

Construction Stormwater Application and Forms Manual

1200-C NPDES General Permit

December 2015



State of Oregon
Department of
Environmental
Quality

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restoring, maintaining and
enhancing the quality of
Oregon's air, land and
water

1200-C Construction Application and Forms

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Introduction

This guidance is intended to provide you with information about the federal stormwater regulations as they pertain to construction activities in Oregon. It is not intended to give you any detailed information on erosion and sediment control measures.

Background

In November 1990, the federal Environmental Protection Agency (EPA) adopted regulations pertaining to stormwater discharges into surface water bodies ([40 Code of Federal Regulations §122](#)). At this time, the regulations required that National Pollutant Discharge Elimination System (NPDES) permits be obtained for construction activities, including clearing, grading, and excavation, that disturb five (5) or more acres of land. Permits were also required for developments that disturb at least five acres over a period of time.

On December 8, 1999, EPA adopted the Phase II regulations that require NPDES permits for construction activities that disturb one or more acres of land, including smaller sites that are less than one acre that are part of a larger common plan of development. For more information on these regulations, please visit EPA's Stormwater website at:

http://cfpub1.epa.gov/npdes/regs.cfm?program_id=6 or
http://www.epa.gov/npdes/pubs/sw_qanda_construction.pdf.

The Department of Environmental Quality (DEQ) has developed NPDES Stormwater Discharge General Permit No. 1200-C to cover these activities. Oregon Administrative Rules (OAR) 340-045-0015 and 0033(5) require all owners or operators responsible for these activities to register under this permit or obtain an individual permit.

On December 1, 2010, DEQ revised the 1200-C Permit that was adopted pursuant to Oregon Revised Statute (ORS) 468B.050 and Section 402 of the Federal Clean Water Act. You may obtain a copy of the permit from a DEQ regional office (see Tables 1 through 3: DEQ Main Regional Offices, p. iii through v.) or visit: <http://www.deq.state.or.us/wq/wqpermit/docs/general/npdes1200c/permit.pdf>

This permit does not authorize in-water or riparian work regulated by the Federal Clean Water Act Section 404-permit program. These types of activities are regulated by the Oregon Department of State Lands, website: <http://www.oregon.gov/DSL/index.shtml>, U.S. Army Corp of Engineers, website: <http://www.usace.army.mil/Home.aspx> and the Department of Environmental Quality Section 401 certification program, website: <http://www.deq.state.or.us/wq/sec401cert/removalfill.htm>.

Unless specifically authorized by this permit, by another National Pollutant Discharge Elimination System (NPDES) or Water Pollution Control Facilities (WPCF) permit, or by OAR, any other direct or indirect discharge to waters of the state is prohibited, including discharges to an underground injection control (UIC) system.

Does Your Construction Site Need a Permit?

Please answer the following questions:

1. Does your construction project disturb one or more acres of land through clearing, grading, excavating, or stockpiling of fill material, does it disturb less than one acre but is part of a larger common plan of development or sale (for example, a subdivision that was developed after November 30, 2010) that ultimately disturbs one acre or more? Remember to count the acreage of the entire project whether in a single or in a multiphase project. This applies even if you are responsible for only a small portion (less than one acre per phase) of the larger project planned over time.

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2. Is there any possibility that stormwater could run off your site during construction and into surface waters or conveyance systems leading to surface waters of the state? In many cases, the answer to this question is *yes*. However, if the topography and location (such as an area where the conveyance system discharges to drywells) of your site is such that there is no possibility that rainfall or snowmelt could leave the site or enter a waterway, you do not need permit coverage.

If you answered “*yes*” to both of these questions, your construction site needs permit coverage. Coverage may be available through the 1200-CN (see).below).

Which Agricultural and Forestry Construction Activities Need a Permit

Following EPA guidelines (as stated in 40 CFR 122.3(e)), pollutants from nonpoint source agricultural and silvicultural activities, including runoff from orchards, cultivated crops, pastures, range lands, and forest lands, with the exception of Confined Animal Feeding Operations (CAFOs) as defined at: http://arcweb.sos.state.or.us/pages/rules/oars_600/oar_603/603_074.html, are exempt under the stormwater regulations. CAFOs must register for the Oregon CAFO National Pollutant Discharge Elimination System General Permit 01-2009. Information on Oregon’s CAFO program is available at <http://www.oregon.gov/ODA/programs/NaturalResources/Pages/CAFO.aspx>.

This exemption does not extend to the construction of buildings. Construction of any building, areas around the building, and access roads to those buildings that disturbs 1 acre or more of agricultural or agriculture-related operations must obtain coverage under a construction permit for stormwater discharges.

Note: If a dewatering treatment system is to be used it must be approved by DEQ or Agent. Use of a filtering media alone during the November through May period is insufficient in many soils.

Where to submit your application

The 1200-CN

If your site is located within those jurisdictions located in Table 1 and is in the size range listed, contact the local government entity (city, service district, county, etc.) for information on what they will require. The local government entity will administer the construction project under their local codes and the site is automatically covered under the NPDES 1200-CN Permit. The local jurisdiction will give you a copy of the 1200-CN Permit with your local permit. You must comply with the 1200-CN Permit, but you do not need to apply to DEQ for a permit.

1200-C Administered by Agents

If your site is not eligible for the 1200-CN, but is in the jurisdiction of one of the Agents listed in Table 2, the Agent will administer the construction project under the NPDES 1200-C Permit. Submit your application for coverage under the NPDES 1200-C Permit to the appropriate Agent listed in Table 2.

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1200-C Administered by DEQ

DEQ administers the 1200-C for all other sites (those not eligible for the 1200-CN and not in areas covered by Agents). Submit your application for coverage under the NPDES 1200-C Permit to the appropriate DEQ Regional Office shown in Figure 1 and listed in Table 3

Table 1. Local Government Entities

Permit Issuance Government Entities for Construction Sites of 1 to 5 Disturbed Acres (1200-CN Permit)		
City of Albany Public Works 333 Broadalbin Street SW Albany, OR 97321	City of Corvallis P.O. Box 1083 Corvallis, OR 97339-1083	City of Eugene Public Works 99W. 10th Avenue Eugene, OR 97401
City of Milwaukie 6101 SE Johnson Creek Blvd. Milwaukie, OR 97206	City of Springfield - Public Works Engineering Division 225 Fifth Street Springfield, OR 97477	City of West Linn West Linn, OR 97068
City of Wilsonville Wilsonville, OR 97070	Multnomah County 1600 SE 190th Ave Portland, OR 97233-5910 Unincorporated portions of Multnomah County	Lane County Public Works Waste Management Division 3100 E. 17th Avenue, Eugene, OR 97403 Within the MS4 boundary
Clackamas County Water Environmental Services 150 Beaver Creek Road Oregon City, OR 97045 Unincorporated Clackamas County and areas within the Cities of Rivergrove and Gladstone	Clean Water Services 2550 SW Hillsboro Highway Hillsboro, OR 97123 Includes Banks, Beaverton, Cornelius, Durham, Forest Grove, Gaston, Hillsboro, King City, North Plains, Sherwood, Tigard, Tualatin, and portions of Washington County	Rogue Valley Sewer Services 138 West Vilas Road, PO Box 3130 Central Point, OR 97502 Includes Central Point, Phoenix, Talent, White City and portions of Jackson County
Permit Issuance Government Entities for Construction Sites of 1 to 5 Disturbed Acres (1200-CN Permit)		
City of Gresham Environmental Services Dept. Watershed Management Div. 1333 NW Eastman Pkwy. Gresham, OR 97030	City of Troutdale Public Works Department 342 SW 4 th St. Troutdale, OR 97060	City of Wood Village 2055 NE 238 th Dr. Wood Village, OR 97060

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Table 3. DEQ Regional Offices

<p>DEQ Northwest Region 700 Lloyd Building at 700 NE Multnomah St., Suite #600, Portland, OR 97232 503-229-5263 or 1-800-452-4011</p>	<p>DEQ Western Region 165 East Seventh Avenue, Ste 100 Eugene, OR 97401 541-687-7326 or 1-800-844-8467</p>	<p>DEQ Eastern Region 800 SE Emigrant Avenue, Ste 330 Pendleton, OR 97801 541-278-4605 or 1-800-304-3513</p>
<p>Northwest Region Counties: Clackamas, Clatsop, Columbia, Multnomah, Tillamook, Washington</p>	<p>Western Region Counties Benton, Coos, Curry, Douglas, Jackson, Josephine, Lane, Lincoln, Linn, Marion, Polk, Yamhill</p>	<p>Eastern Region Counties Baker, Crook, Deschutes, Gilliam, Grant, Harney, Hood River, Jefferson, Klamath, Lake, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, Wasco, Wheeler</p>

What Does the 1200-C Permit Require?

The 1200-C Permit requires permittees to prepare an Erosion and Sediment Control Plan (ESCP) and incorporate Best Management Practices (BMPs) into their land disturbing construction work. BMPs are used on the project site to prevent or minimize erosion and control sediment runoff from the site.

The permit focuses on preventing pollution from erosion and runoff. In addition, the permit requires permittees to inspect and maintain their controls to ensure they are working properly to prevent erosion and sediment runoff from leaving the site. Also, permittees must meet with the following requirements:

- Do not cause a violation of the state’s in-stream surface water quality standards (Schedule A.10)
- If your construction project has the potential to discharge to a portion of a waterbody that is listed for turbidity or sedimentation on the most recently EPA-approved Oregon 303(d) list or that have an established Total Maximum Daily Load (TMDL) for sedimentation or turbidity (available at www.deq.state.or.us/WQ/assessment/assessment.htm), you must implement one or more of the BMPs listed below to control and treat sediment and turbidity. The selected BMP(s) must be identified in the ESCP as addressing this condition of the permit, and the rationale for choosing the selected BMP(s) must also be provided. (Schedule A.11)
 - a. Compost berms, compost blankets, or compost socks;
 - b. Erosion control mats;
 - c. Tackifiers used in combination with perimeter sediment control BMPs;
 - d. Established vegetated buffers sized at 50 feet (horizontally) plus 25 feet (horizontally) per 5 degrees of slope;
 - e. Water treatment by electro-coagulation, flocculation, or filtration; and/or
 - f. Other substantially equivalent sediment or turbidity BMP approved by DEQ or Agent.
- If a waters of the state is within the project site or within 50 feet of the project boundary, and a natural buffer exists within 50 feet of the water of the state, the ESCP must delineate and protect this area with orange fencing or flagging and maintain existing buffer until completion of project. All discharge must be filtered prior to entering the natural buffer to avoid sediment build up. If scour is an issue, an energy dissipater may need to be installed.

Natural Buffer means, for the purposes of this permit, an area of undisturbed natural cover surrounding surface waters within which construction activities are restricted. Natural cover includes the natural vegetation, exposed rock, and barren ground that existed prior to commencement of earth-disturbing activities.

