking place, but would not be warranted throughout the life of the facility.

In response to these comments, EPA is modifying the permits to provide that where sites have been temporarily stabilized, or during seasonal dry periods in arid (average annual rainfall of 0 to 10 inches) and semi-arid (average annual rainfall of 10 to 20 inches) regions, inspections are to be conducted at least once every month. The Agency believes that temporary stabilization measures are generally appropriate prior to suspending activities during winter conditions. Where temporary stabilization measures are not undertaken, weekly inspections should be conducted to ensure that winter rains, snowmelt, or spring rains do not create significant erosion problems, and that other sediment and erosion controls are working properly. The Agency also believes that less frequent inspections can be appropriate during seasonal arid periods in arid and semi-arid regions

given the lower potential for storm events.

One commenter raised concerns that if EPA tied inspections to a specific set of rainfall events, costly meteorological equipment would be needed to measure rainfall events accurately. EPA wants to clarify that today's permits do not require that construction operators maintain meteorological equipment to monitor the magnitude of local rainfall events. Rather, dischargers can rely on other information, such as weather reports and readings from the nearest Weather Bureau gauge station.

Procedures for Plan Modifications

One commenter, while recognizing the need to make sediment and erosion controls and storm water management measures flexible, indicated that a mechanism to amend plans was critical. This commenter indicated that although a plan may initially look good on paper, the implementation at a particular site may not be as effective as expected due to site conditions. The commenter indicated further that construction activities affecting sediment and erosion control require modification after the initial plan has been developed. In response, the Agency wants to clarify that plans may be modified, consistent with the requirements of the permits, to address changing site conditions. The site inspection requirements of today's permits provide that the description of potential pollutant sources identified in the plan and pollution prevention measures identified in the plan are to be revised as appropriate as soon as practicable after inspection. The discharger should provide rationale for these changes (e.g., measures were not as effective as anticipated or that changes were necessary to address amendments to the construction activities plan) should be provided in the storm water pollution prevention plan.

Costs

One commenter indicated that the cost estimates for complying with the requirements of the general permit were five years old and that costs had increased considerably since that time. The commenter indicated that EPA should update its cost estimates to reflect present conditions.

In response, EPA notes that estimates of the costs of compliance with the various conditions of the draft general permits for construction activities were published in two tables in the August 16, 1991, **Federal Register** notice. Table 7 provided estimates of sediment and erosion control costs that were primarily based on the 1990 edition of "Means Site Work Cost Data", 9th edition, R.S. Means Company. These estimates were supplemented by Agency bond price lists from the Washington DC area for 1990. The Washington DC unit costs were used to make the estimates more conservative based on the assumption that material costs for that area were generally higher than other areas of the country.[38] Table 8 provided estimates of the costs of storm water management measures for construction sites. The estimates in Table 8 were based on methodology developed from 1986 data. The Agency notes that these cost estimates can be updated by a variety of methods, including use of the construction cost and building cost indexes of the Engineering News Record (ENR) Index. Using this method, costs can be updated by multiplying a cost estimate from an earlier date by the ratio of the building and/or construction index for the current data over the index for the date of the cost estimate. The value of the construction index at the beginning of 1990 was 4680, while the value of the building index was 2664. The average value of the construction index during 1986 was 4732, while the average value of the building index was 2483. The value of the construction index for March 1992 was 4927, while the value of the building index was 2799. These multipliers have been calculated into the cost estimates in today's permits.

The Agency notes, however, that cost estimates will vary from site to site depending on such factors as the nature of the site, the nature of the project, the degree to which controls were identified early in the process and planning was undertaken to minimize costs, and the existing State or local requirements.

Several commenters indicated that the requirements of the permits would result in adding substantial costs to the consumer price of a finished lot. In response, the Agency has evaluated the costs of the various controls required under today's permits (see August 16, 1991, notice, (56 FR 40989)) and recognizes that in the construction industry, a significant portion of such costs will be passed on to the current or ultimate site owner.

Economic Incentives Associated With Good Site Planning

A number of commenters representing a diverse cross section of industry, trade associations, environmental groups, States, and local governments stressed the importance of good site planning and preservation of mature vegetation as a primary technique for both controlling sediment in storm water discharges during construction activities and for developing a strategy for storm water management that controls pollutants in storm water discharges after construction activities have been completed.

The Agency agrees that good site planning should be a critical component of sediment and erosion controls and storm water management and can provide significant economic incentives to construction site owners and operators. Site planning allows dischargers to identify areas where native vegetation can be preserved, thereby reducing costs associated with temporary and permanent stabilization, structural controls, and storm water management devices. Site planning promotes coordinating activities that limit the amount of area disturbed at one time. Again, this can reduce costs associated with temporary and permanent stabilization, structural controls, and storm water management devices.

The sale value of a construction project can be significantly increased by preserving mature vegetation, preserving streams and natural drainage ways, and providing storm water management devices, such as wet ponds that serve as aesthetic amenities as well as water pollution control devices. Providing "soft" drainage technologies, such as using grass swales and measures that reduce the amount of runoff generated by a site, can dramatically decrease the capital costs of a more traditional drainage system of large underground pipes and conduits.

Appendix B—NPDES General Permits for Storm Water Discharges From Construction Activities That Are Classified as "Associated With Industrial Activity"

Authorization to Discharger Under the National Pollutant Discharge Elimination System

[Permit No. *NHR*10000IF]

In compliance with the provisions of the Clean Water Act, as amended, (33 U.S.C. 1251 et seq.; the Act), except as provided in Part I.B.3 of this permit, operators of storm water discharges from construction activities that are classified as "associated with industrial activity", for Indian Tribes located in the State of New Hampshire, are authorized to discharge in accordance with the conditions and requirements set forth herein.

[38] See "Draft—Sediment and Erosion Control, An Inventory of Current Practices", Kamber Engineering, April 20, 1990.

