

Appendix Q – EPA BMP Fact Sheets



U.S. ENVIRONMENTAL PROTECTION AGENCY

National Pollutant Discharge Elimination System (NPDES)

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Silt Fences

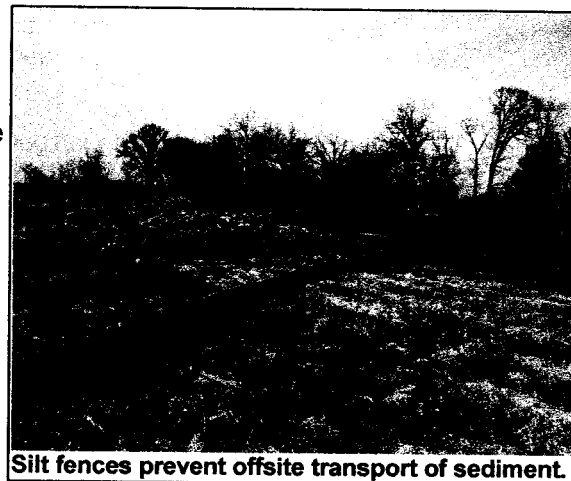
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Minimum Measure: Construction Site Stormwater Runoff Control

Subcategory: Sediment Control

Description

Silt fences are used as temporary perimeter controls around sites where construction activities will disturb the soil. They can also be used around the interior of the site. A silt fence consists of a length of filter fabric stretched between anchoring posts spaced at regular intervals along the site at low/downslope areas. The filter fabric should be entrenched in the ground between the support posts. When installed correctly and inspected frequently, silt fences can be an effective barrier to sediment leaving the site in stormwater runoff.



Silt fences prevent offsite transport of sediment.

Applicability

Silt fences apply to construction sites with relatively small drainage areas. They are appropriate in areas where runoff will occur as low-level flow, not exceeding 0.5 cfs. The drainage area for silt fences should not exceed 0.25 acre per 100-foot fence length. The slope length above the fence should not exceed 100 feet (NAHB, 1995).

Siting and Design Considerations

The material for silt fences should be a pervious sheet of synthetic fabric such as polypropylene, nylon, polyester, or polyethylene yarn. Choose the material based on the minimum synthetic fabric requirements shown in Table 1.

Table 1. Minimum requirements for silt fence construction (Sources: USEPA, 1992; VDCR, 1995)

Physical property	Requirements
Filtering efficiency	75%-85% (minimum): highly dependent on local conditions
Tensile strength at 20% (maximum) Elongation	Standard strength: 30 lb/linear inch (minimum) Extra strength: 50 lb/linear inch (minimum)

Cost Considerations

Installation costs for silt fences are approximately \$6.00 per linear foot (USEPA, 1992). The Southeastern Wisconsin Regional Planning Commission estimates unit costs between \$2.30 and \$4.50 per linear foot (SWRPC, 1991).

References

NAHB (National Association of Home Builders). 1995. *Guide for Builders and Developers*. National Association of Homebuilders, Washington, DC.

Smolen, M.D., D.W. Miller, L.C. Wyatt, J. Lichthardt, and A.L. Lanier. 1988. *Erosion and Sediment Control Planning and Design Manual*. North Carolina Sedimentation Control Commission; North Carolina Department of Environment, Health, and Natural Resources; and Division of Land Resources Land Quality Section, Raleigh, NC.

SWRPC (Southeastern Wisconsin Regional Planning Commission). 1991. *Costs of Urban Nonpoint Source Water Pollution Control Measures*. Technical report no. 31. Southeastern Wisconsin Regional Planning Commission, Waukesha, WI.

USEPA (U.S. Environmental Protection Agency). 1992. *Stormwater Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices*. EPA 832-R-92-005. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

USEPA (U.S. Environmental Protection Agency). 1993. *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters*. EPA 840-B-92-002. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

VDCR (Virginia Department of Conservation). 1995. *Virginia Erosion & Sediment Control Field Manual*. 2nd ed. Virginia Department of Conservation, Division of Soil and Water Conservation, Richmond, VA.

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Fiber Rolls

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Minimum Measure: Construction Site Stormwater Runoff Control

Subcategory: Sediment Control

Description

Fiber rolls (also called fiber logs or straw wattles) are tube-shaped erosion-control devices filled with straw, flax, rice, coconut fiber material, or composted material. Each roll is wrapped with UV-degradable polypropylene netting for longevity or with 100 percent biodegradable materials like burlap, jute, or coir. Fiber rolls complement permanent best management practices used for source control and revegetation. When installed in combination with straw mulch, erosion control blankets, hydraulic mulches, or bounded fiber matrices for slope stabilization, these devices reduce the effects of long or steep slopes

(Earth Saver Erosion Control Products, 2005). Fiber rolls also help to slow, filter, and spread overland flows. This helps to prevent erosion and minimizes rill and gully development. Fiber rolls also help reduce sediment loads to receiving waters by filtering runoff and capturing sediments.



Photo from Earth Saver Erosion Control Products, 2005.

Applicability

Fiber rolls can be used in areas of low shear stress. Avoid using them in channels that are actively incising or in reaches with large debris loads or potential for significant ice buildup (Maryland Department of the Environment, 2000). Fiber rolls have been used to control erosion in a variety of areas--along highways and at construction sites, golf courses, ski areas, vineyards, and reclaimed mines. According to the California Stormwater Quality Association (CASQA, 2003), fiber rolls can be suitable in the following settings:

- Along the toe, top, face, and at-grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow
- At the end of a downward slope where it transitions to a steeper slope
- Along the perimeter of a project
- As check dams in unlined ditches
- Downslope of exposed soil areas
- Around temporary stockpiles

Siting and Design Considerations

Fiber rolls should be prefabricated rolls or rolled tubes of geotextiles fabric. When rolling the tubes, make sure each tube is at least 8 inches in diameter. Bind the rolls at each end and every 4 feet along the length of the roll with jute-type twine (California Stormwater Quality Association, 2003).