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If project will reduce natural buffer zone under 50 feet of waters of the state, the ESCP must include one or more of the following BMPs to control and treat sediment and turbidity:

- a. Compost berms, compost blankets, or compost socks;
 - b. Erosion control mats;
 - c. Tackifiers used in combination with perimeter sediment control BMPs;
 - d. Water treatment by electro-coagulation, flocculation, filtration; or
 - e. Other substantially equivalent sediment or turbidity BMP approved by DEQ or Agent.
- Prevent significant amounts of sediment from entering surface waters (Schedule A.8.b). The following conditions describe significant amounts of sediment:
 - Earth slides or mud flows;
 - Concentrated flows of stormwater such as rills, rivulets or channels that cause erosion when such flows are not filtered or settled to remove sediment;
 - Turbid flows of stormwater that are not filtered or settled to remove turbidity;
 - Deposits of sediment at the construction site in areas that drain to unprotected stormwater inlets, or catch basins that discharge to surface waters. Inlets and catch basins with failing sediment controls due to lack of maintenance or inadequate design are considered unprotected;
 - Deposits of sediment from the construction site on public or private streets outside of the permitted construction activity; or
 - Deposits of sediment from the construction site on any adjacent property outside of the permitted construction activity.
 - If significant amounts of sediment or turbidity are visibly detected in: 1) the discharge to a conveyance system leading to surface waters; 2) the discharge to surface waters 50 feet downstream; or 3) the discharge in surface waters at any location where more than one-half of the width of the receiving surface waters is affected, the permit registrant must take following corrective action (Schedule A.13.b):
 - Immediately, but no later than 24 hours after initial detection, take corrective actions or implement additional effective BMPs until the significant amounts of sediment or turbidity are no longer visually detectable.
 - Evaluate the ESCP to determine the cause of the discharge. Submit a report to DEQ or Agent within ten (10) calendar days of the discharge that includes a description of the discharge, the correction actions taken to cease the discharge, and other items as described in Schedule A.13.b.
 - Submit to DEQ or Agent ESCP revisions, if revisions were required to prevent and control erosion and sediment discharges.
 - Document in the inspection records the corrective actions taken.
 - The permit registrant is authorized to discharge the following stormwater discharges subject to compliance with the terms and conditions of this permit (Schedule A.4):
 - Stormwater associated with construction activity, from support activities at the construction site (e.g., concrete or asphalt operations, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) provided:
 - The support activity is directly related to the construction site and with construction activity; not a commercial operation serving multiple unrelated construction projects, and does not operate beyond the completion of the construction activity; and
 - Appropriate controls and measures are identified in an ESCP covering the discharges from the support activity areas.

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- The following non-stormwater discharges to surface water are authorized provided they are identified in the ESCP and all necessary controls are implemented to minimize sediment transport (Schedule A.5):
 - Water from emergency firefighting activities;
 - Fire hydrant flushings;
 - Potable water including water line flushing;
 - Vehicle washing and external building washing that does not use solvents, detergents or hot water;
 - Pavement wash waters where stockpiled material, spills or leaks of toxic or hazardous materials have not occurred (unless all stockpiled and spilled material has been removed) and where solvents, detergents or hot water are not used. Directing pavement wash waters into any surface water, storm drain inlet, or stormwater conveyance is prohibited, unless the conveyance is connected to a sediment basin, sediment trap, or similarly effective control;
 - Water used to control dust;
 - Air conditioning or compressor condensate;
 - Construction dewatering activities (including groundwater dewatering and well drilling discharge associated with the registered construction activity), provided that:
 - The water is land applied in a way that results in complete infiltration with no potential to discharge to a surface water of the state, or
 - Best Management Practices (BMPs) or a treatment system approved by DEQ or Agent is used to ensure compliance with discharge and water quality requirements (see 9.d);
 - Foundation or footing drains where flows are not contaminated with process materials such as solvents; and
 - Landscape irrigation.

For other non-stormwater discharges, a separate permit may be needed. The disposal of wastes to surface waters or on-site is not authorized by this permit. The permit registrant must submit a separate permit application for such discharges.

Key permit compliance elements include:

- Prepare an ESCP that contains the required plan elements (Schedule A.12).
- Read the permit and keep copies of the permit and the most up-to-date ESCP on-site at all times.
- Implement the BMPs in the ESCP according to sequence of construction events (Schedule A.8.c and Schedule A.9).
- If there are changes to project design, conditions, schedule, BMPs or other elements of the project, revise the ESCP and submit the revisions to DEQ or Agent (Schedule A.12.c).
- Visually inspect BMPs daily when stormwater runoff, including runoff from snowmelt, is occurring and at least once every two (2) weeks, regardless of whether stormwater runoff is occurring. (Schedule B.1.b. of the permit).
- Document all monitoring and inspections, and keep documentation on-site and updated (Schedule B).

Permit Application

Who Needs to Apply for Permit?

The “owner” or “operator” needs to apply for permit. The operator is the person or entity that has operational control over the construction plans or day-to-day activities that are necessary to implement erosion and sediment control measures and other Best Management Practices (BMPs).

Operators may include:

- Owners
- General contractors
- Subcontractors
- Local government entity

It is the responsibility of the operator to develop and implement an Erosion and Sediment Control Plan (ESCP) and maintain all BMPs during each stage of the project when the site has unstable soil that may erode and discharge turbid or sediment laden stormwater runoff to surface waters of the State (Schedule A.8.a. & b). Note: If permit conditions are violated, DEQ may take enforcement action against the permit applicant (Schedule F.A.1).

Obtaining a Permit Application

To obtain permit coverage contact your local DEQ office, or go to DEQ’s website:

<http://www.deq.state.or.us/wq/stormwater/constappl.htm> Instructions are provided with the application form.

Application Steps

Note: DEQ has contracted with several local jurisdictions known as “Agents” or “local government entities” to make it easier for developers and builders to apply for a permit. If your project is located in one of the areas (see Tables 1 and 2), please contact the Agent or local government entity for their application forms, fees, and procedures.

These jurisdictions have chosen to act as DEQ's Agent or, in the case of those sites that are less than five acres, to permit them per their local stormwater codes and issue the 1200-C Permit or 1200-CN Permit as applicable, to make it easier for developers and builders to comply with the regulations. In most cases, the 1200-C Agent will use DEQ’s application form and the 1200-CN jurisdiction will use their own form, but please check with them first. Please note that a Service District or County may or may not cover the municipalities within their boundaries and may cover multiple counties in the case of Service Districts. Please check with the County or Service District or other government entity before submitting the application materials to verify where to send the materials.

1. Read the 1200-C Construction Stormwater General Permit and local government construction regulations. A copy of the permit, is available here:
<http://www.deq.state.or.us/wq/wqpermit/docs/general/npdes1200c/permit.pdf>
2. Develop an Erosion and Sediment Control Plan (ESCP) for your construction project/site.
3. Complete the DEQ NPDES #1200-C Permit Application Form or the equivalent local jurisdiction form and Land Use Compatibility Statement (LUCS).
4. Obtain signoff of the LUCS by the local planning authority.

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5. Submit the completed Permit Application form, LUCS, and ESCP to the appropriate DEQ regional office for the county where your project is located or to the Agent office or local government entity as applicable.

Permit Fees

Submit the appropriate permit fees to DEQ, Agent or local government entity as applicable at the time you apply for new permit coverage.

If you are submitting your application to DEQ, please visit DEQ's website at: <http://www.deq.state.or.us/wq/wqpermit/stminfo.htm> for the current fees. Make checks payable to the Department of Environmental Quality. If you send your application to a DEQ Agent or other local government entity, pay the specific application fee charged by the Agent or entity. Make checks payable to the Agent or entity. Please contact the Agent or local government entity to determine the fee.

After you receive your permit coverage, DEQ will invoice you for annual permit fees for the NPDES 1200-C Permit only each additional year after the first year that your permit coverage is effect. Please note that you will be invoiced these fees even if your project is finished unless you notify DEQ and terminate your coverage under the permit. Please see *Section C, Transfer or Termination of Permit Coverage* for more information.

Submitting a Complete Application

For your application to be accepted, you need to submit the following *at least thirty (30) days* before beginning any soil disturbance:

- ✓ Completed Application Form including the Narrative Part I, & II if applicable
- ✓ Approved Land Use Compatibility Statement (LUCS)
- ✓ Erosion and Sediment Control Plan (ESCP); one hard full sized copies and one pdf electronic copy
- ✓ Fees

Processing the Application

Once you submit the application packet (application form, Land Use Compatibility Statement, Erosion and Sediment Control Plan, fees), DEQ or its Agent or the local government entity will review the forms to make sure the application is complete. DEQ will return any incomplete application with a list of missing information.

Is My Project Subject to Public Review?

All projects disturbing five (5) or more acres are subject to public review. A public review period of 14 calendar days will begin after DEQ or its Agent has determined that your application is complete.

What is the Public Review Process?

DEQ will post a notification on its website that the application and ESCP are available for public review at a DEQ regional office depending on where the project is located. Please note that some Agents may also make these materials available for public review at their office. The public will have 14 calendar days to submit comments to DEQ about the application and plan.

After the public comment period, DEQ will review the comments and determine if the ESCP is adequate and whether or not the NPDES 1200-C Permit should cover this project. Based on public comments received, DEQ or its Agent may request you to change the ESCP or apply for coverage under an individual permit.

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Note: Comments regarding local land use issues need to be addressed in a local land use public notice and hearing and are outside the jurisdiction of DEQ. The public comment period is to provide the opportunity for the public to address potential water quality issues related to the construction phase of this particular site only.

Tracking Application Status

You may track your application status at: <http://www.deq.state.or.us/permittracker>. You can search by using your permit's Facility Number (DEQ File #) or the Facility Name (Common Name of the site). Once assignment of permit coverage occurs, this website will no longer provide valid information to changes in the permit coverage.

December 14, 2020, Expiration Date of the 1200-C Permit

Prior to permit expiration, DEQ will notify you of the appropriate procedures, including submitting a permit renewal application and a revised ESCP, if applicable to continue permit coverage. Because permit coverage may expire if a renewal application is not received, it is imperative that you keep your contact information (particularly your e-mail address and telephone number) up to date. Failure to pay the annual fee may result in permit coverage termination.

Contacts for Questions

If you have any questions regarding the information provided here, please contact the appropriate Regional DEQ Office or DEQ Agent Office (Figure 1 and Table 3) and ask for stormwater staff in the case of the DEQ offices.

Preparing the ESCP

The ESCP must contain the following elements: (NPDES 1200-C Permit Schedule A.12.b)

- Local government requirements.
- Inspection information including inspector(s) and qualification(s), if known. If not known, contact DEQ regional staff or local jurisdiction for assistance.
- Narrative site description.
- Implementation schedule and description of BMPs.
- Site map and drawings (see ESCP Part III form for complete list of items to include).

There are two options for submitting a complete ESCP:

Option 1: Fill out DEQ ESCP forms (Parts I-III) and provide ESCP Drawings

- Complete ESCP Part I: Narrative description of the site and soils present, inspector qualifications, etc.
- Complete ESCP Part II: Best Management Practices (BMPs) Implementation Schedule.
- Complete ESCP Part III and ESCP Drawings: Prepare drawings that include a site (project location) map and site drawing(s) showing location and details of the BMPs to be used. Use ESCP form Part III to verify that you placed the required information on the drawings.
- Include the Standard Notes on the drawings (as listed in ESCP form part III).