OKLAHOMA DEPARTMENT OF TRANSPORTATION

DATE: September 14, 1992

TO: Division Engineers, Construction Engineers, Engineering/Branch Managers

FROM: Byron Poynter, Construction Engineer

SUBJECT: CONSTRUCTION CONTROL DIRECTIVE NO. 920904

PROCEDURE FOR COST REDUCTION INCENTIVE PROPOSALS

The Department has been asked to establish a two-phase procedure for processing Cost Reduction Incentive/Value Engineering Proposals, which will allow a review of the concept, prior to the preparation of a detailed proposal. Some types of proposals require a considerable investment by the contractor for the preparation, without knowing if the proposal will be accepted. The intent of the new procedure is to promptly advise the contractor as to whether the concept is acceptable. If accepted, the contractor would proceed to prepare a detailed proposal for final submittal.

The procedure which outlines this process is enclosed. The procedure differs from the special provision presently in active contracts. However, you may implement the new procedure immediately. The special provision will be revised for future contracts.

When you submit a Change Order for a Value Engineering Proposal, it must include a new item for the contractor's portion of the savings. Following is a suggestion for the wording of the item:

Spec. Contractor's Portion of VE Proposal L.S. $XXXX.XX
(Change Order No. XX)

(Equal to one-half of net savings)

Byron Poynter P.E.
Construction Engineer

Copy To: Distribution list.

PROCEDURE FOR CONSTRUCTION CONTRACT COST REDUCTION INCENTIVE AND/OR VALUE ENGINEERING CHANGE PROPOSALS (VECP'S)

VECP's should be handled in the same manner as change orders; however, the contractor may request a "conceptual" approval prior to submission of the change order proper.

Conceptual Proposal

The contractor may request a Department "conceptual" review of the proposal in order to avoid unnecessary investment of his resources in preparing change proposals that would not be acceptable to the Department. This review will not address the total economics of the proposal, nor the specific engineering design(s).

Approval of the "Conceptual Proposal" will not obligate the Department to accept the entire or any part of the final VECP.

To submit a VECP for a "conceptual review", the contractor shall submit a letter explaining the concept of his proposal, clearly delineating all aspects of the proposed change. The original shall be sent directly to the Resident Engineer, with copies being sent to the field division and the Construction Engineer (Central Office).

The letter shall include estimates of the impact the proposed change would have on the project as a whole, included, but not limited to, detours, traffic control items and time of construction.

The field division will be responsible for advising outside local government entities and/or owners of any such proposal, and will advise the Construction Engineer as to the owners' approval/disapproval of the proposed change.

The Construction Engineer will be responsible for contacting our Railroad Branch in order to secure the railroad's approval/disapproval of the proposed change.

If appropriate, the Construction Engineer will forward copies of the "conceptual review" to the VECP Committee.

When deemed necessary, the Construction Engineer will conduct a meeting with the VECP Committee to discuss the concept of the proposed change. The decision of the Department as to the acceptance/rejection of a change proposal will be final and will not be subject to any further action.

If at all possible, ODOT will attempt to respond to the contractor's conceptual proposal within three working days after receipt in the Central Office. When outside entities are involved, the committee cannot meet until their approval is secured.

If the conceptual proposal is disapproved, the contractor shall not pursue the matter any further. However, if the conceptual proposal is approved, then he may proceed with his final proposal. If time is not critical, the contractor shall submit his proposed change through normal channels. When time is of the essence and the contractor must have a quick response to avoid project delay, he may submit additional copies to the Field Division Engineer and the Construction Engineer (Central Office) at the same time.

Final Proposal

The final proposals shall be engineered and sealed by a professional engineer if mandated by the nature of the change.

When determining the net savings, the contractor shall consider **all costs** associated with the change he is proposing. This may include road user costs, if appropriate.

The Construction Engineer will forward copies of the final proposal to the VECP Committee, the Chief Engineer and all other appropriate offices.

After studying the proposal, everyone will forward their comments to the Construction Engineer. The comments will be documented and made available to the VECP Committee for their review.

The Construction Engineer will call and chair a meeting with the field division and the VECP Committee to recommend approval/disapproval of the final change proposal. If the proposed change involves complex design, it may be advantageous to have the contractor present in the meeting to answer possible questions. If the VECP Committee members think that the contractor's presence should be required, they will notify the Construction Engineer, who will in turn notify the Resident Engineer to extend the invitation.

If both ODOT and FHWA approve the contractor's final change proposal, the Construction Engineer will send letters of acceptance to the field division and the contractor. The contractor will receive 50 percent of the final net savings amount generated from his change proposal.

If the final change proposal is rejected, the Construction Engineer will notify the Resident, who in turn will notify the contractor.

The Department will respond to the contractor's final change proposal as expeditiously as possible.

The VECP Committee will consist of the following:

The Construction Engineer
Bridge Division
Urban Design Division
Rural Design Division
Traffic Division
Materials Division
Maintenance Division
Local Government Division
Value Engineering Coordinator
FHWA
Field Division
When appropriate, the outside governmental entities/owners

To complete the process, the VE Coordinator will periodically report the VECP activities to ODOT top management.

The contractors must understand that:

The Department is not obligated to accept their VECP's.

They must absorb all costs and risks incurred in preparing VECP's.

Until the VECP is accepted, they are obligated to the terms of the original contract.

ODOT reserves the right to adopt a VECP for general use.

9/3/92

OKLAHOMA DEPARTMENT OF TRANSPORTATION

DATE: August 4, 1992

TO: Division Engineers, Construction Engineers, Engineering/Branch Managers

FROM: Byron Poynter, Construction Engineer

SUBJECT: CONSTRUCTION CONTROL DIRECTIVE NO. 920731

PRODUCTION RATE POSTING

A system to allocate contract time, based on actual production rates is being developed. The plan requires a data base which depicts the amount of time actually used to perform contract pay items. The progressive estimate program "PRGADD" has been modified to accept the number of production hours used by the contractor to perform each pay item. Approximately 200 pay items which are most often used, have been selected for inclusion in the data base.