Slope ground projects

On slopes, install fiber rolls along the contour with a slight downward angle at the end of each row to prevent ponding at the midsection (California Straw Works, 2005). Turn the ends of each fiber roll upslope to prevent runoff from flowing around the roll. Install fiber rolls in shallow trenches dug 3 to 5 inches deep for soft, loamy soils and 2 to 3 inches deep for hard, rocky soils. Determine the vertical spacing for slope installations on the basis of the slope gradient and soil type. According to California Straw Works (2005), a good rule of thumb is:

1:1 slopes = 10 feet apart

2:1 slopes = 20 feet apart

3:1 slopes = 30 feet apart

4:1 slopes = 40 feet apart

For soft, loamy soils, place the rows closer together. For hard, rocky soils, place the rows farther apart. Stake fiber rolls securely into the ground and orient them perpendicular to the slope. Biodegradable wood stakes or willow cuttings are recommended. Drive the stakes through the middle of the fiber roll and deep enough into the ground to anchor the roll in place. About 3 to 5 inches of the stake should stick out above the roll, and the stakes should be spaced 3 to 4 feet apart. A 24-inch stake is recommended for use on soft, loamy soils. An 18-inch stake is recommended for use on hard, rocky soils.

Projects without slopes

Fiber rolls can also be used at projects with minimal slopes. Typically, the rolls are installed along sidewalks, on the bare lot side, to keep sediment from washing onto sidewalks and streets and into gutters and storm drains. For installations along sidewalks and behind street curbs, it might not be necessary to stake the fiber rolls, but trenches must still be dug. Fiber rolls placed around storm drains and inlets must be staked into the ground. These rolls should direct the flow of runoff toward a designated drainage area. Place them 1 to 1½ feet back from the storm drain or inlet.

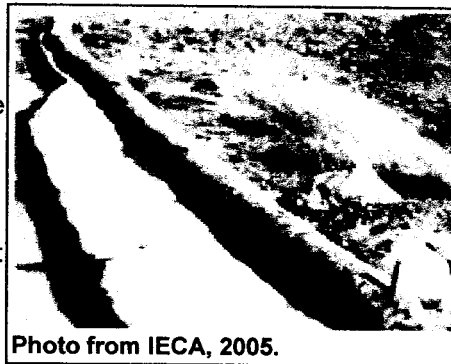


Photo from IECA, 2005.

Limitations

The installation and overall performance of fiber rolls have several limitations, including the following (California Stormwater Quality Association, 2003):

- Fiber rolls are not effective unless trenched.
- Fiber rolls can be difficult to move once saturated.
- To be effective, fiber rolls at the toe of slopes greater than 5:1 must be at least 20 inches in diameter. An equivalent installation, such as stacked smaller-diameter fiber rolls, can be used to achieve a similar level of protection.

Appendix R – SWMP Self Audit Check List

I. STORMWATER SELF-AUDIT CHECKLIST

This section contains a self audit checklist for the specific stormwater requirements in the EPA Construction General Permit (CGP) for construction activities. In addition, this section contains background information on the U.S. Environmental Protection Agency's (EPA) stormwater requirements. It is best to review this checklist prior to construction to ensure that you are aware of the steps required to comply with the environmental requirements. You can also use this checklist to conduct self audits during construction. The current CGP was issued in 2003 by EPA Headquarters, and applies to construction activities in:

- Indian Country in certain states;
- U.S. Territories (except the Virgin Islands);
- Federal facilities in certain states;
- Alaska;
- Idaho;
- Massachusetts;
- New Hampshire;
- New Mexico;
- Certain industry discharges in Oklahoma and Texas; and
- Washington, D.C.

For a detailed list of areas, see Attachment A of this checklist. For a copy of the complete CGP, go to http://www.epa.gov/npdes/pubs/cgp2003_entirepermit.pdf. The CGP requirements apply to all stormwater discharges associated with the construction activity unless operators of the construction site choose to apply for either an individual permit or an alternative general permit.

Construction activities in areas not listed in Attachment A may be subject to state or local requirements that are different from the CGP requirements. The EPA Region or state in which the construction activity is located will have more information on stormwater requirements that apply (or go to <http://www.cicacenter.org/swp2.html>).

Section III of Part I of this guide contains a more detailed discussion on stormwater requirements.

CHECKLIST FOR EPA'S CONSTRUCTION GENERAL PERMIT (CGP) REQUIREMENTS FOR CONSTRUCTION AREAS

BACKGROUND INFORMATION

Name of Auditor: _____

Date of Audit: _____

Name of Project/Site: _____

This CGP checklist has two parts. The first part allows users to audit their compliance with the paperwork requirements. The second part covers the implementation of the field requirements. This second part can be removed from the rest of the checklist and used in the field.

A "notes" area is provided at the end of each section of this checklist. For every "No" answer, enter a description of the missing information and the action required to bring the site into compliance in the "notes" area.

CGP - NOTICE OF INTENT (NOI)

<u>Yes</u>	<u>No</u>	
		1. Does the NOI include the following information:
<input type="checkbox"/>	<input type="checkbox"/>	Name, address, and telephone number of the operator who submitted the NOI?
<input type="checkbox"/>	<input type="checkbox"/>	Whether the operator is a federal, state, tribal, other public, or private entity?
<input type="checkbox"/>	<input type="checkbox"/>	Name (or other identifier), address, county, and latitude/longitude of the construction project or site?
<input type="checkbox"/>	<input type="checkbox"/>	Whether the project or site is located on Indian Country lands?
<input type="checkbox"/>	<input type="checkbox"/>	Name of the water body (e.g., stream, lake) that receives stormwater runoff from the construction site?
<input type="checkbox"/>	<input type="checkbox"/>	Estimated start and completion dates for the project?
<input type="checkbox"/>	<input type="checkbox"/>	Estimated number of acres on the site on which soil will be disturbed?
<input type="checkbox"/>	<input type="checkbox"/>	Confirmation that a Stormwater Pollution Prevention Plan (SWPPP) was developed prior to commencing construction activities?
<input type="checkbox"/>	<input type="checkbox"/>	Confirmation that the SWPPP complies with applicable local sediment and erosion control plans?
<input type="checkbox"/>	<input type="checkbox"/>	Indication of where the SWPPP can be reviewed and the name and telephone number of a contact person who can schedule a review?

<u>Yes</u>	<u>No</u>	
<input type="checkbox"/>	<input type="checkbox"/>	2. Does the NOI indicate whether any listed or proposed threatened or endangered species or designated critical habitat are in proximity to the stormwater discharges or stormwater-discharge-related activities covered by the permit?
<input type="checkbox"/>	<input type="checkbox"/>	3. Does the NOI contain information concerning preservation of historic properties? (This is optional.)
<input type="checkbox"/>	<input type="checkbox"/>	4. Was the NOI signed by the appropriate person (e.g., for a partnership by a general partner)?