Option 2: Consolidating all of the required information (Parts I-III) into the ESCP Drawings

- Complete the ESCP Drawings and include the following information on the drawings:
- Site location map.
- Site description and soils present, inspector qualifications.
- BMP implementation schedule initialed by the engineer of architect.
- The Standard Notes (as listed in ESCP form part III), plus construction notes on the drawings which show pre-construction and post-construction contours or surface flow directions.
- BMP locations and installation and/or construction details.

An example set of drawings that meet these requirements is located on DEQ's website at:

<http://www.deq.state.or.us/wq/stormwater/constappl.htm>. In addition, ESCP form Part III may be used as a tool to verify that you placed the required information on the drawings.

Part I: ESCP Narrative Form

There is information about your project that may be best provided in a text form rather than on the ESCP Drawings. If you submit the information on the Narrative Form (Option 1), do not also include this information on the drawings (Option 2) per the Example Drawings. Please fill out the ESCP form Part I.

Part II: BMPs and ESCP Implementation Schedule Form

The ESCP form Part II includes an extensive table of BMPs. Your project may only require some of these BMPs to effectively manage erosion and sediment control. DEQ expects each project to use BMPs that are appropriate for specific conditions, such as project type (residential, commercial or industrial), local site conditions (rainfall, soils types, slopes, presence of streams, wetlands, ditches and other waters of the state, drinking water wells, UICs, and so on) or surrounding properties. Some of BMPs, such as sediment fences, will require construction; some require maintenance or site inspections and reporting. List BMPs that require construction in the drawings, and include installation details or drawing notes as appropriate. Use the Oregon Department of Environmental Quality

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ESCP form Part II “BMPs and ESCP Implementation Schedule” to identify your selected BMPs for the project and a schedule for implementing these BMPs.

Transfer of Termination of Permit Coverage

Can I Transfer My Permit to Another Operator?

Permit coverage may be transferred from one operator to another provided the new operator assumes legal responsibility for the entire project (Permit Registration, Condition 3). Both the previous operator and new operator must complete and submit the “Name Change and/or Permit Transfer” form and applicable fee to DEQ or Agent. This form may be found at:

<http://www.deq.state.or.us/wq/stormwater/constappl.htm>

When and How do I Terminate Permit Coverage?

You may submit a “Notice of Termination” form (Attachment III) after completion of construction activities and final stabilization of the site (Schedule A.3.a.-b.). This form and additional instructions may be found at: <http://www.deq.state.or.us/wq/stormwater/constappl.htm>

Can I Terminate Coverage Before the Entire Project is Finished?

You can submit a Notice of Termination form (including photo documentation) for your portion of a site providing:

1. You have achieved final stabilization (see below); or
2. Another operator has assumed control of any remaining areas that have not been stabilized and has obtained permit coverage.

Final Stabilization Requirements

Before termination of the permit coverage, all soil disturbance activities must be complete and the site must have undergone final stabilization (no bare soil, vegetation is established). Removal and disposal of all temporary erosion and sediment controls must have occurred unless a local ordinance requires otherwise. No further soil disturbances will occur in conjunction with the registrant’s project work.

For projects which have sold off some of the lots (common plan of development for subdivisions where new permit coverage occurred after November 31, 2010)

- (1) All portions of the original common plan of development or sale that have been sold must either meet final stabilization criteria (1200-C Permit Schedule B.3.c.i – B.3.c.vi) or be covered by the 1200-C or 1200-CN; and
- (2) The permittee must submit an update of the ESCP depicting new site boundaries (based on the sale of portions of the common plan) for the stabilized remaining area covered by the permit for which the permittee is requesting termination of permit coverage.

ESCP Revisions

Conditions That Require Submittal of ESCP Updates

Keep copies of all ESCP revisions on site. Submission of all ESCP revisions is not required. ESCP revisions must be submitted only if they are made for any of the reasons listed below:

1. Changes for Emergency Situations

When immediate correction actions are required to *cease the discharge of significant amounts of sediment* from entering surface waters or nearby properties, the ESCP revisions must identify the correction actions taken to cease the discharge, if such actions require a change to the ESCP or a change in the method(s) of implementing the ESCP, (for example, increased inspection frequency). (Definition of significant amounts of sediment is in permit condition A.8.b). Submit the ESCP revisions to DEQ or Agent within ten (10) calendar days of the discharge identifying the correction actions taken to cease the discharge. Approval of the revisions by DEQ or its Agent prior to implementation of corrective actions is not required.

2. Change (increase or decrease) in the size of the project.

Submit revisions to DEQ or its Agent at least 10 days before implementing the revisions. An increase in the size of the project that is less than 5 acres to an area 5 acres or more may result in a public notice requirement. If the permit registrant does not receive a response from DEQ or its Agent within ten (10) days of receipt, the proposed revisions are deemed approved.

3. Change (increase or decrease) in the size or location of disturbed areas.

Submit revisions to DEQ or its Agent at least 10 days before implementing the revisions. An increase in the disturbed area from less than 5 acres to a disturbed area of 5 acres or more may result in a public notice requirement. If the permit registrant does not receive a response from DEQ or its Agent within ten (10) days of receipt, the proposed revisions are deemed approved.

4. Change to BMPs (for example, type, design or location).

Submit revisions when changes in the project design that may affect stormwater discharges, local conditions, or project schedule (for example, schedule delays postpone earthwork to wet weather season so additional controls are needed). In addition, submit changes (such as type or design) to the BMPs identified in the ESCP, their location, maintenance required, and any other revisions necessary to prevent and control erosion and sediment runoff. Submit revisions to DEQ or its Agent at least 10 days before implementing the revisions. If the permit registrant does not receive a response from DEQ or its Agent within ten (10) days of receipt, the proposed revisions are deemed approved.

5. Change in the erosion and sediment control inspector.

Submit name, contact information and qualifications to DEQ or its Agent. If the permit registrant does not receive a response from DEQ or its Agent within ten (10) days of receipt, the inspector(s) are deemed approved.

6. Changes that DEQ or Agent Requests

DEQ or Agent may require the permit registrant to submit ESCP revisions at any time if the ESCP is inadequate to prevent the discharge of significant amounts of sediment or turbidity to surface waters or to conveyance systems that discharge to surface waters.

There are three ways to inform DEQ or an Agent of revisions to the ESCP:

1. Submit ESCP revisions by email to DEQ or Agent when revisions to the ESCP are minimal and identify in the email the particular changes. Submit only portions of the ESCP that have changed.
2. Submit the revisions by redlining the copy of the original ESCP or drawings. Submit only drawings that have changed.
3. When the ESCP requires extensive revisions, submit the entire revised ESCP.

Please keep copies of all ESCP revisions on site.

Inspections

Inspections must be conducted by a person who:

- is knowledgeable in the principles and practice of erosion and sediment controls,
- possesses the skills to assess conditions at the construction site that could impact stormwater quality,
- is knowledgeable in the correct installation of the erosion and sediment controls, and
- is able to assess the effectiveness of any sediment and erosion control measures selected to control the quality of stormwater discharges from the construction activity.

Beginning January 1, 2017, for projects that are five or more acres, inspections must be conducted by a person certified in an erosion and sediment control program that has been approved by DEQ. DEQ has approved the following programs:

- a. Certified Professional in Erosion and Sediment Control,
- b. Certified Professional in Storm Water Quality,
- c. Washington State Certified Erosion and Sediment Control Lead, or
- d. Rogue Valley Sewer Services Erosion and Sediment Control Certification.

Visual Monitoring Requirement

All areas of the site disturbed by construction activity must be inspected to ensure that BMPs are in working order. Locations where vehicles enter or exit the site must be inspected for evidence of off-site sediment tracking as well as areas used for storage of materials that are exposed to precipitation for evidence of spillage or other potential to contaminate stormwater runoff.

In addition, inspect all discharge point(s) identified in the ESCP for evidence of or the potential for the discharge of pollutants, and to ascertain whether erosion and sediment control measures are effective in preventing significant impacts to surface waters. Where discharge points are inaccessible, nearby downstream locations must be inspected to the extent that such inspections are practicable.

All ESCP controls and practices must be inspected according to the following schedule:

Site Condition	Minimum Frequency
1. Active period	Daily when stormwater runoff, including runoff from snowmelt, is occurring At least once every two (2) weeks, regardless of whether stormwater runoff is occurring
2. Prior to the site becoming inactive or in anticipation of site inaccessibility	Once to ensure that erosion and sediment control measure are in working order. Any necessary maintenance and repair must be made prior to leaving the site.
3. Inactive periods greater than fourteen (14) consecutive calendar days	Once every month.
4. Periods during which the site is inaccessible due to inclement weather	If practical, inspections must occur daily at a relevant and accessible discharge point or downstream location.
5. Periods during which discharge is unlikely due to frozen conditions.	Monthly. Resume monitoring immediately upon melt, or when weather conditions make discharges likely.

1200-C Construction Application and Forms Manual

Recordkeeping Requirements

Document all visual monitoring in an on-site logbook. If there are no findings, simply record the inspection date, inspector's name, weather conditions, file number and construction site name. In addition, record any findings, including:

1. At the designated discharge location(s):
 - a. Where to make observations:
 - (1) At the discharge location if the discharge is to a conveyance system leading to surface waters;
 - (2) From the discharge point to 50 feet downstream if the discharge is to surface waters; and
 - (3) At any location where more than one-half of the width of the receiving surface water is affected.
 - b. How to make observations:
 - (1) For turbidity and color, describe any apparent color and the clarity of the discharge, and any apparent difference in comparison with the surface waters.
 - (2) Describe any sheen or floating material, or record that it is absent. If present, it could indicate concern about a possible spill or leakage from vehicles or materials storage.
2. If a site is inaccessible due to inclement weather, record the inspections noted at a relevant discharge point or downstream location, if practical.
3. Location(s) of BMPs that need to be maintained, inspections of all BMPs, including erosion and sediment controls, chemical and waste controls, locations where vehicles enter and exit the site, status of areas that employ temporary or final stabilization control, soil stockpile area, and non-stormwater pollution (e.g., paints, oils, fuels, adhesives) controls.
4. Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;
5. Location(s) where additional BMPs are needed that did not exist at the time of inspection; and
6. Corrective action required and implementation dates.
7. All revisions and documentation of reasons for changes or modifications to the ESCP and other corrective measures.

All inspection records and monitoring results must be kept on site and maintained by the permit registrant. The records must list the construction site name as it appears on the registrant's permit and the file or site number. These records must be made available to DEQ, Agent, or local municipality upon request. These records must be delivered or made available to DEQ within three (3) working days of request. These inspection records and monitoring results must be retained for at least three (3) years after project completion.

In addition, a copy of the ESCP and revision(s) must be retained on site and made available on request to the DEQ, Agent, or the local municipality. During inactive periods of greater than seven (7) consecutive calendar days, the ESCP must be retained by the permit registrant but does not need to be at the construction site.