The Construction Residencies are requested to assist with the development of the data base. Enclosed is a list of pay items to be reported. You will need to correlate the list to specific projects, as the facility for reporting has been necessarily applied to all pay items. Even on large projects, due to the subdivision of the basic item, only a few pay items will need to be reported. As estimates are being prepared, for each amount added, report the approximate total number of hours required to perform the work item (round to the nearest whole hour).

Include the time required to perform the different work items that relate to the pay item. For example if you are reporting P.C. Concrete Paving, include the time used in setting forms. You will have to estimate the hours for sawing and sealing since they are reported before that portion of the work is actually done. When reporting Drilled Shafts, include the time used for drilling, setting cans and setting the steel in addition to the concrete placement.

An instruction sheet has been included to be placed in your copy of the Progressive Estimate Users Reference Manual.

Please begin reporting as soon as practical. If you have questions, contact this office.

Byron Poynter
Construction Engineer

Copy To: Distribution list.

OKLAHOMA DEPARTMENT of TRANSPORTATION
List of Pay Items
for
Production Rates

ITEM		UNIT	DESCRIPTION
202(A)	0103	C.Y.	COMMON EXCAVATION
202(B)	0182	C.Y.	ROCK EXCAVATION
202(C)	0183	C.Y.	UNCLASSIFIED EXCAVATION
202(D)	0105	C.Y.	MUCK EXCAVATION
202(E)	0184	C.Y.	UNCLASSIFIED BORROW
202(E)	0185	TON	UNCLASSIFIED BORROW
202(F)	0186	C.Y.	SELECT BORROW
202(F)	0187	TON	SELECT BORROW
202(G)	0110	C.Y.	(SU)EMBANKMENTS
230(A)	2806	S.Y.	SOLID SLAB SODDING
230(B)	2807	S.Y.	MULCH SODDING
303	0192	C.Y.	AGGREGATE BASE
305	0125	C.Y.	CALICHE BASE
306	4409	C.Y.	SUBBASE (TYPE I)
306	4410	C.Y.	SUBBASE (TYPE II)
306	4411	C.Y.	SUBBASE (TYPE III)
306	4412	C.Y.	SUBBASE (TYPE IV)
[redacted](B)	4234	S.Y.	6" LIME TREATED SUBGRADE
307(B)	4235	S.Y.	8" LIME TREATED SUBGRADE
307(B)	4237	S.Y.	12" LIME TREATED SUBGRADE
307(B)	4238	S.Y.	24" LIME TREATED SUBGRADE
310(A)	0147	S.Y.	SUBGRADE METHOD A
310(B)	0149	S.Y.	SUBGRADE METHOD B
317(C)	4254	S.Y.	SUBGRADE MODIFICATION
402	4398	C.Y.	(PL) NO. 3–C COVER AGGREGATE
402(A)	0204	TON	BITUMINOUS BINDER
402(A)	5704	TON	(PL) BITUMINOUS BINDER(POLYMER MODIFIED)
402(B)	4399	TON	(PL) NO. 3–C COVER AGGREGATE
402(B–1)	0206	TON	NO. 1 COVER AGGREGATE
402(B–2)	0208	TON	NO. 2 COVER AGGREGATE
402(B–3)	0210	TON	NO. 3 COVER AGGREGATE
402(B2P)	0212	TON	PRECOATED NO. 2 COVER AGGREGATE
402(B3P)	0214	TON	PRECOATED NO. 3 COVER AGGREGATE
406	4257	TON	OPEN GRADED FRICTION SURFACE COURSE
406	5893	TON	(SP) OPEN GRADE FRICTION SURF. COURSE(MOD AC)
411(A)	4263	TON	ASPHALT CONCRETE TYPE A
411(B)	4264	TON	ASPHALT CONCRETE TYPE B
411(B)	5859	TON	(SP) ASPHALT CONCRETE TYPE B (MOD AC)
[redacted](C)	4265	TON	ASPHALT CONCRETE TYPE C
[redacted](D)	4826	TON	ASPHALT CONCRETE TYPE D
411(E)	5187	TON	ASPHALT CONCRETE TYPE E
411(F)	5188	TON	ASPHALT CONCRETE TYPE F
411(G)	5189	TON	ASPHALT CONCRETE TYPE G