NOTES / ACTIONS NEEDED TO BRING SITE INTO COMPLIANCE: _____

CGP - STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

<u>Yes</u>	<u>No</u>	
General Items		
<input type="checkbox"/>	<input type="checkbox"/>	5. Is a notice with the following information posted near the main entrance of the construction site?
<input type="checkbox"/>	<input type="checkbox"/>	The permit number for the project or a copy of the NOI if a permit number has not been assigned.
<input type="checkbox"/>	<input type="checkbox"/>	The name and telephone number of a local contact person.
<input type="checkbox"/>	<input type="checkbox"/>	A brief description of the project.
<input type="checkbox"/>	<input type="checkbox"/>	The location of the SWPPP if the site is inactive or does not have an on-site location to store the plan.

Yes No

SWPPP Requirements		
<input type="checkbox"/>	<input type="checkbox"/>	6. Does the SWPPP identify the name and NPDES permit number of the operator who has control over construction plans and specifications (including the ability to make modifications in the plans and specifications) and indicate the areas of the project for which the operator has control?
<input type="checkbox"/>	<input type="checkbox"/>	7. Does the SWPPP contain measures to ensure all other permittees impacted by a modification to the plans and specifications are notified of a modification in a timely manner?
<input type="checkbox"/>	<input type="checkbox"/>	8. Does the SWPPP indicate the portions of the project for which each operator has control over day-to-day activities?
<input type="checkbox"/>	<input type="checkbox"/>	9. For each portion of the project, does the SWPPP indicate the name and permit number of the parties with day-to-day operational control of those activities necessary to ensure compliance with the SWPPP or other permit conditions?
<input type="checkbox"/>	<input type="checkbox"/>	10. Was the SWPPP signed by the appropriate official (e.g., the responsible officer for a corporation)?
		11. Does the SWPPP contain the following information?
<input type="checkbox"/>	<input type="checkbox"/>	A description of the potential sources of pollutants.
<input type="checkbox"/>	<input type="checkbox"/>	A description of the nature of the construction activity.
<input type="checkbox"/>	<input type="checkbox"/>	A description of the intended sequence of major activities that disturb soils for major portions of the site (e.g., grubbing, excavation, grading, utilities, and infrastructure installation).
<input type="checkbox"/>	<input type="checkbox"/>	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 including use of off-site borrow and fill areas.
<input type="checkbox"/>	<input type="checkbox"/>	An estimate of the runoff coefficient of the site for both the pre-construction and post-construction conditions and data describing the soil or the quality of any discharge from the site.
		A general location map and a site map that indicate the following:
<input type="checkbox"/>	<input type="checkbox"/>	Drainage patterns and approximate slopes anticipated after major grading activities.
<input type="checkbox"/>	<input type="checkbox"/>	Areas of soil disturbance.
<input type="checkbox"/>	<input type="checkbox"/>	Areas that will not be disturbed.

<u>Yes</u>	<u>No</u>	
<input type="checkbox"/>	<input type="checkbox"/>	Locations of major structural and nonstructural controls identified in the SWPPP.
<input type="checkbox"/>	<input type="checkbox"/>	Locations where stabilization practices are expected to occur.
<input type="checkbox"/>	<input type="checkbox"/>	Locations of off-site material, waste, borrow, or equipment storage areas.
<input type="checkbox"/>	<input type="checkbox"/>	Surface waters (including wetlands).
<input type="checkbox"/>	<input type="checkbox"/>	Locations where stormwater discharges to a surface water.
<input type="checkbox"/>	<input type="checkbox"/>	Location and description of any discharge associated with industrial activity other than construction, including stormwater discharges from dedicated asphalt plants and dedicated concrete plants covered by the CGP. A description of controls and measures implemented at those areas to minimize pollutant discharges.
<input type="checkbox"/>	<input type="checkbox"/>	The name of the receiving water(s) and the areal extent and description of wetlands or other special aquatic sites at or near the site that will be disturbed or that will receive discharges from disturbed areas of the project.
<input type="checkbox"/>	<input type="checkbox"/>	A copy of the permit requirements.
<input type="checkbox"/>	<input type="checkbox"/>	Information on whether listed endangered or threatened species, or critical habitat are found in proximity to the construction activity and whether such species may be affected by the site's stormwater discharges or stormwater-discharge-related activities.

Inspections (Also See the Field Checklist)

<input type="checkbox"/>	<input type="checkbox"/>	<p>12. Are inspections by the permittee being performed:</p> <p>At least once every seven calendar days? OR</p> <p>At least once every 14 calendar days and within 24 hours of a storm event (≥ 0.5 inches)?</p> <p><i>Inspection frequency may be reduced – see Section 3.10 of the CGP for more details.</i></p>
<input type="checkbox"/>	<input type="checkbox"/>	13. Are inspection reports signed and certified by an authorized person?
<input type="checkbox"/>	<input type="checkbox"/>	14. Are the inspections being performed by a qualified person (and are the qualifications listed in the SWPPP)?

Yes No**SWPPP Control Measures**

		15. Does the SWPPP contain the following information for the major activities (e.g., grubbing) that disturb soils for major portions of the site?
<input type="checkbox"/>	<input type="checkbox"/>	A description of the appropriate measures to control pollutants in stormwater discharges (e.g., best management practices (BMPs)) and the general timing (sequence) during the construction process for implementing the control measures.
<input type="checkbox"/>	<input type="checkbox"/>	The permittee responsible for implementing the control measures.
		16. Does the description in the SWPPP of the appropriate measures to control pollutants in stormwater discharges address the following with respect to erosion and sediment?
<input type="checkbox"/>	<input type="checkbox"/>	Designing the construction-phase erosion and sediment controls to retain sediment on site to the extent practicable.
<input type="checkbox"/>	<input type="checkbox"/>	Properly selecting control measures, and installing and maintaining the measures in accordance with the manufacturer's specifications and good engineering practices.
<input type="checkbox"/>	<input type="checkbox"/>	Removing off-site accumulations of sediment that escape the construction site at a frequency sufficient to minimize the impact of the accumulations (e.g., fugitive sediment in a street could be washed into storm sewers by the next rain or pose a safety hazard to users of a public street).
<input type="checkbox"/>	<input type="checkbox"/>	Removing sediment in sediment traps or sedimentation ponds when design capacity is reduced by 50 percent.
<input type="checkbox"/>	<input type="checkbox"/>	Preventing litter, construction debris, and construction chemicals exposed to stormwater from becoming a pollutant source for the stormwater.
<input type="checkbox"/>	<input type="checkbox"/>	Managing off-site material storage areas (e.g., stockpiles of dirt and borrow areas) used solely for the permitted project in the SWPPP.
<input type="checkbox"/>	<input type="checkbox"/>	17. Does the SWPPP include a description of the interim and permanent stabilization practices for a site (e.g., sod stabilization and vegetative buffer strips) and an implementation schedule for the practices?
<input type="checkbox"/>	<input type="checkbox"/>	18. Does the SWPPP indicate the date when major grading activities will occur, the dates when construction activity on each portion of a site will temporarily or permanently cease, and the date when stabilization measures will be initiated?