Additional Resources

If you are not familiar with methods used to control erosion and sediment, refer to DEQ's *Construction Stormwater Erosion and Sediment Control Manual* and *Construction Stormwater Best Management Practices Manual*.

State of Oregon
 Department of Environmental Quality

Memorandum

To: Administrative File
 Proposed NPDES General Permit 1200-C and 1200-CN
 Operations Division

Date: October 14, 2015

From: Erich Brandstetter, Operations Division

Subject: National Pollutant Discharge Elimination System (NPDES) General Permit 1200-C and 1200-CN Renewal Evaluation Report 2015

BACKGROUND

The Department of Environmental Quality is proposing changes to the NPDES 1200-C and 1200-CN general permits for construction stormwater discharges issued by DEQ that became effective in November 2010 and expire on November 30, 2015. These permits cover the discharge of stormwater runoff from construction activities including clearing, grading, excavation, and stockpiling that will disturb one or more acres and may discharge to surface waters of the state or conveyance systems leading to surface waters of the state. Also included are activities that disturb less than one acre that are part of a common plan of development or sale, if the larger common plan of development or sale will ultimately disturb one acre or more and may discharge to surface waters or conveyance systems leading to surface waters of the state. The construction activities covered are identical to those identified in 40 Code of Federal Regulations (CFR) §122.26.

Currently, there are approximately 1,200 construction projects throughout the state registered under the 1200-C permit. In 2014, approximately 300 new construction projects registered under the 1200-C permit.

SUMMARY OF KEY CHANGES TO THE 2015 PERMITS

Most of the conditions in the expiring 1200-C and 1200-CN permits were retained in the proposed permits, although the permits were substantially reworded to improve clarity. In addition, the following key changes were made:

- **Application Submission:** Changes were made to reduce paper use and streamline DEQ's review and recordkeeping processes.
- **Buffer Zone:** CFR 450.21(a)(6) states, "Provide and maintain natural buffers around waters of the United States, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce pollutant discharges, unless infeasible." To implement this natural buffer requirement in the proposed 1200-C permit, construction within 50 feet of a water of the state must protect any natural buffer (if one exists), or, if the buffer is impacted, must increase BMPs.
- **Concrete BMPs:** Changes were made to clarify requirements regarding concrete waste and washing.
- **Inspector Qualifications:** All 1200-C permit registrants must have a designated erosion and sediment control inspector. The expiring permit has very broad training and experience requirements for these inspectors. To improve on this, the proposed permit requires inspectors for projects that disturb 5 or more acres to have certification through a program that has been approved by DEQ. To provide time for registrants and inspectors to receive training, this requirement will not take effect until 1/1/2017. The following programs can be used to meet this requirement: Certified Professional in Erosion and Sediment Control, Certified Professional in Storm Water Quality, Washington State Certified Erosion and Sediment Control Lead, Rogue Valley Sewer Services Erosion and Sediment Control Certification.

- **Vegetative Stabilization:** Language was added to define “final vegetative stabilization” as “established and uniform vegetation (evenly distributed without large bare areas), which provides 70 percent or more coverage.”
- **Small lot permit coverage:** Small lot coverage has no annual fee and therefore little reason for operators to formally terminate permit coverage. To address this in the proposed 1200-C permit, small lot coverage will be valid for 2 (two) calendar years from date issued.
- **Common plan termination:** In the proposed 1200-C permit, the requirement that sold lots be stable or permitted before termination of the common plan was removed. This was done to alleviate the common plan registrant from the burden of trying to manage lots which were sold and no longer under the common plan registrant’s control.
- **Inspection frequency:** For consistency, inspection frequency in the 1200-CN was changed to match that in the 1200-C. Also, a provision to temporarily stop inspections during frozen conditions was added.
- **1200-CN jurisdictions:** Jurisdictions in which the 1200-CN applies will not be listed in the 1200-CN permit. Instead, DEQ will maintain a list of jurisdictions in which the 1200-CN permit applies on the DEQ web page. In addition, the permit describes the process (including public notice) for adding new jurisdictions to the list.

More information on these proposed changes to the permit is provided below. DEQ made these changes based on input from stakeholders, and evaluation of the permit by DEQ staff. These revisions reflect improvements or enhancements that will result in more efficient and effective implementation of permit requirements and additional control of sediment and erosion from construction activities that may discharge to surface waters of the state during storm events.

ANTIDegradation REVIEW

DEQ’s antidegradation policy in OAR 340-041-0004 requires DEQ to conduct a review of a proposed permit to determine if the proposed discharges to surface waters will protect existing water quality and to ensure protection of existing and designated uses. The stormwater controls required in the proposed 1200-C general permit are expected to result in discharges that will comply with Oregon’s water quality standards, and protect designated and existing uses. The Erosion and Sediment Control Plan (ESCP) and performance requirements in the permit are designed to ensure water quality standards will be met, including Oregon’s water quality standard for turbidity, which prohibits a greater than 10% increase in turbidity compared to an upstream control point. Because no requirements in the proposed 1200-C permit are being relaxed or eliminated from the previous applicable permit, DEQ has determined that the renewal of this general permit will not result in increased pollutant loads.

DEQ believes that there will not be a net increase in pollution loads from these new construction activities. The water quality standard for turbidity effectively prohibits more than a "de minimis" increase in in-stream turbidity. Permit BMPs are designed to ensure that water quality standards are met, because the permit requires minimization of sediment discharges and preservation of existing riparian buffers.

Where construction activities may discharge to a water that is impaired due to turbidity or sediment, increased BMPs are required (1200-C permit section A.11). DEQ may notify operators of such new projects or operators of existing projects with significantly increased discharges that additional analyses, stormwater controls or other permit conditions are necessary to comply with the applicable antidegradation requirements, or notify the permittee that an individual permit application is necessary. DEQ does not anticipate increased discharges or pollutant loads will result from issuance of the proposed permit. The number of permit applications for new construction activity each year is generally balanced by the cessation of construction activity at sites receiving permit coverage in previous years, and recent years have seen a dramatic decline in new permit registrations, from nearly 600 in 2007 to less than 300 in 2014. Although construction activities are inherently variable, DEQ has no reason to believe that the

amount of construction activity covered under the proposed permit will increase significantly above the highest levels experienced under the previous permits.

PART I. CHANGES IN THE 1200-CN

The expiring 1200-CN permit contains two sections that describe coverage (one on the cover page and one at the beginning of Schedule A). To improve clarity, these sections were combined, and reworded to emphasize that operators must obtain a local permit authorizing construction in order to obtain coverage under the 1200-CN. The remaining sections of the 1200-CN permit (Schedule A, sections 3-7; Schedule B and Schedule D) place requirements on owners and operators engaging in construction under the 1200-CN permit, and correspond to similar sections in the 1200-C permit. The expiring 1200-CN requires inspections less frequently than the 1200-C. DEQ received feedback that this was confusing, and so the frequency was changed to match the frequency in the 1200-C permit. In addition, where changes were made in the 1200-C, the same or similar changes were made in the corresponding sections of the 1200-CN. See the “CHANGES IN THE 1200-C” section below for details on these changes.

In the proposed permit, 1200-CN coverage will be available in the same jurisdictions that were listed in the expiring permit. DEQ reviewed the erosion and sediment control programs in 2010, and found them to be adequate. Because each 1200-CN Jurisdiction has an Inter-Governmental Agreement with DEQ that requires notification of DEQ regarding changes to the erosion and sediment control program, a complete review of current programs was not needed. However, these jurisdictions were required to submit to DEQ information regarding how the local program provides protection when construction is near surface waters of the state. This was done to ensure that the local programs provide protection that is as protective as the proposed new buffer zone requirements (the local program does not need to have the same requirements, but needs to provide adequate protection). At this time, DEQ has received responses from 6 of the 15 jurisdictions. The responses have been reviewed and accepted. Responses from the remaining 9 jurisdictions will be received and reviewed before the final permit is issued.

PART II. CHANGES IN THE 1200-C

SOURCES COVERED BY THIS PERMIT

The cover page of the 1200-C permit describes the types of discharges eligible for permit coverage. Upon issuance, the cover page will also include the expiration date that will not exceed five years from the date of issuance. No changes were made to the cover page of the 1200-C permit.

SCHEDULE A - CONTROLS AND LIMITATIONS

REGISTERING NEW CONSTRUCTION ACTIVITIES (1200-C, SECTION A.1)

This section addresses registration and public notice for new construction activities that are submitting permit applications to DEQ. For new activities, applications must be submitted at least 30 days before beginning construction activities unless otherwise approved by DEQ. A 2-week public notice is required for construction activities that disturb 5 or more acres during the life of the project. These requirements were not changed in the proposed permit.

Changes were made to the application process to reduce paper use and streamline DEQ’s review and recordkeeping:

- The expiring permit requires submission of two hardcopies of the Erosion and Sediment Control Plan for projects that will disturb 5 or more acres. This requirement was reduced to one hardcopy, consistent with submission for projects that disturb less than 5 acres. This change was made to reduce paper use.

- The expiring permit requires electronic submission of the ESCP for projects that will disturb one or more acres, but no other electronic submission. This requirement was changed to require electronic submission of entire application (ESCP, application form, and Land Use Compatibility Statement (LUCS)). This change was made to streamline DEQ's review and recordkeeping processes.
- The requirement to submit a hardcopy of the application form and LUCS for projects that will disturb one or more acres was not changed.
- No changes were made to the small lot application process. However, small lot permit coverage is limited to two years in the proposed permit. Small lot projects that continue beyond two years will be required to re-submit an application and pay an additional fee. Because there is no annual fee for small lot coverage, there is little motivation for operators to formally terminate permit coverage. The two-year limit is being instituted because most small lot construction is completed in less than two years, and the time limit provides a means for closing out coverage on these projects.

RENEWING PERMIT COVERAGE (1200-C, SECTION A.2)

Owners or operators of existing construction projects who expect their construction activities to continue beyond November 30, 2015 must submit renewal applications by November 30, 2015. If a renewal application is not submitted by this date, the owner or operator must submit a new permit application for activities continuing beyond November 30, 2015. The proposed permit contains the same requirements, with dates revised to correspond to the new permit period.

TRANSFER OF PERMIT REGISTRATION (1200-C, SECTION A.3)

Minor editorial changes were made to this section.

AUTHORIZED STORMWATER DISCHARGES (1200-C, SECTION A.4; and 1200-CN, SECTION A.5)

No changes were made to this section.

AUTHORIZED NON-STORMWATER DISCHARGES (1200-C, SECTION A.5; and 1200-CN, SECTION A.6)

Additional non-stormwater discharges were added, to be consistent with EPA's construction stormwater general permit:

- Water from emergency firefighting activities,
- Fire hydrant flushings,
- Water used to control dust, and
- Air conditioning or compressor condensate.

LIMITATIONS ON COVERAGE (1200-C, SECTION A.6; and 1200-CN SECTION A.7)

Some local regulators have reported that it can be challenging to convince operators of the importance of managing concrete waste. Therefore, concrete truck wash-out, hydro-demolition water, and saw-cutting slurry were added to the list of prohibited discharges. Also, further specificity was added to 1200-C Section A.8.