414(A)	0259	S.Y.	7" P.C. CONCRETE PAVEMENT
414(A)	0260	S.Y.	8" P.C. CONCRETE PAVEMENT
414(A)	0261	S.Y.	9" P.C. CONCRETE PAVEMENT
[redacted]	2683	S.Y.	8" P.C. CONCRETE (PAVED SHOULDER)
[redacted]	2686	S.Y.	9" P.C. CONCRETE (PATCHING)
414(A)	4723	S.Y.	10" P.C. CONCRETE PAVEMENT
414(A)	4809	S.Y.	6" P.C. CONCRETE PAVEMENT
414(A)	5177	S.Y.	12" P.C. CONCRETE PAVEMENT
414(B)	0289	S.Y.	7" H.E.S. CONCRETE PAVEMENT
414(B)	0290	S.Y.	8" H.E.S. CONCRETE PAVEMENT
414(B)	0301	S.Y.	9" H.E.S. CONCRETE PAVEMENT
414(B)	4150	S.Y.	9" H.E.S. CONCRETE (PATCHING)
414(B)	4818	S.Y.	6" H.E.S. CONCRETE PAVEMENT
414(B)	4950	S.Y.	8" H.E.S. CONCRETE (PATCHING)
414(B)	4996	S.Y.	10" H.E.S. CONCRETE PAVEMENT
414(B)	5069	S.Y.	6" H.E.S. CONCRETE (PATCHING)
414(B)	5180	S.Y.	12" H.E.S. CONCRETE PAVEMENT
414(C)	0309	S.Y.	APPROACH SLABS
414(D)	2685	S.Y.	8" P.C. CONCRETE (CONT. REINFORCED)
414(D)	4367	S.Y.	9" P.C. CONCRETE (CONT. REINFORCED)
414(D)	4368	S.Y.	10" P.C. CONCRETE (CONT. REINFORCED)
414(D)	4813	S.Y.	9" P.C. CONCRETE PAVEMENT (CONT. REINFORCED)
414(D)	4820	S.Y.	12" P.C. CONCRETE PAVEMENT (CONT. REINFORCED)
414(E)	5255	S.Y.	10" P.C. CONC. PAVEMENT (CONT. REINF.) H.E.S.
414(E)	5261	S.Y.	12" P.C. CONC. PAVEMENT (CONT. REINF.) H.E.S.
[redacted]	5753	S.Y.	8" P.C. DOWEL JOINTED CONCRETE PAVEMENT
414(AA)	5754	S.Y.	9" P.C. DOWEL JOINTED CONCRETE PAVEMENT
414(AA)	5755	S.Y.	10" P.C. DOWEL JOINTED CONCRETE PAVEMENT
414(AA)	5756	S.Y.	12" P.C. DOWEL JOINTED CONCRETE PAVEMENT
414(BB)	5757	S.Y.	8" H.E.S. DOWEL JOINTED CONCRETE PAVEMENT
414(BB)	5758	S.Y.	9" H.E.S. DOWEL JOINTED CONCRETE PAVEMENT
414(BB)	5759	S.Y.	10" H.E.S. DOWEL JOINTED CONCRETE PAVEMENT
414(BB)	5760	S.Y.	12" H.E.S. DOWEL JOINTED CONCRETE PAVEMENT
417	4267	S.Y.	COLD MILLING BITUMINOUS PAVEMENT
417	5267	S.Y.	COLD MILLING PAVEMENT
419	4152	L.F.	CONCRETE JOINT REHABILITATION
425	5195	S.Y.	DIAMOND GRINDING CONCRETE PAVEMENT
433	5109	S.Y.	(SU) BREAKING AND SEATING PAVEMENT
501(A)	1306	C.Y.	STRUCTURAL EXCAVATION UNCLASSIFIED
501(A)	0313	C.Y.	STRUCTURAL EXCAVATION UNCLASSIFIED
501(B)	1307	C.Y.	SUBSTRUCTURE EXCAVATION COMMON
501(C)	1308	C.Y.	SUBSTRUCTURE EXCAVATION ROCK
503(A)	1310	L.F.	PRESTRESSED CONCRETE BEAMS (TYPE I)
503(A)	1311	L.F.	PRESTRESSED CONCRETE BEAMS (TYPE II)
503(A)	1312	L.F.	PRESTRESSED CONCRETE BEAMS (TYPE III)
503(A)	1313	L.F.	PRESTRESSED CONCRETE BEAMS (TYPE IV)
[redacted]	6123	L.F.	PRESTRESSED CONCRETE BEAMS
[redacted]	6281	L.F.	(PL) PRESTRESSED CONCRETE BEAMS (72 BT)
503(B)	6144	L.F.	PRESTRESSED CONCRETE DOUBLE TEE
504(A)	1314	C.Y.	CLASS AA CONCRETE
505(A)	1380	L.F.	CONCRETE RAIL

505(A)	6239	L.F.	CONCRETE RAIL (13"X17")
505(A)	1381	L.F.	CONCRETE PARAPET
506(A)	1322	LB.	STUCTURAL STEEL
[redacted]A)	6005	LB.	STRUCTURAL STEEL A36
[redacted](A)	6006	LB.	STRUCTURAL STEEL A572
506(A)	6007	LB.	STRUCTURAL STEEL A588
508	6333	S.F.	(SP) RETAINING WALL
509(A)	1236	C.Y.	CLASS AA CONCRETE
509(A)	0319	C.Y.	CLASS AA CONCRETE
509(A)	6075	C.Y.	(PL) CLASS AA HIGH STRENGTH CONCRETE
509(B)	1328	C.Y.	CLASS A CONCRETE
509(B)	0321	C.Y.	CLASS A CONCRETE
509(B)	0295	C.Y.	H.E.S. CONCRETE CLASS A
509(C)	0322	C.Y.	CLASS A CONCRETE FOR SMALL STRUCTURES
509(D)	1330	C.Y.	CLASS B CONCRETE
509(D)	0324	C.Y.	CLASS B CONCRETE
509(E)	1331	C.Y.	CLASS C CONCRETE
509(E)	0325	C.Y.	CLASS C CONCRETE
509(F)	6329	C.Y.	(SU) CLASS AA–1 HIGH STRENGTH CONCRETE
514(B)	1334	L.F.	UNTREATED TIMBER PILING
514(C)	1335	L.F.	TREATED TIMBER PILING
514(D)	1336	L.F.	REINFORCED CONCRETE PILING
514(E)	6010	L.F.	STEEL PILING (HP 10X42)
514(E)	6011	L.F.	STEEL PILING (HP 12X53)
514(E)	6012	L.F.	STEEL PILING (HP 14X73)
[redacted]E)	6081	L.F.	STEEL PILING (HP 12X74)
514(E)	6226	L.F.	STEEL PILING (HP 10X57)
514(E)	6227	L.F.	STEEL PILING (HP 14X89)
514(E)	6228	L.F.	STEEL PILING (HP 14X102)
514(E)	6335	L.F.	STEEL PILING (HP 8X36)
514(E)	6350	L.F.	STEEL PILING (HP 14X117)
516(A)	6088	L.F.	DRILLED SHAFTS 12" DIAMETER
516(A)	6089	L.F.	DRILLED SHAFTS 18" DIAMETER
516(A)	6090	L.F.	DRILLED SHAFTS 24" DIAMETER
516(A)	6091	L.F.	DRILLED SHAFTS 30" DIAMETER
516(A)	6092	L.F.	DRILLED SHAFTS 36" DIAMETER
516(A)	6093	L.F.	DRILLED SHAFTS 42" DIAMETER
516(A)	6094	L.F.	DRILLED SHAFTS 48" DIAMETER
516(A)	6095	L.F.	DRILLED SHAFTS 54" DIAMETER
516(A)	6096	L.F.	DRILLED SHAFTS 60" DIAMETER
516(A)	6097	L.F.	DRILLED SHAFTS 66" DIAMETER
516(A)	6098	L.F.	DRILLED SHAFTS 72" DIAMETER
516(A)	6099	L.F.	DRILLED SHAFTS 78" DIAMETER
516(A)	6100	L.F.	DRILLED SHAFTS 84" DIAMETER
530	6018	S.Y.	CLASS A BRIDGE FLOOR REPAIR
530	6019	S.Y.	CLASS B BRIDGE FLOOR REPAIR
[redacted]	6020	S.Y.	CLASS C BRIDGE FLOOR REPAIR
[redacted]	6021	S.Y.	CLASS A BRIDGE FLOOR REPAIR (TP A/B)
530	6022	S.Y.	CLASS B BRIDGE FLOOR REPAIR (TP A/B)
530	6023	S.Y.	CLASS C BRIDGE FLOOR REPAIR (TP A/B)
530	6024	S.Y.	BRIDGE FLOOR OVERLAY (TP A/B)