<u>Yes</u>	<u>No</u>	
<input type="checkbox"/>	<input type="checkbox"/>	19. Does the SWPPP include a description of the structural practices (e.g., earth dikes and drainage swales) used to divert flows from exposed soils, to store flows, or to otherwise limit runoff and the discharge of pollutants from exposed areas of the site?
<input type="checkbox"/>	<input type="checkbox"/>	20. For common drainage locations, does the SWPPP include the requirement for: Temporary or permanent sediment basin(s) with a capacity to store either 3,600 cubic feet of runoff per acre drained, or the volume of runoff from a 2-year, 24-hour storm from each disturbed acre drained until final stabilization of the site (applicable to any size site)? OR For less than 10 acres, silt fences, vegetative buffer strips, or equivalent sediment controls for all down slope boundaries (and side slope boundaries, as appropriate) of the construction area?
<input type="checkbox"/>	<input type="checkbox"/>	21. Does the SWPPP include a description of the measures that will be used to manage stormwater during the construction activity and explain why a particular measure was selected? Example measures include stormwater detention structures, stormwater retention structures, and velocity dissipation devices placed at discharge locations and along the length of any outfall channel.
<input type="checkbox"/>	<input type="checkbox"/>	22. Does the SWPPP describe how solid material, including building material, is prevented from being discharged to waters of the United States, except as authorized in a permit issued under Section 404 of the Clean Water Act (CWA)?
<input type="checkbox"/>	<input type="checkbox"/>	23. Does the SWPPP describe how off-site vehicle tracking of sediments and generation of dust is minimized?
<input type="checkbox"/>	<input type="checkbox"/>	24. Does the SWPPP state it is consistent with applicable state, tribal, and local waste disposal, sanitary sewer, and septic tank system regulations to the extent these are located within the permitted area?
<input type="checkbox"/>	<input type="checkbox"/>	25. Does the SWPPP include a description of construction and waste materials expected to be stored on site; a description of controls to reduce the discharge of pollutants from these materials, including storage practices to minimize exposure of the materials to stormwater; and a description of spill prevention and response measures?
<input type="checkbox"/>	<input type="checkbox"/>	26. Does the SWPPP include a description of measures necessary to protect listed endangered or threatened species or critical habitat?
<input type="checkbox"/>	<input type="checkbox"/>	27. Is the SWPPP consistent with the requirements in applicable sediment and erosion site plans or site permits, or stormwater management site plans or site permit approved by state, tribal, or local officials?

Yes No

<input type="checkbox"/>	<input type="checkbox"/>	28. Does the SWPPP identify the sources of non-stormwater that are combined with stormwater discharges associated with construction activities, and does the SWPPP identify and ensure implementation of pollution prevention measures for the non-stormwater component of a discharge from the construction site?
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SWPPP Updates

		29. Did the permittee amend the SWPPP whenever:
<input type="checkbox"/>	<input type="checkbox"/>	There was a change in the project design, construction, operation, or maintenance that had a significant effect on the discharge of pollutants to waters of the United States?
<input type="checkbox"/>	<input type="checkbox"/>	Results of inspections or investigations indicated that the SWPPP is not achieving the general objectives of controlling pollutants in stormwater discharges associated with construction activities?
<input type="checkbox"/>	<input type="checkbox"/>	There was a release of a hazardous substance or oil in an amount equal to or in excess of a reportable quantity (including date, description, and circumstances of the release) within 14 days of the release? The SWPPP must identify measures to prevent the reoccurrence of a release and to respond to a release.

Recordkeeping

		30. Does the SWPPP include the following documentation required by the CGP?
<input type="checkbox"/>	<input type="checkbox"/>	Permit eligibility related to the Endangered Species Act (See Section 3.7 of the CGP).
<input type="checkbox"/>	<input type="checkbox"/>	Permit eligibility related to Total Maximum Daily Loads (TMDL) (See Section 3.14 of the CGP).
<input type="checkbox"/>	<input type="checkbox"/>	NOI.
<input type="checkbox"/>	<input type="checkbox"/>	NOI receipt/confirmation from EPA.
<input type="checkbox"/>	<input type="checkbox"/>	Permit requirements (i.e., CGP).
<input type="checkbox"/>	<input type="checkbox"/>	Inspection reports.
		<i>Sites must maintain the records for three years past expiration of permit (or completion of project).</i>

NOTES / ACTIONS NEEDED TO BRING SITE INTO COMPLIANCE: _____

CGP - NOTICE OF TERMINATION (NOT)

<u>Yes</u>	<u>No</u>	
<input type="checkbox"/>	<input type="checkbox"/>	31. Does the NOT contain the following information?
<input type="checkbox"/>	<input type="checkbox"/>	Permit number for the stormwater discharge.
<input type="checkbox"/>	<input type="checkbox"/>	Reason for termination (see CGP Requirements).
<input type="checkbox"/>	<input type="checkbox"/>	Name, address, and telephone number of the permittee submitting the NOT.
<input type="checkbox"/>	<input type="checkbox"/>	Name of the project and street address (or description of the location if no street address is available) for the construction site for which the NOT is submitted.
<input type="checkbox"/>	<input type="checkbox"/>	32. Was the NOT signed (certified) by the appropriate official (e.g., for a State, the principal executive officer or ranking elected official)?

NOTES / ACTIONS NEEDED TO BRING SITE INTO COMPLIANCE: _____

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SELF-AUDIT FIELD CHECKLIST FOR STORMWATER REQUIREMENTS

Date of Audit/Self-Audit: _____

Auditor (name, title, qualifications): _____

Name & Location of Project/Site: _____

Areas Audited: _____

Weather (since last inspection): _____

Name of Receiving Water: _____

For each of the questions below, please identify the area audited, any relevant observations, corrective actions that are needed, and the date that the corrective action is completed.

1. As described in the SWPPP, are the appropriate measures in place to control pollutants in stormwater discharges (e.g., BMPs as silt fencing)? List the control measures and observations below:

Control Measures and Observations: _____

Corrective Actions Needed/Expected Completion Date: _____

2. As described in the SWPPP, are the structural practices (e.g., earth dikes and drainage swales) in place to divert flows from exposed soils, to store flows, or to otherwise limit runoff and the discharge of pollutants from exposed areas?