CONTROL MEASURES (1200-C SECTION A.7)

This section addresses erosion and sediment control BMPs (Best Management Practices). The overall approach of the permit is to provide flexibility to the registrant in the development of the ESCP, to have DEQ or Agent review the ESCP, and then the terms of the ESCP are enforceable requirements (A.8.a). Changes were made throughout this section to clarify the flexibility in BMP selection, and also to clarify the instances in which there are prescriptive requirements. The prescriptive requirements are:

- It is the permit registrant's responsibility to ensure that soils are stable during rain events at all times of the year.

- Do not remove temporary sediment control practices until permanent vegetation or other cover of exposed areas is established.
- Identify the type of seed mix (percentages of the various seeds of annuals, perennials and clover) and other plantings used to establish temporary or permanent vegetative cover.
- If all construction activities cease at the site for thirty (30) days or more, the entire site must be stabilized using temporary seeding, vegetation, a heavy mulch layer, or another method.
- On any significant portion of the site, if construction activities cease for fourteen (14) calendar days or more, install temporary covering such as blown straw and a tackifier, loose straw, compost mulch, temporary vegetative cover, crushed rock or gravel base.

There are several terms in the expiring permit that refer to conditions associated with terminating permit coverage. To improve clarity, the permit was revised to use only the following three terms:

- Permanent stabilization measures,
- Final vegetative cover, and
- Final stabilization.

These terms are defined in Paragraph D.3. Please see the discussion of Paragraph D.3 for additional information on these terms.

A section was added to address the natural buffer zone requirements of CFR 450.21(a)(6). Oregon is proposing to generally follow the same approach as EPA. The proposed permit uses the same buffer width used in EPA's construction general permit: a 50-foot width between covered activities and any water of the state. For the purposes of the permit, natural buffer is defined as "an area of undisturbed natural cover surrounding surface waters within which construction activities are restricted. Natural cover includes the natural vegetation, exposed rock, and barren ground that existed prior to commencement of earth-disturbing activities." Natural vegetation, in turn, is defined as, "vegetation that occurs spontaneously without regular management, maintenance, or species introductions or removals. For purposes of this permit, this includes invasive species." If any portion of a natural buffer is disturbed, the operator must compensate by implementing additional BMPs beyond those otherwise required by the permit. However, operators are not required to create a vegetative buffer if one does not exist. There are additional exemptions for agriculture, Clean Water Act Section 404-permitted activities, and water-dependent construction (such as a pier, boat ramp or trail).

IMPLEMENTATION OF CONTROL MEASURES (1200-C SECTION A.8)

As in Section A.7, changes were made to clarify terms that refer to conditions associated with terminating permit coverage and to clarify requirements regarding concrete waste and washing. Additional minor changes were made to improve clarity.

BMP MAINTENANCE (1200-C SECTION A.9)

Minor changes were made to improve clarity

IN-STREAM WATER QUALITY STANDARDS (1200-C SECTION A.10)

Paragraph b of this Section was re-written to be consistent with language used in EPA's construction general permit.

TMDL AND 303(d) LISTED WATERBODIES (1200-C SECTION A.11)

Minor changes were made to improve clarity.

EROSION AND SEDIMENT CONTROL PLAN (1200-C SECTION A.12)

The inspector training and experience requirements in the expiring permit are very broad. To improve on this, the proposed permit requires inspectors to be current in one of several specific training programs. In order to phase in this requirement and provide time for the construction industry to prepare, this requirement only applies for inspectors of construction activities that will disturb five (5) or more acres,

and will not become effective until 1/1/2017. DEQ is proposing to accept Certified Professional in Erosion and Sediment Control, Certified Professional in Storm Water Quality, Washington State Certified Erosion and Sediment Control Lead, and Rogue Valley Sewer Services Erosion and Sediment Control Certification. However, the permit includes a provision so that DEQ may approve additional programs without modifying the permit. Training provided by the Oregon Department of Transportation was not included because that training is specific to the 1200-CA permit and may not adequately address all 1200-C issues.

Requirements were added to include any natural buffer zone and planned approach in the narrative site description and site map.

CORRECTIVE ACTIONS (SECTION A.13)

As in the expiring permit, the proposed permit requires corrective actions if there is a significant discharge of sediment (A.8.) or if the construction activity causes or contributes to a violation of water quality standards (A.10). Minor changes to improve clarity were made in this section.

SCHEDULE B MINIMUM MONITORING AND RECORDKEEPING REQUIREMENTS

INSPECTIONS (1200-C and 1200-CN SECTION B.1)

The phrase “visual inspections” was replaced with “visual monitoring” to make failure to do the monitoring a Class I rather than a Class II violation.

Provisions were added to temporarily suspend visual monitoring during frozen conditions.

The documentation and recordkeeping sections were reworded to improve clarity.

SCHEDULE D SPECIAL CONDITIONS

SCHEDULE PRECEDENCE (1200-C AND 1200-CN SECTION 1)

This section was reworded to improve clarity.

OTHER REQUIREMENTS (1200-C AND 1200-CN SECTION 2)

No changes are proposed for this section.

TERMINATION OF PERMIT REGISTRATION (1200-C SECTION 3)

The requirement that sold lots be stable or permitted before termination of a common plan was removed. This was done to alleviate the common plan registrant from the burden of trying to manage lots which were sold and no longer under the common plan registrant’s control.

In addition, there are several terms in the expiring permit that refer to conditions associated with terminating permit coverage. To improve clarity, the permit was revised to use only the following three terms:

- Permanent stabilization measures,
- Final vegetative cover, and
- Final stabilization.

Final stabilization refers to the entire set of site conditions that must be met before termination of permit coverage. It includes that all soil-disturbing activities have ceased, all construction materials and waste have been removed, all disturbed areas are covered by either final vegetative stabilization or permanent stabilization measures, and other criteria.

Permanent stabilization measures are defined as “erosion prevention materials designed to provide long-term protection to underlying soils. This may include but not limited to buildings, paving, riprap, gabions, or geotextiles.”

The expiring permit did not include a definition of final vegetative stabilization (or similar term). The proposed permit uses a definition similar to that in EPA’s construction general permit. It is defined as, “established and uniform (evenly distributed without large bare areas) perennial vegetation, which provides 70 percent or more coverage.” Three exceptions are provided:

- DEQ or Agent may approve less than 70 percent coverage if vegetation is expected to expand, and suitable interim measures (such as mulch or bark) are in place.
- For sites on which it is difficult to establish 70 percent density, the registrant must cover planted or seeded area with bio or photo degradable erosion controls designed to prevent erosion without active maintenance.
- Sites located on agricultural land (for example, pipelines across crop or range land, or staging areas for highway construction) that are restored to their preconstruction agricultural use are not subject to these final vegetative stabilization criteria. Areas disturbed that were not previously used for agricultural activities, and areas that are not being returned to preconstruction agricultural use, must meet the conditions for final vegetative stabilization.

LOCAL PUBLIC AGENCIES ACTING AS DEQ’S AGENT (SECTION 4)

Although the list of functions Agents may be authorized to conduct is not all-inclusive, “enforcement” was added to the list to provide clarity. No other changes were made to this section.

PERMIT-SPECIFIC DEFINITIONS (SECTION 5)

A definition of agricultural land was added.

The definition of conveyance system was reworded to improve clarity. The definition of owner or operator was reworded to improve clarity; this included adding definitions for owner and person.

Definitions of natural buffer and natural vegetation were added (see discussion under Section A.7 for details).

SCHEDULE F – GENERAL CONDITIONS

Schedule F is adopted from 40 CFR Part 122, and includes the general conditions that are applicable to all NPDES permits. It addresses operation and maintenance, monitoring and record keeping, and reporting requirements. DEQ recognizes that a majority of these conditions do not apply to stormwater discharges. Many specifically address industrial and domestic wastewater treatment facilities. However, the stormwater permits are NPDES permits and these conditions are required for all such permits. The previous General Conditions section was replaced by the Industrial General Conditions being used by DEQ as of October 3, 2015.

APPENDIX I: CHANGES MADE IN 2010

This appendix presents the changes made during the 2010 renewal. It is included to provide an ongoing historical record on development of the permits.

SUMMARY OF KEY CHANGES TO THE 2010 PERMIT

Most of the conditions in the expiring 2005 1200-C permit were retained in the 2010 permit. However, the permit has been substantially reorganized and reworded to improve clarity. In addition, the following key changes were made:

- Reducing dual regulation. Pursuant to federal regulations promulgated by EPA (40 § CFR 122.28 (b)(2)(v)), some dischargers may be authorized to discharge under a general permit without submitting a permit application or a notice of intent (NOI) and are automatically covered under the permit. Construction activities that are less than 5 acres that are regulated by a local erosion and sediment control program that has been reviewed by DEQ are eligible for automatic coverage and are not required to submit a permit application to DEQ. These construction activities must meet a different set of requirements in the proposed 1200-C permit. To clarify the distinction between automatically covered construction activities and registered construction activities, the 1200-C permit was re-organized into two similar permits: the 1200-CN for automatically covered construction activities, and the 1200-C for registered construction activities.
- Clarifying requirements for smaller lots that are part of a common plan of development or sale. Changes were made to improve clarity and implementation of requirements that apply to construction activities on lots that are less than one acre and part of a common plan of development or sale, including a process for registering these smaller lots under the permit and terminating the developer's permit coverage.
- Reducing paperwork associated with reporting requirements. Changes were made to improve efficiency and effectiveness in the reporting process, including specifying certain events that trigger a report and simplifying the reporting process.

More information on these changes to the permit is provided below. DEQ made these changes based on input from stakeholders during 2010, and the evaluation of the permit by DEQ staff. These revisions reflect improvements or enhancements that will result in more efficient and effective implementation of permit requirements and additional control of sediment and erosion from construction activities that may discharge to surface waters of the state during storm events.

SOURCES COVERED BY THIS PERMIT

DEQ made minor changes to this section, including a reference to construction activities that are automatically covered under the permit and are not required to submit an application for permit coverage to DEQ.

DEQ also clarified that certain discharges are not authorized by the 1200-C permit (for example, post-construction stormwater, and stormwater associated with certain silvicultural practices).

SCHEDULE A - CONTROLS AND LIMITATIONS FOR STORMWATER DISCHARGES AND EROSION AND SEDIMENT CONTROL PLAN

PART I. AUTOMATICALLY COVERED CONSTRUCTION ACTIVITIES

Background:

Federal general permit regulations provide DEQ with the ability to recognize certain construction activities as being automatically covered under the 1200-CN permit without formally registering for the permit. Specifically, 40 CFR § 122.28 (b)(2)(v) states that some dischargers “may, at the discretion of the Director, be authorized to discharge under a general permit without submitting a notice of intent where the Director finds that a notice of intent requirement would be inappropriate. In making such a finding, the Director shall consider: the type of discharge; the expected nature of the discharge; the potential for toxic and conventional pollutants in the discharges; the expected volume of the discharges; other means of identifying discharges covered by the permit; and the estimated number of discharges to be covered by the permit. The Director shall provide in the public notice of the general permit the reasons for not requiring a notice of intent.” Dischargers who are not required to submit an NOI would automatically receive coverage under the permit for their regulated activities, and would be authorized to discharge in accordance with the permit requirements. EPA most recently used this regulation when it issued the Vessel General Permit (available at http://cfpub.epa.gov/npdes/home.cfm?program_id=350).