531	5127	S.Y.	BRIDGE FLOOR OVERLAY (TYPE B)
531	6026	S.Y.	BRIDGE FLOOR OVERLAY (TYPE A/B)
532	6071	S.Y.	BRIDGE FLOOR OVERLAY (TYPE A)
[redacted]	6328	S.Y.	(SP) BRIDGE FLOOR OVERLAY (PYRAMENT)
[redacted](A)	1350	C.Y.	TYPE I–PLAIN RIPRAP
601(A)	1351	TON	TYPE I–PLAIN RIPRAP
601(A–1)	1352	C.Y.	TYPE I–A PLAIN RIPRAP
601(A–1)	1353	TON	TYPE I–A PLAIN RIPRAP
601(A–2)	1354	C.Y.	TYPE I–A FILTER BLANKET
601(A–2)	1355	TON	TYPE I–A FILTER BLANKET
601(B)	1356	C.Y.	TYPE II SP. PLAIN RIPRAP
601(B)	1357	TON	TYPE II SP. PLAIN RIPRAP
601(B–1)	1358	C.Y.	TYPE II–A SP. PLAIN RIPRAP
601(B–1)	1359	TON	TYPE II–A SP. PLAIN RIPRAP
601(B–2)	1360	C.Y.	TYPE II–A FILTER BLANKET
601(B–2)	1361	TON	TYPE II–A FILTER BLANKET
601(C)	1362	S.Y.	TYPE III LAID UP RIPRAP
601(D)	1390	S.Y.	TYPE IV GROUTED RIPRAP
601(E)	6312	S.Y.	FILTER FABRIC RIPRAP
609(A)	0288	L.F.	CONCRETE CURB (6" MNTBLE–INTEGRAL)
609(A)	0299	L.F.	CONCRETE CURB (4" MNTBLE–INTEGRAL)
609(A)	0300	L.F.	CONCRETE CURB (6" BAR–INTEGRAL)
609(A)	0380	L.F.	CONCRETE CURB (8" BAR–INTEGRAL)
609(A)	4965	L.F.	CONCRETE CURB (8" MNTBLE–INTEGRAL)
609(A)	5864	L.F.	CONCRETE CURB (6" BAR–DOWELLED)
[redacted](B)	0385	L.F.	1'–8" COMBINED C&G (4"MNT–NOTCH)
609(B)	0386	L.F.	1'–8" COMBINED C&G (6"MNT–NOTCH)
609(B)	0387	L.F.	1'–8" COMBINED C&G (6"BAR–NOTCH)
609(B)	0388	L.F.	1'–8" COMBINED C&G (8"BAR–NOTCH)
609(B)	0393	L.F.	2'–8" COMBINED C&G (4"MNT–NOTCH)
609(B)	0394	L.F.	2'–8" COMBINED C&G (6"MNT–NOTCH)
609(B)	0395	L.F.	2'–8" COMBINED C&G (6"BAR–NOTCH)
609(B)	0396	L.F.	2'–8" COMBINED C&G (8"BAR–NOTCH)
609(B)	1511	L.F.	1'–8" COMBINED C&G (4" MNT.)
609(B)	1512	L.F.	1'–8" COMBINED C&G (6" MNT.)
609(B)	1513	L.F.	1'–8" COMBINED C&G (6" BAR)
609(B)	1514	L.F.	1'–8" COMBINED C&G (8" BAR)
609(B)	1523	L.F.	2'–8" COMBINED C&G (4" MNT.)
609(B)	1524	L.F.	2'–8" COMBINED C&G (6" MNT.)
609(B)	1525	L.F.	2'–8" COMBINED C&G (6" BAR)
609(B)	1526	L.F.	2'–8" COMBINED C&G (8" BAR)
609(B)	4966	L.F.	1'–8" COMBINED C&G (8" MNT.)
609(B)	5179	L.F.	2'–0" COMBINED C&G (6"BAR–NOTCH)
609(C)	4472	L.F.	CONCRETE HEADER CURB (6"X16")
609(C)	4473	L.F.	CONCRETE HEADER CURB (12"X18")
609(C)	4810	L.F.	CONCRETE HEADER CURB (8"X18")
[redacted](A)	0602	S.Y.	4" CONCRETE SIDEWALK
[redacted](B)	0399	S.Y.	6" CONCRETE DRIVEWAY (H.E.S.)
610(B)	0604	S.Y.	6" CONCRETE DRIVEWAY
610(B)	5016	S.Y.	8" CONCRETE DRIVEWAY
610(B)	5898	S.Y.	8" CONCRETE DRIVEWAY (H.E.S.)