Structural Practices and Observations: _____

Corrective Actions Needed/Expected Completion Date: _____

3. Are there any additional BMPs that need to be used (e.g., for any exposed areas)?

Areas and Observations: _____

Corrective Actions Needed/Expected Completion Date: _____

4. As described in the SWPPP, are the site practices in place to prevent stored materials (including solid, building, and waste materials) from being discharged into waters of the United States (except as authorized in the Section 404 permit)?

Material Storage Areas and Observations: _____

Corrective Actions Needed/Expected Completion Date: _____

5. Are the site practices listed in the SWPPP in place to minimize off-site vehicle tracking of sediments and generation of dust?

Practices and Observations: _____

Corrective Actions Needed/Expected Completion Date: _____

6. Are roadways clear of debris (e.g., no off-site vehicle tracking)?

Areas and Observations: _____

Corrective Actions Needed/Expected Completion Date: _____

7. *Is there any exposed litter, debris or chemicals? Check the following areas: equipment washing, maintenance, concrete washout, and site drainage locations.*

Areas and Observations: _____

Corrective Actions Needed/Expected Completion Date: _____

8. *As described in the SWPPP, are the appropriate measures in place to control pollutants in stormwater discharges with respect to erosion and sediment?*

Erosion and Sediment Controls and Observations: _____

Corrective Actions Needed/Expected Completion Date: _____

BACKGROUND ON STORMWATER REQUIREMENTS FOR CONSTRUCTION ACTIVITIES

DEFINITIONS

- **Construction Activities or Construction-Related Activities.** Refers to the actual earth disturbing construction activities and those activities supporting the construction project such as construction materials or equipment storage or maintenance (e.g., fill piles, borrow area, concrete truck washout, fueling), measures used to control the quality for storm water associated with construction activity, or other industrial storm water directly related to the construction process (e.g., concrete or asphalt batch plants). It does not refer to construction activities unrelated to earth disturbing activities such as interior remodeling, completion of interiors of structures, etc. "Construction" does not include routine earth disturbing activities that are part of the normal day-to-day operation of a completed facility (e.g., daily cover for landfills, maintenance of gravel roads or parking areas, landscape maintenance, etc). Also, it does not include activities under a State or Federal reclamation program to return an abandoned property into an agricultural or open land use.
- **Final Stabilization.** All soil disturbing activities at the site have been completed and a uniform perennial vegetative cover with a density of at least 70 percent of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed. See "final stabilization" definition in Appendix A of the Construction General Permit for further guidance where background native vegetation covers less than 100 percent of the ground, in arid or semi-arid areas, for individual lots in residential construction, and for construction projects on land used for agricultural purposes.
- **Land Disturbance.** Exposed soil due to clearing, grading, or excavation activities. This is also commonly referred to as ground disturbing activities.
- **Larger Common Plan of Development or Sale.** A contiguous area where multiple separate and distinct construction activities occur under one plan (e.g., construction is being done on 10 one-half acre lots in a six-acre development).
- **Operator.** The party (ies) that has: (1) operational control of construction project plans and specifications, including the ability to make modifications to those plans and specifications, or (2) day-to-day operational control of those activities

necessary to ensure compliance with a stormwater pollution prevention plan or other permit conditions.

- **Plan.** Any announcement or piece of documentation (e.g., sign, public notice or hearing, sales pitch, advertisement, drawing, permit application, zoning request, or computer design) or physical demarcation (e.g., boundary signs, lot stakes, or surveyor markings) indicating that construction activities may occur on a specific plot.
- **Stormwater.** Stormwater runoff, snow melt runoff, and surface runoff and drainage.
- **Waters of the United States.** All waters currently used, or used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to ebb and flow of the tide. Waters of the United States include, but are not limited to, all interstate waters and intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, play lakes, or natural ponds. See 40 CFR Part 122.2 for the complete definition.

ACRONYMS

- BMP - Best Management Practice
- CGP - Construction General Permit
- CWA - Clean Water Act
- NOI - Notice of Intent
- NOT - Notice of Termination
- NPDES - National Pollutant Discharge Elimination System
- SWPPP - Stormwater Pollution Prevention Plan

APPLICABILITY

EPA's CGP for construction activities applies to stormwater discharges from:²

- A construction activity that disturbs one or more acres of land.
- A construction activity that disturbs less than one acre of land, but is part of a larger common plan of development or sale that disturbs one or more acre of land.

²Except when the stormwater discharges associated with the construction activity are covered by either an individual permit or an alternative general permit.

- Construction related activities (e.g., concrete or asphalt batch plants, equipment staging yards, and material storage areas) for a local project an operator currently is involved with (e.g., a concrete batch plant providing concrete to several different highway projects in the same county) if: (1) the support activity is directly related to the construction site required to have NPDES permit coverage for discharges of stormwater associated with construction activity; (2) the support activity is not a commercial operation serving multiple, unrelated construction projects and does not operate beyond the completion of the last related construction project it serves; and (3) appropriate controls are identified in a SWPPP for the stormwater discharges from the construction support activities.
- Non-stormwater discharges that include:
 - Discharges from fire-fighting activities,
 - Fire hydrant flushings,
 - Waters used to wash vehicles where detergents are not used,
 - Water used to control dust,
 - Potable water including uncontaminated water line flushings,
 - Routine external building wash down that does not use detergents,
 - Pavement wash waters 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,
 - Uncontaminated air conditioning or compressor condensate,
 - Uncontaminated ground water or spring water,
 - Foundation or footing drains where flows are not contaminated with process materials such as solvents,
 - Uncontaminated excavation dewatering, and
 - Landscape irrigation.

CGP REQUIREMENTS

- The CGP requires, among other things, an operator to submit a **NOI** to be covered by the permit for a construction activity, to prepare a **SWPPP** for the construction activity, and to submit a **NOT** when the construction activity is completed. Either a hard copy or electronic version of the notices can be submitted. If the construction activity is covered by the CGP, the notices can be submitted to the following addresses:

Regular U.S. Mail Delivery

Stormwater Notice of Intent
U.S. EPA - Ariel Rios Building
Mail Code 4203M
U.S. EPA
1200 Pennsylvania Ave., NW
Washington, DC 20460

Overnight/Express Mail Delivery

Stormwater Notice of Intent
U.S. EPA - East Building, Room 7420
U.S. EPA
1201 Constitution Ave., NW
Washington, DC 20004

To complete an electronic NOI (eNOI), follow the instructions on the following EPA web site: <http://cfpub.epa.gov/npdes/stormwater/enoi.cfm>.