To reduce the overlap and redundancy between local construction stormwater programs and state stormwater permitting regulations, certain construction projects located in local jurisdictions in the state are automatically covered under the 1200-CN permit. Automatically covering construction projects in these jurisdictions helps operators by reducing dual permitting. Operators in these jurisdictions are required to meet local stormwater requirements, but are not required to apply for the 1200-CN permit. This will alleviate the construction operator's paperwork, and ease the perceived compliance burden among the regulated industry. This approach will result in strategic use of resources and improvements in environmental protection by state and local jurisdictions.

Performance Measures in Proposed Permit

In addition to meeting the requirements of the local stormwater program, owners or operators of automatically covered construction activities must comply with a set of minimum requirements.

The following performance measure requirements in the 1200-CN permit apply to these projects:

- No significant discharge of sediment or turbidity, and
- Do not cause or contribute to a violation of instream water quality standards.

These performance measures are key requirements in the permit. Construction operators must ensure that they are properly implementing and maintaining BMPs to ensure that erosion is controlled and sediment does not discharge to surface waters during storm events. If a construction operator fails to meet these requirements, DEQ maintains its enforcement authority under the 1200-CN permit and can initiate a formal enforcement action based on a violation of these measures.

Application of Federal Regulations for Automatically Covering Certain Construction Projects:

Table 1 below summarizes DEQ’s application of 40 CFR § 122.28 (b)(2)(v).

Table 1. Summary of DEQ's application of 40 CFR § 122.28 (b)(2)(v)

Issue	Response
The type of discharge	Stormwater runoff from construction activities.
The expected nature of the discharge	Stormwater potentially mixed with sediment from disturbed soils and contamination associated with construction.
The potential for toxic and conventional pollutants in the discharges	Potential to discharge sediment, if proper erosion and sediment control procedures not followed.
The expected volume of the discharges	Volume from maximum size project estimated at 5,000 – 18,000 cubic feet per day.
Other means of identifying discharges covered by the permit	The discharges will be identified and regulated through local programs required by MS4 permits or IGA.
The estimated number of discharges	200-300

Below, DEQ has provided more detail on applying the federal regulations:

The type of discharge

The type of discharge is stormwater runoff from construction activities.

The expected nature of the discharge

The discharge is stormwater potentially mixed with sediment from disturbed soils and contamination associated with construction.

The potential for toxic and conventional pollutants in the discharges

If proper erosion and sediment control practices are not followed, there is potential discharge of sediments to state surface waters. The primary concern other than sediment may be leaking oils or fuels. However, toxic materials are not typically used at construction sites, when they are, BMPs are required to control potential releases, and BMPs for sediment control are likely to control other pollutants. Therefore, the potential for discharge of toxic and conventional pollutants is low, and at low levels.

Automatic coverage does not apply to construction projects that discharge to a waterbody that is listed for turbidity or sedimentation on the most recently EPA-approved Oregon 303(d) list or that has an established Total Maximum Daily Load (TMDL) for sedimentation or turbidity. Construction projects discharging to these waterbodies are required to register for the 1200-C permit and meet all the requirements in the permit.

The expected volume of the discharges

Volume of discharges was estimated using the following process:

1. Estimate typical daily rainfall depth in Oregon.
2. Estimate an extreme rainfall depth in Oregon.
3. Place a limit on the maximum size of disturbance that can be automatically covered.
4. Assuming all rainfall becomes discharge (that is, no rainfall infiltrates or is captured), calculate the discharge volume for the maximum size disturbance.

Step 1: To estimate the volume of discharges, National Weather Service daily rainfall data for 4 years (2007-2010) were obtained for the following stations:

Table 2. Weather Stations

Region	Weather Station ID	Location
North	KORPORTL27	Near 136 th & Division, Portland, OR
Central	WU-Corvallis, OR	Corvallis, OR
	WU-MFNWO3	Corvallis, OR
	WU-KORMONRO2	Monroe, Monroe, OR
South	KRBG	Roseburg, OR
	KORROSEB3	Hucrest, OR

Step 2: The median rainfall was calculated for each region by combining data from all selected stations within each region. Days with little or no rainfall (less than 0.1 inch per day) were excluded from this calculation. Conceptually, this is the typical rainfall for days when there was rain, or the median “rain per wet day.”

In addition, the 95th percentile value was calculated for days with rain (95 percent of the daily rainfall will be less than the 95th percentile rainfall amount). The 95th percentile provides an estimate of an extreme rainfall amount. The results are presented below:

Table 3. Rainfall Estimations

Region	Typical Daily Rainfall (inches)	Extreme Daily Rainfall (inches)
North	0.23	0.86
Central	0.28	0.99
South	0.25	0.87

Because there was little variation between regions, only the largest values (Central Region) were used in subsequent calculations.

Step 3: A disturbed area of less than 5 acres was selected as the limit for construction activities that can be automatically covered, based on the following factors.

- First, 40 CFR § 122.26 (b)(15) defines “small construction” as disturbance less than 5 acres:
“Construction activities including clearing, grading, and excavating that result in land disturbance of equal to or greater than one acre and less than five acres. Small construction activity also includes the disturbance of less than one acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than one and less than five acres.”
- Second, the 1200-C permit requires public notice and comment for construction projects that disturb 5 or more acres.

Step 4: The area of 5 acres was multiplied by the rainfall depths of 0.28 and 0.99 inches, then converted to cubic feet, to obtain a typical daily flow of 5,000 cubic feet per day (38,000 gallons per day), and an extreme flow of 18,000 cubic feet per day (134,000 gallons per day). These are relatively small amounts. For example, 5,000 cubic feet is slightly less than the volume of a semi truck trailer. Actual flows would generally be much less than these estimates due to infiltration.

Other means of identifying discharges covered by the permit

Construction projects located within following areas may be automatically covered under the 1200-CN permit if they meet the elements below:

- Projects within local jurisdictions with MS4 permits.
- Projects that are outside of a jurisdiction’s MS4 boundary, but in areas regulated by the jurisdiction.
- Projects that are regulated by local jurisdictions that do not have MS4 permits, but have construction stormwater programs.

The MS4 permits require jurisdictions to establish and maintain construction stormwater programs, thus ensuring that there is another means of identifying these discharges. In addition, each jurisdiction’s construction stormwater program was reviewed by DEQ to verify that it included the essential elements below:

- Ordinances: the construction program is codified in local ordinance.
- Size of disturbed area: the local ordinances must apply to the range of sizes automatically covered.
- Plan review: the local jurisdiction routinely reviews erosion and sediment control plans.
- Site inspection: the local jurisdiction conducts site inspections.
- Enforcement: the local jurisdiction has enforcement authority in order to respond to violations.
- Required: automatic covering applies to construction activities within the MS4 boundary.

Applying automatic covering outside of a jurisdiction’s MS4 boundary may be accepted if the jurisdiction signs an Inter-governmental Agreement (IGA) with DEQ. This IGA would provide the assurance of “other means of identifying discharges” by committing the jurisdiction to maintain the program, and to notify DEQ in the event of any changes or elimination of the program. In addition, a local government that does not have an MS4 permit may become eligible for automatic covering if their construction stormwater program is adequate and if they establish a similar IGA regarding their program.

The ordinances in some jurisdictions apply only to construction activities that disturb less than one acre. Therefore, automatic covering is provided in two size categories, corresponding to each jurisdiction’s local ordinance:

- Automatic covering of all construction activities that disturb less than 5 acres.
- Automatic covering of construction activities that disturb less than one acre that are part of a common plan of development or sale, if the larger common plan of development or sale will ultimately disturb one acre or more

Jurisdictions with an eligible construction stormwater program that meets the elements above may opt in or out of automatic covering projects within their jurisdiction under the 1200-CN permit. The local jurisdictions listed below have eligible construction stormwater programs and have agreed to participate in the automatic covering approach for regulating construction stormwater projects.

Construction activities that will disturb less than 5 acres:

- Albany
- Corvallis
- Eugene
- Milwaukie
- Springfield
- West Linn
- Wilsonville
- Clackamas County Water Environment Services, within its two service districts Clackamas County Service District #1 and Surface Water Management Agency of Clackamas County

- Rogue Valley Sewer Services, including:
 - Central Point
 - Phoenix
 - Talent
 - Portions of Jackson County in Rogue Valley Sewer Services' MS4 Phase II Permit area
- Clean Water Services, including:
 - Banks
 - Beaverton
 - Cornelius
 - Durham
 - Forest Grove
 - Hillsboro
 - King City
 - North Plains
 - Sherwood
 - Tigard
 - Tualatin
 - Washington County within the Urban Growth Boundary
- Portions of Lane County that are in Lane County's MS4 Phase II Permit area
- Multnomah County

Construction activities that will disturb less than 1 acre:

- Gresham
- Troutdale
- Wood Village

This approach does not add any requirements to the local jurisdictions' construction stormwater programs nor create any additional legal liabilities. The projects within these jurisdictions will be required to meet local construction stormwater requirements as well as the performance measures in the 1200-CN permit. DEQ can assist local jurisdictions with enforcement if these projects fail to meet the performance measures in the proposed 1200-CN permit and local enforcement measures have not resulted in compliance. DEQ also retains the right to require automatically covered construction activities to submit a 1200-C permit application to DEQ when DEQ determines that registration is desirable to ensure protection of water quality.

The estimated number of discharges covered by the permit

To estimate the number of discharges to be automatically covered, DEQ reviewed historical registration data for projects that disturbed less than 5 acres from 2007 to 2010 (Figure 1). The total number of active projects steadily declined during that period. Based on this history, it is reasonable to expect that between 1,000 and 1,500 construction projects that disturb less than 5 acres will be active at any given time during the next permit cycle. This represents all construction throughout the state. The number of construction projects automatically covered will be some fraction of this – those projects that are within the jurisdictions that utilize automatic covering. DEQ estimated that approximately 200-300 projects will be within jurisdictions where automatically covering will be implemented (assuming 20% of these construction projects are within the jurisdictions listed above).