610(C)	0608	S.Y.	4" CONCRETE DIVIDING STRIP
610(C)	0609	S.Y.	6" CONCRETE DIVIDING STRIP
613(S)	1180	C.Y.	TRENCH EXCAVATION
[redacted](B)	6319	S.Y.	REMOVAL OF BRIDGE DECK
619(B)	4726	L.F.	REMOVAL OF CURB AND GUTTER
619(B)	4727	S.Y.	REMOVAL OF CONCRETE PAVEMENT
619(B)	4728	S.Y.	REMOVAL OF ASPHALT PAVEMENT
619(B)	4763	S.Y.	REMOVAL OF CONC. PAVEMENT W/ASPHALT OVERLAY
619(B)	4782	L.F.	REMOVAL OF CONCRETE CURB
619(C)	0924	L.F.	SAWING PAVEMENT
900.10	6141	L.F.	(PL) CONCRETE SAWING
900.15	6122	S.F.	(PL) STEEL SHEET PILING
930.30	4690	L.F.	(PL) CONCRETE JOINT REHABILITATION

Production Hours Example:

Note - All final production hours will be reported on a per crew basis to the nearest whole hour.

Drill Shaft

This item is on the list and is paid by the linear foot.

The production hours will include;

. Drive the outer casing	0.2 hrs
. Drill the shaft	6.1 hrs
. De-watering	2.0 hrs
. Set the steel & place the concrete	0.7 hrs
. Pull the outer casing	0.1 hrs
Total	9.1 hrs

Enter the data to the progressive estimate system as follows;

[redacted]YPAY/PRGADD OKLAHOMA DEPARTMENT OF TRANSPORTATION
PAY ITEMS DONE ON SPECIFIED DATE

WORK-DATE _____ BAMS-NO _____ LINE-NO ___ ITEM-NO 516(A)

JOB-PIECE _____ CONTRACT _____ NEXT-EST __ PROJ _____

DESCRIP Drilled Shafts UNIT L.F. AGREED-QTY _____

QUANTITY-PREV-ESTIMATES _____ ACCUM-THIS-PERIOD _____
QUANTITY-LIFE-TO-DATE _____

QUANTITY-THIS-DAY 80 INSPECTOR _____ HOURS 9.0

COMMENTS _____

1 ENTER WORK-DATE,BAMS-NO,LINE-NO AND PRESS ENTER (DATE IS NOT USED ON DEDUCTS
2 THEN COMPLETE SCREEN AND PRESS PF1 (USE DESCRIP ONLY ON LINES 991 THRU 993)
3 LINES 991 AND 992 ARE SPECIAL DEDUCTIONS. LINE 993 IS FOR LIQUIDATED DAMAGE.
THESE LINES ARE ASSUMED "-". IF NOT, INCLUDE A "+" SIGN. LINES 994 THRU 998
(ADJUSTMENTS) ARE ENTERED BY PRGADJST BUT MAY BE CORRECTED HERE IF NECESSARY.
4 PF1= ADD/UPDATE PF3= END PF11= DELETE
TO RESET CURSOR: PF9 = LINE-NO, PF10 = BAMS-NO, PF12 = WORK-DATE

D000002

Bridge Abutment:

Select borrow is on the list and paid by the cubic yard.

The production hours will include;

. Dirt work	32.0 hrs

Steel piling is on the list and paid by the linear foot.

The production hours will include;

. Drive piling	20.2 hrs

Concrete is on the list and paid by the cubic yard.

The production hours will include;

. Final grading	1.0 hrs
. Form work	3.3 hrs
. Setting steel	2.2 hrs
. Placing concrete	0.5 hrs
Total	7.0 hrs

Enter the data to the progressive estimate system as follows;

DAILYPAY/PRGADD OKLAHOMA DEPARTMENT OF TRANSPORTATION
PAY ITEMS DONE ON SPECIFIED DATE

WORK-DATE _____ BAMS-NO _____ LINE-NO ___ ITEM-NO 202(F)

JOB-PIECE _____ CONTRACT _____ NEXT-EST __ PROJ _____

DESCRIP Select Borrow UNIT C.Y. AGREED-QTY _____

QUANTITY-PREV-ESTIMATES _____ ACCUM-THIS-PERIOD 10,000
QUANTITY-LIFE-TO-DATE _____

QUANTITY-THIS-DAY _____ INSPECTOR _____ HOURS 32.0

COMMENTS _____

1 ENTER WORK-DATE,BAMS-NO,LINE-NO AND PRESS ENTER (DATE IS NOT USED ON DEDUCTS)
2 THEN COMPLETE SCREEN AND PRESS PF1 (USE DESCRIP ONLY ON LINES 991 THRU 993)
3 LINES 991 AND 992 ARE SPECIAL DEDUCTIONS. LINE 993 IS FOR LIQUIDATED DAMAGE. THESE LINES ARE ASSUMED "-". IF NOT, INCLUDE A "+" SIGN. LINES 994 THRU 998 (ADJUSTMENTS) ARE ENTERED BY PRGADJST BUT MAY BE CORRECTED HERE IF NECESSARY.
4 PF1= ADD/UPDATE PF3= END PF11= DELETE
RESET CURSOR: PF9 = LINE-NO, PF10 = BAMS-NO, PF12 = WORK-DATE

D000002

DAILYPAY/PRGADD OKLAHOMA DEPARTMENT OF TRANSPORTATION
PAY ITEMS DONE ON SPECIFIED DATE

WORK-DATE _____ BAMS-NO _____ LINE-NO ___ ITEM-NO 514(E)

JOB-PIECE _____ CONTRACT _____ NEXT-EST __ PROJ _____

DESCRIP Steel Piling UNIT L.F. AGREED-QTY _____

QUANTITY-PREV-ESTIMATES _____ ACCUM-THIS-PERIOD 400
QUANTITY-LIFE-TO-DATE _____

QUANTITY-THIS-DAY _____ INSPECTOR _____ HOURS 20.0

COMMENTS _____

1 ENTER WORK-DATE,BAMS-NO,LINE-NO AND PRESS ENTER (DATE IS NOT USED ON DEDUCTS
2 THEN COMPLETE SCREEN AND PRESS PF1 (USE DESCRIP ONLY ON LINES 991 THRU 993)
3 LINES 991 AND 992 ARE SPECIAL DEDUCTIONS. LINE 993 IS FOR LIQUIDATED DAMAGE.
THESE LINES ARE ASSUMED "-". IF NOT, INCLUDE A "+" SIGN. LINES 994 THRU 998
(ADJUSTMENTS) ARE ENTERED BY PRGADJST BUT MAY BE CORRECTED HERE IF NECESSARY.
4 PF1= ADD/UPDATE PF3= END PF11= DELETE
TO RESET CURSOR: PF9 = LINE-NO, PF10 = BAMS-NO, PF12 = WORK-DATE