- A **SWPPP** must be developed for each construction project and it must be prepared prior to submitting the NOI. The SWPPP must identify all potential sources of stormwater pollution and the practices that will be used to reduce that pollution. Samples of construction SWPPPs can be found at: <http://www.cicacenter.org/swppp.html>.
- Construction activities (i.e., the initial disturbance of soils associated with clearing, grading, excavation activities, or other construction activities) may not begin until seven days after the completed **NOI** is posted on EPA's web site at <http://cfpub.epa.gov/npdes/stormwater/noi/noisearch.cfm>. Therefore, the certifying official should submit the electronic NOI form at <http://cfpub.epa.gov/npdes/stormwater/enoi.cfm> approximately 10 days prior to the scheduled start of construction activities. (When submitting by mail, allow additional time for EPA receipt and review.) The certifying official may be either the site owner or operator. The site operator is defined above.
- The NOI form includes Endangered Species Act information that also must be completed prior to NOI submission. If there are concerns about endangered or threatened species, EPA may delay the authorization of the CGP permit coverage (and therefore the construction start) until the concerns are addressed.
- Operators must follow the pollution prevention practices outlined in the SWPPP, including inspection and maintenance of control structures.

- Operators should keep records together by attaching the following to the SWPPP: a copy of the NOI, the EPA NOI receipt/confirmation, inspection reports, and plan amendments.
- Operators must submit a **NOT** (found in Appendix F of the CGP and on-line at http://www.epa.gov/npdes/pubs/cgp_appendixf.pdf) to EPA within 30 days after one or more of the following:
 - Final stabilization has been achieved on all portions of the site for which the permittee is responsible,
 - Another operator/permittee assumes control over all areas of the site that have not received final stabilization,
 - Coverage has been obtained under an individual or alternative NPDES permit, or
 - For residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner.

Attachment A. States, Indian Country, and Territories Where the EPA Construction General Permit (CGP) Applies

State or Territory Name	Is EPA the Permitting Authority (a,b)?	Areas Where EPA is the Permitting Authority / Permit Number	Additional Permit Conditions (c)?	State-Specific Stormwater Links
Alabama	For Indian Country only	Indian Country construction activities in Region 4 must use the Region 4 Construction General Permit. (http://www.epa.gov/npdes/pubs/cgp-reg4.pdf).	No	http://www.cicacenter.org/swrl.cfm?st=AL
Alaska	Yes	The State of Alaska (except Indian Country) Permit number: AKR100000 Indian Country within the State of Alaska Permit Number: AKR100001	Yes	http://www.cicacenter.org/swrl.cfm?st=AK
American Samoa	Yes	The Island of American Samoa Permit Number: ASR100000	Yes	
Arizona	For Indian Country only	Indian country within the State of Arizona, as well as Navajo Reservation lands in New Mexico and Utah Permit Number: AZR100001	Yes	http://www.cicacenter.org/swrl.cfm?st=AZ
Arkansas	No	The State of Arkansas is the NPDES Permitting Authority for all regulated discharges.	No	http://www.cicacenter.org/swrl.cfm?st=AR
California	For Indian Country only	Indian Country within the State of California Permit Number: CAR100001	No	http://www.cicacenter.org/swrl.cfm?st=CA
Colorado	For Indian Country and federal facilities only	Indian Country within the State of Colorado, as well as the portion of the Ute Mountain Reservation located in New Mexico Permit Number: COR100001 Federal facilities in the State of Colorado, except those located on Indian Country Permit Number: COR10000F	No	http://www.cicacenter.org/swrl.cfm?st=CO
Connecticut	For Indian Country only	Indian Country in the State of Connecticut Permit Number: CTR100001	No	http://www.cicacenter.org/swrl.cfm?st=CT
Delaware	For federal facilities only	Federal facilities in the State of Delaware Permit Number: DER10000F	No	http://www.cicacenter.org/swrl.cfm?st=DE
District of Columbia	Yes	The District of Columbia Permit Number: DCR100000	No	http://www.cicacenter.org/swrl.cfm?st=DC

**Attachment A. States, Indian Country, and Territories Where the EPA
Construction General Permit (CGP) Applies (Continued)**

State or Territory Name	Is EPA the Permitting Authority (a,b)?	Areas Where EPA is the Permitting Authority / Permit Number	Additional Permit Conditions (c)?	State-Specific Stormwater Links
Florida	For Indian Country only	Indian Country construction activities in Region 4 must use the Region 4 Construction General Permit. (http://www.epa.gov/npdes/pubs/cgp-reg4.pdf).	No	http://www.cicacenter.org/swrl.cfm?st=FL
Georgia	No	The State of Georgia is the NPDES Permitting Authority for all regulated discharges.	No	http://www.cicacenter.org/swrl.cfm?st=GA
Guam	Yes	The Island of Guam Permit Number: GUR100000	No	
Hawaii	No	The State of Hawaii is the NPDES Permitting Authority for all regulated discharges.	No	http://www.cicacenter.org/swrl.cfm?st=HI
Idaho	Yes	The State of Idaho (except Indian Country) Permit Number: IDR100000 Indian Country within the State of Idaho, except Duck Valley Reservation lands Permit Number: IDR10000I Duck Valley Reservation lands are covered under the Nevada permit NVR10000I.	Yes	http://www.cicacenter.org/swrl.cfm?st=ID
Illinois	No	The State of Illinois is the NPDES Permitting Authority for all regulated discharges.	No	http://www.cicacenter.org/swrl.cfm?st=IL
Indiana	No	The State of Indiana is the NPDES Permitting Authority for all regulated discharges.	No	http://www.cicacenter.org/swrl.cfm?st=IN
Iowa	For Indian Country only	Indian Country within the State of Iowa Permit Number: IAR10000I	No	http://www.cicacenter.org/swrl.cfm?st=IA
Johnston Atoll	Yes	The Island of Johnston Atoll Permit Number: JAR100000	No	
Kansas	For Indian Country only	Indian Country within the State of Kansas Permit Number: KSR10000I	No	http://www.cicacenter.org/swrl.cfm?st=KS

**Attachment A. States, Indian Country, and Territories Where the EPA
Construction General Permit (CGP) Applies (Continued)**