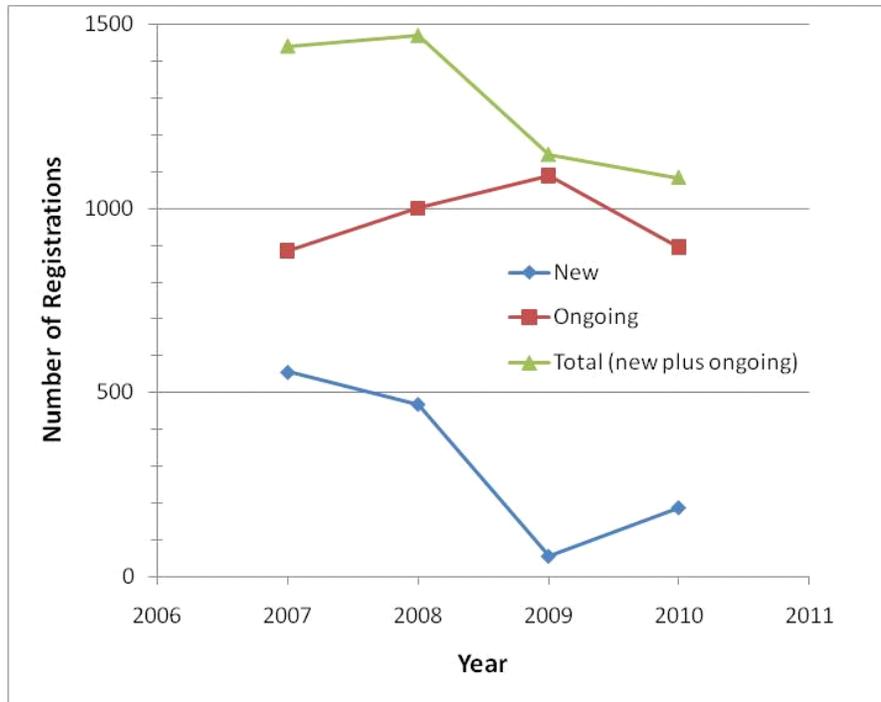


Figure 1. Number of new construction projects registered and the number of ongoing construction projects (ongoing projects are those that were registered in previous years).

Summary of Automatically Covered Construction Projects

The core elements of automatically covered construction projects are:

- Automatically covered construction projects must be less than 5 acres.
- Automatically covered construction projects must be in a jurisdiction with a DEQ-reviewed construction stormwater program that contains the elements described above.
- Automatically covered construction projects must not have a potential to discharge to a waterbody that is 303(d)-listed for turbidity or sedimentation or that has a TMDL for sedimentation or turbidity.
- Operators of automatically covered construction projects do not submit a 1200-CN permit application, including an Erosion and Sediment Control Plan and Land Use Compatibility Statement. Also, these projects do not pay permit fees to DEQ.
- Automatically covered construction projects are required to meet performance measures in the 1200-CN permit:
 - The local jurisdiction must be undergirded by an MS4 permit or an IGA with DEQ.
 - The local jurisdiction must request that construction projects in their jurisdiction be automatically covered. It is not mandatory for local jurisdictions to implement this approach.
 - DEQ retains the right to require automatically covered construction activities to submit a 1200-C permit application to DEQ.

PART II. REGISTERED CONSTRUCTION ACTIVITIES

REGISTERING NEW CONSTRUCTION ACTIVITIES (1200-C SECTION A.1)

Requirements for Lots that are Less Than One Acre and Part of a Common Plan of Development or Sale
 DEQ improved the clarity and implementation of requirements that apply to construction activities on lots that are less than one acre and part of a common plan of development or sale. A new paragraph was added to Section 1 to explain the registration requirements for activities that disturb less than one acre that are part of a common plan of development or sale that will disturb one acre or more.

Applicable fees for construction activities that register for 1200-C permit coverage

The developers will be required to pay DEQ application fees (includes first year annual fee) and subsequent annual permits fees until they terminate the 1200-C permit. Individual lot owners will be required to pay DEQ application fees before beginning construction on their individual lots.

If construction activities are automatically covered by the permit, the developer or individual lot owner is not required to pay DEQ permit fees, but may be required to pay fees imposed by the local jurisdiction.

LIMITATIONS ON COVERAGE (1200-C and 1200-CN SECTION A.6)

A new section was added in response to input from stakeholders. In practical terms, this section does not change requirements, because these discharges have always been implicitly prohibited under the permit. This section simply makes the prohibition explicit and unambiguous. The following discharges are not authorized by the permit: contaminated wash water and discharges contaminated with fuel, and oil or soaps.

CONTROL MEASURES (1200-C SECTION A.7)

Minor revisions were made to improve clarity and to improve consistency with current terminology. In addition, some BMPs were taken out of the permit. This does not imply that these BMPs are prohibited from being used, but was done only to improve consistency with current practices.

Permit registrants are required to implement the BMPs that are appropriate for their site. If they fail to do so, it is a violation of the permit. Permit registrants must also document the BMPs that will be implemented in the Erosion and Sediment Control Plan (ESCP).

TMDL AND 303(d) LISTED WATERBODIES (1200-C SECTION A.11)

The expiring permit provided permit registrants that have the potential to discharge to waterbodies that are listed for turbidity or sedimentation on the most recently EPA-approved Oregon 303(d) list or that have an established Total Maximum Daily Load (TMDL) for sedimentation or turbidity with the option of monitoring their discharge to meet a turbidity benchmark or implementing specific BMPs to control sediment and erosion from their site. During the past permit cycle a small percentage (approximately 1%) of permit registrants discharged to these waterbodies, and no registrants chose the monitoring option. Therefore, this option seems to be an unnecessary complication, and DEQ eliminated it from the permit. DEQ does not believe that this change will relax the permit requirements or result in less water quality protection since the BMPs in the permit are effective at controlling and treating sediment and turbidity.

EROSION AND SEDIMENT CONTROL PLAN (1200-C SECTION A.12)

There were minor changes to the Preparation and Required Elements portions of this section, such as adding “Oregon Certified Engineering Geologist” to the list of professionals that are qualified to prepare the ESCP.

DEQ received the following input from stakeholders and DEQ staff regarding modifying the reporting requirement related to ESCP revisions:

- Too many submissions of revised plans: It is inherent in construction that many minor changes are made to plans. This generates many Action Plans. Resources aren't available to review them all, and many of the changes aren't significant enough to warrant review.
- Submission process not effective: The Action Plan process was often too cumbersome and did not work well for many types of ESCP revisions. A lengthy form was required to document relatively minor changes.

The first comment was addressed by limiting the submission of revisions to a specific list of reasons:

- Part of a Corrective Action.
- Change (increase or decrease) in the size of the project.
- Change (increase or decrease) in the size or location of disturbed areas.

- Change to BMPs (for example, type, design or location).
- Change in erosion and sediment control inspector.

The second comment was addressed by eliminating the Action Plan requirements in the expiring permit and the requirement to submit a form that identifies the changes to the plan. Instead, ESCP revisions will be submitted as revised pages or drawings.

CORRECTIVE ACTIONS (SECTION A.13)

In the new permit registrants submit a corrective action report within 10 days. The report is similar to the Action Plan form. However, the Action Plan form has been eliminated to simplify reporting and to eliminate reporting of unnecessary information.

If the ESCP was modified as part of the corrective actions, ESCP revisions must be submitted as part of the 10-day report. Note that a corrective action does not necessarily require an ESCP revision. Furthermore, while an ESCP revision may be part to a corrective action, the ESCP may be revised for a variety of other reasons (for example, relocation of a site exit). The corrective action and ESCP revision are two separate activities, and may or may not be connected in any particular instance.

SCHEDULE B MINIMUM MONITORING AND RECORDKEEPING REQUIREMENTS

INSPECTIONS (1200-C and 1200-CN SECTION B.1)

A minimum inspection frequency of “at least once every two (2) weeks, regardless of runoff” was added to the 1200-C to help ensure that BMPs are proactively maintained. Inspection frequencies were slightly decreased in the 1200-CN, because the automatically covered construction projects are subject to local requirements.

SCHEDULE D SPECIAL CONDITIONS

TERMINATION OF PERMIT REGISTRATION (SECTION 3)

Permit registrants must meet seven “Final Stabilization Conditions” prior to terminating their coverage under the permit. Five of these were carried over from the expiring permit with minor changes. Two requirements were added:

- All outstanding compliance issues must be resolved. This was added to give DEQ greater authority when operators are out of compliance.
- Photo-documentation that depicts site stabilization must be submitted. It is not always possible for DEQ to inspect sites before termination. Photo-documentation was added to provide DEQ with an alternative to site inspection, when site inspection is not possible.

Also, an option to terminate registration if the project never started has been added. The only requirement is submission of the Notice of Termination.

In addition, DEQ clarified termination requirements for the larger development project (that is, the common plan of development or sale) and the individual lots that are part of the common plan.

The typical common plan of development or sale scenario is a residential subdivision in which a developer purchases the property and is the owner/operator for construction of roads, power, and other infrastructure. The developer then sells portions of the property (“lots”) to other operators who then build houses. The developer may terminate coverage after completion of the infrastructure, but before all of the lot construction is completed. The permit was revised to clarify requirements for this situation. Prior to termination, the following conditions must be met:

1. All portions of the site for which the developer is responsible must meet final stabilization criteria;
2. All portions of the original common plan of development or sale that have been sold must either meet final stabilization criteria or be covered by the 1200-C or 1200-CN; and
3. The owner/operator of the common plan must submit an update of the ESCP depicting new site boundaries (based on the sale of portions of the common plan).

Also, the owner/operator of an individual lot or lots in a common plan of development or sale must obtain permit coverage (under the 1200-C or 1200-CN) prior to any ground disturbing activity.

Implications of this process include:

- The developer can terminate coverage while construction continues on lots that have 1200-C or 1200-CN coverage.
- The developer can terminate coverage prior to selling all the lots.
- The developer can terminate coverage when sold lots do not have a permit, but only if these lots meet final stabilization criteria.
- The developer may not terminate coverage if there is any ground disturbance not covered by the 1200-C or 1200-CN permit, even if it is on a lot that has been sold.
- If the developer will also be doing construction on all or some of the lots, the initial permit application can address this construction.

SCHEDULE F – GENERAL CONDITIONS

Several minor revisions were made to the general conditions to update them to the most current version in use by the DEQ and EPA.

Applying for the 1200-C Construction Stormwater Permit



State of Oregon
Department of
Environmental
Quality

Operations Division
811 SW Sixth Avenue
Portland, OR 97204
Phone: 503-229-5696
800-452-4011
Fax: 503-229-5850
Contact: Erich Brandstetter
www.oregon.gov/DEQ

Background

In Dec. 2016, the Water Quality Administrator for DEQ signed the revised National Pollutant Discharge Elimination System Stormwater Construction General Permit No. 1200-C to be effective starting Dec. 15, 2015. The permit regulates stormwater runoff to surface waters from construction activities that disturb one or more acres in Oregon.

What you need to know

Construction sites disturbing one acre or more must be covered under either the NPDES 1200-C or 1200-CN permit. In addition, construction sites disturbing less than one acre and part of a larger common development plan or sale must be covered under either the 1200-C or 1200-CN permit. Examples of a large common development or sale include a subdivision or possibly a business park.

Permit applications

1. Obtain the application and check to see where to send it.

You can obtain permit application forms on DEQ's [website](#).

If you have questions about the application or do not have access to the internet, please contact the regional DEQ stormwater representative, agent or local government agency, who can provide assistance on the preparation and submittal of the application.

DEQ Agents:

City of Eugene, City of Hermiston, City of Troutdale, Clean Water Services (serving Washington County), Clackamas County Service District #1 and Rogue Valley Sewer Services.