D000002

DAILYPAY/PRGADD OKLAHOMA DEPARTMENT OF TRANSPORTATION
PAY ITEMS DONE ON SPECIFIED DATE

WORK-DATE _____ BAMS-NO _____ LINE-NO ___ ITEM-NO 509(A)

JOB-PIECE _____ CONTRACT _____ NEXT-EST __ PROJ _____

DESCRIP Class AA concrete UNIT C.Y. AGREED-QTY _____

QUANTITY-PREV-ESTIMATES _____ ACCUM-THIS-PERIOD 50
QUANTITY-LIFE-TO-DATE _____

QUANTITY-THIS-DAY _____ INSPECTOR _____ HOURS 7.0

COMMENTS _____

1 ENTER WORK-DATE,BAMS-NO,LINE-NO AND PRESS ENTER (DATE IS NOT USED ON DEDUCTS)
2 THEN COMPLETE SCREEN AND PRESS PF1 (USE DESCRIP ONLY ON LINES 991 THRU 993)
3 LINES 991 AND 992 ARE SPECIAL DEDUCTIONS. LINE 993 IS FOR LIQUIDATED DAMAGE.
THESE LINES ARE ASSUMED "-". IF NOT, INCLUDE A "+" SIGN. LINES 994 THRU 998
(ADJUSTMENTS) ARE ENTERED BY PRGADJST BUT MAY BE CORRECTED HERE IF NECESSARY.
4 PF1= ADD/UPDATE PF3= END PF11= DELETE
TO RESET CURSOR: PF9 = LINE-NO, PF10 = BAMS-NO, PF12 = WORK-DATE

D000002

The following is a supplement to the **PRGADD** module of the progressive estimate system.

The screen has a new field named **HOURS**. The following examples will illustrate the use of this new field.

Production Hours Example:

Note - All final production hours will be reported on a per crew basis to the nearest whole hour.

Drill Shaft

This item is on the list and is paid by the linear foot.

The production hours will include;

. Drive the outer casing	0.2 hrs
. Drill the shaft	6.1 hrs
. De-watering	2.0 hrs
. Set the steel & place the concrete	0.7 hrs
. Pull the outer casing	0.1 hrs
Total	9.1 hrs

Enter the data to the progressive estimate system as follows;

DAILYPAY/PRGADD OKLAHOMA DEPARTMENT OF TRANSPORTATION
PAY ITEMS DONE ON SPECIFIED DATE

WORK-DATE _____ BAMS-NO _____ LINE-NO ___ ITEM-NO 516(A)

JOB-PIECE _____ CONTRACT _____ NEXT-EST __ PROJ _____

DESCRIP Drilled Shafts UNIT L.F. AGREED-QTY _____

QUANTITY-PREV-ESTIMATES _____ ACCUM-THIS-PERIOD _____
QUANTITY-LIFE-TO-DATE _____

QUANTITY-THIS-DAY 80 INSPECTOR _____ HOURS 9.0

COMMENTS _____

1 ENTER WORK-DATE,BAMS-NO,LINE-NO AND PRESS ENTER (DATE IS NOT USED ON DEDUCTS
2 THEN COMPLETE SCREEN AND PRESS PF1 (USE DESCRIP ONLY ON LINES 991 THRU 993)
LINES 991 AND 992 ARE SPECIAL DEDUCTIONS. LINE 993 IS FOR LIQUIDATED DAMAGE.
SE LINES ARE ASSUMED "-". IF NOT, INCLUDE A "+" SIGN. LINES 994 THRU 998
(ADJUSTMENTS) ARE ENTERED BY PRGADJST BUT MAY BE CORRECTED HERE IF NECESSARY.
4 PF1= ADD/UPDATE PF3= END PF11= DELETE
TO RESET CURSOR: PF9 = LINE-NO, PF10 = BAMS-NO, PF12 = WORK-DATE

D000002

OKLAHOMA DEPARTMENT OF TRANSPORTATION

DATE: July 20, 1992

TO: Division Engineers, Construction Engineers, Engineering/Branch Managers

FROM: Byron Poynter, Construction Engineer

SUBJECT: CONSTRUCTION CONTROL DIRECTIVE NO. 920713

APPROVAL OF ASPHALT MIX DESIGN

It is essential that the asphalt mix design, for each specific project, be approved before the contractor begins production. Asphalt designs are subject to the average daily traffic count for each project. The mix design that was approved for an earlier project may not be acceptable even if the material sources and other factors are the same.

If there is to be a transfer of a mix design from another project, do not allow the contractor to proceed until the design has been approved by the Materials Division.

Byron Poynter
Construction Engineer

Copy To: Distribution list.

OKLAHOMA DEPARTMENT OF TRANSPORTATION

DATE: July 10, 1992

TO: Division Engineers, Construction Engineers, and Engineering/Branch Managers.

FROM: Byron Poynter, Construction Engineer

SUBJECT: CONSTRUCTION CONTROL DIRECTIVE NO. 920706

RETESTING OF OF BRIDGE DECKS
FOR PENETRATION AND ABSORPTION

Refer also to Control Directive numbers 920604, 920514, 920312 and 911009.

In testing Penetrating Water Repellant Surface Treatment, When a section of the treatment is tested and found to be passing on one characteristic and failing on the other, only the characteristic that failed is to be retested (see Directive No. 920312). When you order retesting, please specify which tests are to be performed.

Byron Poynter P.E.
Construction Engineer

Copy to: Distribution list.