State or Territory Name	Is EPA the Permitting Authority (a,b)?	Areas Where EPA is the Permitting Authority / Permit Number	Additional Permit Conditions (c)?	State-Specific Stormwater Links
Kentucky	No	The State of Kentucky is the NPDES Permitting Authority for all regulated discharges.	No	http://www.cicacenter.org/swrl.cfm?st=KY
Louisiana	For Indian Country only	Indian Country within the State of Louisiana Permit Number: LAR15000I	No	http://www.cicacenter.org/swrl.cfm?st=LA
Maine	No	The State of Maine is the NPDES Permitting Authority for all regulated discharges.	No	http://www.cicacenter.org/swrl.cfm?st=ME
Maryland	No	The State of Maryland is the NPDES Permitting Authority for all regulated discharges.	No	http://www.cicacenter.org/swrl.cfm?st=MD
Massachusetts	Yes	Commonwealth of Massachusetts (except Indian Country) Permit Number: MAR100000 Indian Country within the Commonwealth of Massachusetts Permit Number: MAR10000I	Yes	http://www.cicacenter.org/swrl.cfm?st=MA
Michigan	For Indian Country only	Indian Country within the State of Michigan Permit Number: MIR10000I	No	http://www.cicacenter.org/swrl.cfm?st=MI
Midway Islands	Yes	The Islands of Midway Island and Wake Island Permit Number: MWR100000	No	
Minnesota	For Indian Country only	Indian Country within the State of Minnesota Permit Number: MNR10000I	No	http://www.cicacenter.org/swrl.cfm?st=MN
Mississippi	For Indian Country only	Indian Country construction activities in Region 4 must use the Region 4 Construction General Permit. (http://www.epa.gov/npdes/pubs/cgp-reg4.pdf).	No	http://www.cicacenter.org/swrl.cfm?st=MS
Missouri	No	The State of Missouri is the NPDES Permitting Authority for all regulated discharges.	No	http://www.cicacenter.org/swrl.cfm?st=MO
Montana	For Indian Country only	Indian Country within the State of Montana Permit Number: MTR10000I	Yes	http://www.cicacenter.org/swrl.cfm?st=MT

**Attachment A. States, Indian Country, and Territories Where the EPA
Construction General Permit (CGP) Applies (Continued)**

State or Territory Name	Is EPA the Permitting Authority (a,b)?	Areas Where EPA is the Permitting Authority / Permit Number	Additional Permit Conditions (c)?	State-Specific Stormwater Links
Nebraska	For Indian Country only	Indian Country within the State of Nebraska, except Pine Ridge Reservation lands Permit Number: NER10000I The Pine Ridge Reservation lands are covered under the South Dakota Permit SDR10000I.	No	http://www.cicacenter.org/swrl.cfm?st=NE
Nevada	For Indian Country only	Indian Country within the State of Nevada, as well as the Duck Valley Reservation in Idaho, the Fort McDermitt Reservation in Oregon and the Goshute Reservation in Utah Permit Number: NVR10000I	No	http://www.cicacenter.org/swrl.cfm?st=NV
New Hampshire	Yes	State of New Hampshire Permit Number: NHR100000	Yes	http://www.cicacenter.org/swrl.cfm?st=NH
New Jersey	No	The State of New Jersey is the NPDES Permitting Authority for all regulated discharges.	No	http://www.cicacenter.org/swrl.cfm?st=NJ
New Mexico	Yes	The State of New Mexico (except Indian Country) Permit Number: NMR150000 Indian Country within the State of New Mexico, except Navajo Reservation Lands that are covered under Arizona permit AZR10000I and Ute Mountain Reservation Lands that are covered under Colorado permit COR10000I Permit Number: NMR15000I	No	http://www.cicacenter.org/swrl.cfm?st=NM
New York	For Indian Country only	Indian Country within the State of New York Permit Number: NYR10000I	Yes	http://www.cicacenter.org/swrl.cfm?st=NY
North Carolina	For Indian Country only	Indian Country construction activities in Region 4 must use the Region 4 Construction General Permit. (http://www.epa.gov/npdes/pubs/cgp-reg4.pdf).	No	http://www.cicacenter.org/swrl.cfm?st=NC

**Attachment A. States, Indian Country, and Territories Where the EPA
Construction General Permit (CGP) Applies (Continued)**

State or Territory Name	Is EPA the Permitting Authority (a,b)?	Areas Where EPA is the Permitting Authority / Permit Number	Additional Permit Conditions (c)?	State-Specific Stormwater Links
North Dakota	For Indian Country only	Indian Country within the State of North Dakota, as well as that portion of the Standing Rock Reservation located in South Dakota (except for the portion of the lands within the former boundaries of the Lake Traverse Reservation, which is covered under South Dakota permit SDR10000I listed below) Permit Number: NDR10000I	No	http://www.cicacenter.org/swrl.cfm?st=ND
Northern Mariana Islands	Yes	Commonwealth of the Northern Mariana Islands Permit Number: NIR100000	Yes	
Ohio	No	The State of Ohio is the NPDES Permitting Authority for all regulated discharges.	No	http://www.cicacenter.org/swrl.cfm?st=OH
Oklahoma	For Indian Country and specific discharges only	Indian Country within the State of Oklahoma Permit Number: OKR15000I Discharges in the State of Oklahoma that are not under the authority of the Oklahoma Department of Environmental Quality, including activities associated with oil and gas exploration, drilling, operations, and pipelines (includes SIC Groups 13 and 46, and SIC codes 492 and 5171), and point source discharges associated with agricultural production, services, and silviculture (includes SIC Groups 01, 02, 07, 08, 09) Permit Number: OKR15000F	No	http://www.cicacenter.org/swrl.cfm?st=OK
Oregon	For Indian Country only	Indian Country within the State of Oregon, except Fort McDermitt Reservation lands Permit Number: ORR10000I Fort McDermitt Reservation lands are covered under the Nevada Permit NVR10000I.	Yes	http://www.cicacenter.org/swrl.cfm?st=OR

**Attachment A. States, Indian Country, and Territories Where the EPA
Construction General Permit (CGP) Applies (Continued)**

State or Territory Name	Is EPA the Permitting Authority (a,b)?	Areas Where EPA is the Permitting Authority / Permit Number	Additional Permit Conditions (c)?	State-Specific Stormwater Links
Pennsylvania	No	The State of Pennsylvania is the NPDES Permitting Authority for all regulated discharges.	No	http://www.cicacenter.org/swrl.cfm?st=PA
Puerto Rico	Yes	The Commonwealth of Puerto Rico Permit Number: PRR100000	No	
Rhode Island	For Indian Country only	Indian Country within the State of Rhode Island Permit Number: RIR10000I	No	http://www.cicacenter.org/swrl.cfm?st=RI
South Carolina	No	The State of South Carolina is the NPDES Permitting Authority for all regulated discharges.	No	http://www.cicacenter.org/swrl.cfm?st=SC
South Dakota	For Indian Country only	Indian Country within the State of South Dakota, as well as the portion of the Pine Ridge Reservation located in Nebraska and the portion of the lands within the former boundaries of the Lake Traverse Reservation located in North Dakota (except for the Standing Rock Reservation, which is covered under North Dakota permit NDR10000I listed above) Permit Number: SDR10000I	No	http://www.cicacenter.org/swrl.cfm?st=SD
Tennessee	No	The State of Tennessee is the NPDES Permitting Authority for all regulated discharges.	No	http://www.cicacenter.org/swrl.cfm?st=TN
Texas	For Indian Country and specific discharges only	Indian Country within the State of Texas Permit Number: TXR15000I Discharges in the State of Texas that are not under the authority of the Texas Commission on Environmental Quality (formerly TNRCC), including activities associated with the exploration, development, or production of oil or gas or geothermal resources, including transportation of crude oil or natural gas by pipeline Permit Number: TXR15000F	No	http://www.cicacenter.org/swrl.cfm?st=TX

**Attachment A. States, Indian Country, and Territories Where the EPA
Construction General Permit (CGP) Applies (Continued)**

State or Territory Name	Is EPA the Permitting Authority (a,b)?	Areas Where EPA is the Permitting Authority / Permit Number	Additional Permit Conditions (c)?	State-Specific Stormwater Links
Utah	For Indian Country only	Indian Country within the State of Utah, except Goshute and Navajo Reservation lands Permit Number: UTR10000I Goshute Reservation lands are covered under the Nevada Permit NVR10000I. Navajo Reservation lands are covered under the Arizona Permit AZR10000I.	No	http://www.cicacenter.org/swrl.cfm?st=UT
Vermont	For federal facilities only	Federal facilities in the State of Vermont Permit Number: VTR10000F	No	http://www.cicacenter.org/swrl.cfm?st=VT
Virgin Islands	No	The Virgin Islands is the NPDES Permitting Authority for all regulated discharges.	No	
Virginia	No	The State of Virginia is the NPDES Permitting Authority for all regulated discharges.	No	http://www.cicacenter.org/swrl.cfm?st=VA
Wake Island	Yes	The Islands of Midway Island and Wake Island Permit Number: MWR100000	No	
Washington	For Indian Country and federal facilities only	Federal facilities in the State of Washington, except those located on Indian country Permit Number: WAR10000F Indian country within the State of Washington Permit Number: WAR10000I	Yes	http://www.cicacenter.org/swrl.cfm?st=WA
West Virginia	No	The State of West Virginia is the NPDES Permitting Authority for all regulated discharges.	No	http://www.cicacenter.org/swrl.cfm?st=WV
Wisconsin	For Indian Country only	Indian Country within the State of Wisconsin, except the Sokaogon Chippewa (Mole Lake) Community Permit Number: WIR10000I	No	http://www.cicacenter.org/swrl.cfm?st=WI

**Attachment A. States, Indian Country, and Territories Where the EPA
Construction General Permit (CGP) Applies (Continued)**

State or Territory Name	Is EPA the Permitting Authority (a,b)?	Areas Where EPA is the Permitting Authority / Permit Number	Additional Permit Conditions (c)?	State-Specific Stormwater Links
Wyoming	For Indian Country only	Indian Country within the State of Wyoming Permit Number: WYR100001	No	http://www.cicacenter.org/swrl.cfm ?st=WY

(a) For updates to the CGP coverage, go to: <http://cfpub.epa.gov/npdes/stormwater/authorizationstatus.cfm>.

(b) Permit information for areas where EPA is *not* the permitting authority is available at: <http://www.cicacenter.org/swp2.html>.

(c) See Part 9 of the CGP for additional permit conditions (http://www.epa.gov/npdes/pubs/cgp2003_entirepermit.pdf).

Appendix S – Depletion Calculations

Red Mesa Depletion Calculations

Daily existing production:	325 bwpd	
Incremental production:	180 bwpd	(6 wells @ 30 bwpd - very high est
Total water production:	505 bwpd	
Annual produced water volume:	184,325 bbls	
Equivalent volume in cubic feet:	1,034,911.15 cubic feet	
Equivalent volume in acre-feet:	23.76 Acre-feet	

Red Mesa Field

Runoff coefficients:

Impervious acreage
Pervious acreage
Impervious coeff
Pervious coeff
Existing site coefficient

Impervious acreage
pervious acreage
Impervious coeff
pervious coeff
New site coefficient

138 acres total project

Appendix T – Training Curriculum

Stormwater Management Plan Training Program
Red Mesa Holdings, LLC
Red Mesa Field
Marvel, Colorado
La Plata County

Target Audience: Employees and Contractors working at Red Mesa Field

Duration: 4 hours

Equipment Required: Digital projector for PowerPoint training. Computer with MS Office PowerPoint. Projection screen.

Training Goals:

The goals of this training session are:

1. Familiarize all employees and contractors with the provisions of the field SWMP.
2. Inform all employees and contractors of the construction, monitoring and reporting requirements of the SWMP.
3. Familiarize all employees and contractors with the basic Best Management Practices (BMP's) employed in the SWMP, their purpose and construction practices.

Training Sequence:

1. Introduction to the Red Mesa SWMP
 - a. Plan overview
 - i. Applies to entire field
 - ii. Plan for existing production locations
 - iii. Plan for new drilling/production locations
 - b. Specific requirements
 - i. Inspection frequency
 - ii. Documentation
 - iii. Daily/weekly/monthly observation
2. Erosion control BMP's
 - a. Describe BMP
 - b. Discuss application
 - c. Inspection/failure points
3. Sediment control BMP's
 - a. Describe BMP
 - b. Discuss application
 - c. Inspection/failure points
4. Non-stormwater BMP's
 - a. Describe BMP
 - b. Discuss application
 - c. Inspection/failure points

Training Sequence (continued)

5. Good housekeeping BMP's
 - a. Describe BMP
 - b. Discuss application
 - c. Inspection/failure points
6. Routine procedures and activities
 - a. Production team
 - b. Contractors
 - c. Site supervisors
 - i. Construction
 - ii. Drilling
 - iii. Workover/Completion
 - iv. Other well work
7. Emergency procedures
 - a. Immediate action/reporting
 - b. Schedule maintenance
 - c. Record action taken
8. Review of training

Training will consist of a series of PowerPoint presentations following the above cited general sequence.