OKLAHOMA DEPARTMENT OF TRANSPORTATION

DATE: June 5, 1992

TO: Division Engineers, Construction Engineers, Engineering/Branch Managers

FROM: Byron Poynter, Construction Engineer

SUBJECT: CONSTRUCTION CONTROL DIRECTIVE NO. 920605

WHITE PIGMENTED CURING COMPOUND

Normally, this material is tested by lots during manufacture and certified to highway projects when shipped. Recently some samples have been taken at the project site to make a comparison. It is evident that, in many cases, the material is not thoroughly mixed when applied in the field.

Referring to section 414.04(m)2. and 414.03(h) of the standard specifications, the material must be thoroughly mixed using a tank with an agitator to prevent settlement. The project inspector should ensure that the material is handled properly in accordance with specifications.

Byron Poynter
Construction Engineer

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OKLAHOMA DEPARTMENT OF TRANSPORTATION

DATE: June 4, 1992

TO: Division Engineers, Construction Engineers, Engineering/Branch Managers

FROM: Byron Poynter, Construction Engineer

SUBJECT: CONSTRUCTION CONTROL DIRECTIVE NO. 920604
(Refer also to Directive No. ~~902514~~ 920514)

REVISED

TIME ALLOWANCE FOR PENETRATING WATER REPELLANT SURFACE TREATMENT

Moisture, in any form, inhibits the amount of penetration that can be obtained when the water repellant is applied to concrete surfaces. This includes internal moisture as well as rainfall. It is essential that the concrete surfaces be as dry as practical when the repellant is applied, and that the application is done in accordance with the chemical manufacturers recommendation's.

To ensure that there is no added pressure to apply the repellant under questionable surface conditions, due to the project possibly being behind schedule, you are to credit time to the project in the following manner:

When application of the water repellant is the next item on the "critical path", and moisture remains a problem, credit time charges to the project without deduction for usually severe weather. That is; report the days in the "other" column on the report form, giving full credit for each day the repellant cannot be applied.

Byron Poynter
Construction Engineer

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OKLAHOMA DEPARTMENT OF TRANSPORTATION

DATE: June 3, 1992

TO: Division Engineers, Construction Engineers, Engineering/Branch Managers

FROM: Byron Poynter, Construction Engineer

SUBJECT: CONSTRUCTION CONTROL DIRECTIVE NO. 920603

PAY ADJUSTMENTS

When materials and/or workmanship are not in conformity with the plans and the contract, but not deficient to the extent that they must be removed and replaced, the work may be accepted with an appropriate pay adjustment. Please refer to "Conformity With Plans and Contracts", Section 105.03 of the Standard Specifications, Edition of 1988.

The reduction is not a penalty, but a reduction in amount paid for a reduction in quality received. Pay adjustments should be computed on the basis of "equitable payment for the value received".

All pay adjustments are to be documented by Change Order. It is not necessary for the change to be approved before the adjustment is placed on the estimate. It is not necessary for the contractor to sign the change. This type of change will not require commission approval, and will be returned promptly. This type of deduction is to be placed at the end of the estimate on one of the "900" lines.

It is essential that all of the materials delivered to the jobsite, be reported. DO NOT adjust payment by reducing the quantity delivered.

If the unit price is to be changed, a supplemental agreement, approved by the Highway Commission, will be required.

Byron Poynter
Construction Engineer

Copy To: Distribution list.

OKLAHOMA DEPARTMENT OF TRANSPORTATION

DATE: May 14, 1992

TO: Division Engineers, Construction Engineers, and Engineering/Branch Managers.

FROM: Byron Poynter, Construction Engineer

SUBJECT: CONSTRUCTION CONTROL DIRECTIVE NO. 920514

PAY ADJUSTMENT FOR PENETRATING WATER REPELLANT SURFACE TREATMENT

Referring to Control Directive No. 920312, there are a significant number of cases where, even after retreatment, the required 0.15 in. penetration will not be reached. Some contractors may want to accept a lower payment in exchange for not meeting penetration requirements. If the prime contractor requests an adjustment, it should be made according to the following guidelines:

The prime contractor must request the adjustment.

The areas where penetration is less than 0.15 in., on the first application, must be retreated.

After the second treatment, the areas that have penetration results less than 0.15 in. may be adjusted in accordance with the following schedule.

PENETRATION IN INCHES	PERCENTAGE OF PAYMENT	PENETRATION IN INCHES	PERCENTAGE OF PAYMENT
0.15 or more	100	0.10	75
0.14	99	0.09	64
0.13	96	0.08	51
0.12	91	0.07	36
0.11	84	0.06	19
		Less than 0.06	0

Byron Poynter P.E.
Construction Engineer

Copy to: Distribution list.

OKLAHOMA DEPARTMENT OF TRANSPORTATION

DATE: March 12, 1992

TO: Division Engineers, Construction Engineers, and Engineering/Branch Managers.

FROM: Byron Poynter, Construction Engineer

SUBJECT: CONSTRUCTION CONTROL DIRECTIVE NO. 920312

RETREATMENT OF PENETRATING WATER REPELLANT CONCRETE SURFACES

There have been some cases where the Penetrating Water Repellant Treatment would not penetrate to the prescribed depth of 0.15 inch. The contractor has been permitted to retreat in order to acquire the proper penetration (refer to Directive No. 911009).

During initial testing, two cores are taken for each test, one to test the chemical penetration, the other to test the absorption of the concrete. If retreatment is necessary, cores should be taken to verify only the characteristic that failed. That is, if the penetration failed, but the absorption passed, it is only necessary to remove one core for each 2000 square feet of the failed area, for the penetration test. This will minimize the number of cores taken in the bridge decks. If pentration and absorption fail for the entire deck, the same number of tests will be required in retesting, as for initial testing.

There is a proposal to reduce the penetration requirement to 0.10 inch. If this is approved, a special provision will be included in future contracts. The provision will not be retroactive. Projects with a specified 0.15 inch penetration WILL NOT be reduced or otherwise adjusted. If retreatment is not successful, a pay adjustment will be in order.

Byron Poynter P.E.
Construction Engineer

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