DEQ Regional Offices for Stormwater:

Eugene, Pendleton, Bend and Portland

1200-CN Local Government Agencies:

City of Albany, City of Corvallis, City of Eugene, City of Milwaukie, City of Springfield, City of West Linn, City of Wilsonville, City of Gresham, City of Troutdale, City of Wood Village, Multnomah County, Clackamas County Service District #1 and Surface Water Management Agency of Clackamas County,

Clean Water Services and Rogue Valley Sewer Services.

2. What you submit with your application

For projects that disturb one or more acres, submit one paper copy and one electronic copy of a completed application form, an approved Land Use Compatibility Statement with Findings, if applicable, and a full sized Erosion and Sediment Control Plan. For projects that disturb less than one acre and are part of a larger common plan, submit one paper copy of a completed application form, and a full sized ESCP. These forms and related guidance documents, including the application and ESCP guidance document are available on [DEQ's website](#) or can be obtained at a DEQ regional office or through a DEQ agent.

3. Permit fees

You must submit the appropriate permit fees to DEQ or its Agent at the time you apply for new permit coverage.

Appropriate fees are available on [DEQ's stormwater web pages](#). All stormwater permits charge an application fee and an annual fee upon registration. The registrant will also be billed an annual fee for every year the permit coverage is in effect after the first year. Please note: if submitting a dewatering or active treatment Operating and Maintenance Plan to address contaminants beyond sediment, a disposal system plan review fee may be charged as indicated in Table 70H.

If you are submitting your application to a DEQ agent, please contact the Agent for information on the fees.

4. Processing your application

Once you submit the application materials, DEQ or its Agent will review the forms to make sure the application is complete as well as technically and administratively adequate. DEQ or its Agent will return any incomplete application with a list of missing information.

Please note: An incomplete application (incomplete forms, applications submitted without fees, and so on) will be returned to you and will slow the processing of your permit coverage.

5. Public review for construction sites disturbing five acres or more.

- Projects that have the potential to disturb five acres or more of land will be subject to public review. Applications and Erosion and Sediment Control Plans for these projects will be subject to a 14-calendar day public review and comment period.
- A notice will be posted on [DEQ's website](#) for public notice. The public will have 14-calendar days to review the application materials and submit comments to DEQ about the application and ESCP. The application materials may also be reviewed at the regional DEQ office.
- After the public comment period, DEQ will review the comments and determine if the Erosion and Sediment Control Plan is adequate. DEQ may request that you change the plan based on public comment.
- After accepting the Erosion and Sediment Control Plan, DEQ or its agent will assign the applicant coverage under the 1200-C permit, and will notify all commenters.

For assistance, please contact the DEQ regional stormwater representative in your area.

DEQ regional (stormwater) offices:

Bend: 541-278-4605

Eugene: 541-686-7326

Pendleton: 541-278-4605

Portland: 503-229-5263

Alternative formats

Alternative formats of this document can be made available. For more information call 503-229-5696, Portland, or call toll-free in Oregon at 1-800-452-4011, ext. 5696. Hearing-impaired persons may call 711.



**GENERAL PERMIT
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
STORMWATER DISCHARGE PERMIT**

Oregon Department of Environmental Quality
811 SW Sixth Avenue, Portland OR 97204
Telephone: (503) 229-5279 or 1-800-452-4011 (toll free in Oregon)

Issued pursuant to ORS 468B.050 and Section 402 of the Federal Clean Water Act

AUTOMATICALLY COVERED CONSTRUCTION ACTIVITIES

SOURCES COVERED BY THIS PERMIT:

- Coverage under this permit is not available in all jurisdictions. Coverage under this permit is available only in specific jurisdictions referred to as “1200-CN Jurisdictions.”
- An owner or operator that has received a local permit authorizing construction activities meeting the conditions in Schedule A, conditions 1 or 2 is not required to submit an application for permit coverage to DEQ. The owner or operator must comply with all applicable local jurisdiction permit requirements, codes, and ordinances. The construction activities are automatically covered under the State 1200-CN permit, and are authorized to discharge in accordance with Schedule A, conditions 3 through 6. Construction activities covered under this permit include:
 - Construction activities including clearing, grading, excavation, materials or equipment staging and stockpiling that will disturb one or more acres but less than 5 acres and may discharge to surface waters or conveyance systems leading to surface waters of the state; and
 - Construction activities including clearing, grading, excavation, materials or equipment staging and stockpiling that will disturb less than one acre that are part of a common plan of development or sale if the larger common plan of development or sale will ultimately disturb one acre or more and may discharge to surface waters or conveyance systems leading to surface waters of the state.

DEQ retains the right to require registration (by the owner or operator) of construction activities in these jurisdictions in accordance with the 1200-C permit, when DEQ determines that registration is necessary to ensure protection of water quality.

This permit does not authorize the following:

- In-water or riparian work, that is regulated by other programs and agencies including the Federal Clean Water Act Section 404 permit program, the Oregon Department of State Lands, the Oregon Department of Fish and Wildlife, the U.S. Fish and Wildlife Service, the U.S. Army Corp of Engineers, the National Marine Fisheries Service and the Department of Environmental Quality Section 401 certification program.
- Post-construction stormwater discharges that originate from the site after completion of construction activities and the site has undergone final stabilization.
- Discharges to underground injection control (UIC) systems.

Lydia Emer, Administrator
Operations Division

Effective: December 15, 2015
Expiration Date: December 14, 2020

PERMITTED ACTIVITIES

Until this permit expires, is modified or revoked, the owner/operator of an automatically covered activity is authorized to construct, install, modify, or operate erosion and sediment control measures and stormwater treatment and control facilities, and to discharge stormwater and certain specified non-stormwater discharges to surface waters of the state or conveyance systems leading to surface waters of the state only in conformance with all the requirements, limitations, and conditions set forth in the permit including attached schedules as follows:

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SCHEDULE A CONTROLS AND LIMITATIONS

1. Disturbance Less Than 5 Acres

An owner or operator of construction activities that meet the conditions listed below automatically receives coverage under this permit.

- a. The owner or operator has received a local permit authorizing the construction activities; and
- b. The construction activities are within the jurisdictions listed below; and
 - i. Albany
 - ii. Corvallis
 - iii. Eugene
 - iv. Milwaukie
 - v. Springfield
 - vi. West Linn
 - vii. Wilsonville
 - viii. Clackamas County Water Environment Services, within its two service districts: Clackamas County Service District #1 and the Surface Water Management Agency of Clackamas County.
 - ix. Clean Water Services, including:
 - (1) Banks
 - (2) Beaverton
 - (3) Cornelius
 - (4) Durham
 - (5) Forest Grove
 - (6) Hillsboro
 - (7) King City
 - (8) North Plains
 - (9) Sherwood
 - (10) Tigard
 - (11) Tualatin
 - (12) Washington County within the Urban Growth Boundary
 - x. Portions of Lane County that are in Lane County's MS4 Phase II Permit area
 - xi. Multnomah County (unincorporated portions of the county)
 - xii. Rogue Valley Sewer Services, including:
 - (1) Central Point
 - (2) Phoenix
 - (3) Talent
 - (4) Portions of Jackson County in Rogue Valley Sewer Services' MS4 Phase II Permit area
- c. The construction activity does not have the potential to discharge to a portion of a waterbody listed for turbidity or sedimentation on the most recently EPA-approved Oregon 303(d) list and is not addressed by a Total Maximum Daily Load (TMDL) (listings are available at www.deq.state.or.us/WQ/assessment/assessment.htm); and
- d. Either,
 - i. The construction activities will disturb one or more acres but less than 5 acres over the life of the project; or
 - ii. The construction activities will disturb less than 1 acre and are part of a common plan of development or sale that will ultimately disturb one acre or more.

2. Disturbance Less Than 1 Acre

An owner or operator of construction activities that meet the conditions listed below automatically receives coverage under this permit.

- a. The owner or operator has received a local permit authorizing the construction activities; and
- b. The construction activities are within the jurisdictions listed below; and
 - i. Gresham
 - ii. Troutdale
 - iii. Wood Village
- c. The construction activity does not have the potential to discharge to a portion of a waterbody listed for turbidity or sedimentation on the most recently EPA-approved Oregon 303(d) list and is not addressed by a Total Maximum Daily Load (TMDL) (listings are available at www.deq.state.or.us/WQ/assessment/assessment.htm); and
- d. The construction activities will disturb less than 1 acre and are part of a common plan of development or sale that will ultimately disturb one acre or more.

3. Performance Measures

- a. An owner or operator of automatically covered construction activities must prevent the discharge of significant amounts of sediment to surface waters or conveyance systems leading to surface waters. The following conditions indicate that significant amounts of sediment has left or is likely to leave the site, and are prohibited:
 - i. Earth slides or mud flows;
 - ii. Concentrated flows of stormwater such as rills, rivulets or channels that cause erosion when such flows are not filtered, settled or otherwise treated to remove sediment;
 - iii. Sediment laden or turbid flows of stormwater that are not filtered or settled to remove sediments and turbidity;
 - iv. Deposits of sediment at the construction site in areas that drain to unprotected stormwater inlets or to catch basins that discharge to surface waters. Inlets and catch basins with failing sediment controls due to lack of maintenance or inadequate design are considered unprotected;
 - v. Deposits of sediment from the construction site on any property (including public and private streets) outside of the construction activity covered by this permit. An owner or operator of automatically covered construction activities must not cause or contribute to a violation of in-stream water quality standards.

4. Authorized Stormwater Discharges

Subject to compliance with the terms and conditions of this permit, and provided that all necessary controls are implemented to minimize sediment transport, the following stormwater discharges from construction sites are authorized (unless otherwise prohibited by local ordinances):

- a. Stormwater associated with the automatically covered construction activity described in the “Sources Covered” section of the permit.
- b. Stormwater from support activities at the automatically covered construction site (for example, concrete or asphalt operations, equipment staging yards, material storage areas, excavated material disposal areas and borrow areas) provided:
 - i. The support activity is directly related to the construction site covered by this NPDES permit;
 - ii. The support activity is not a commercial operation serving multiple unrelated construction projects by different owners or operators;
 - iii. The support activity does not operate beyond the completion of the construction activity at the last construction project it supports; and
 - iv. Appropriate control measures are used to ensure compliance with discharge and water quality requirements.

5. Authorized Non-Stormwater Discharges

If the terms and conditions of this permit are met, all necessary controls are implemented to minimize sediment transport, the discharge is not contaminated, and the discharge is not prohibited by local ordinance, the following non-stormwater discharges from construction sites are authorized:

- a. Water from emergency firefighting activities;
- b. Fire hydrant flushings;
- c. Potable water including water line flushing;
- d. Vehicle washing and external building washing that does not use solvents, detergents or hot water;
- e. Pavement wash waters where stockpiled material, spills or leaks of toxic or hazardous materials have not occurred (unless all stockpiled and spilled material has been removed) and where solvents, detergents or hot water are not used. Directing pavement wash waters into any surface water, storm drain inlet, or stormwater conveyance is prohibited, unless the conveyance is connected to a sediment basin, sediment trap, or similarly effective control;
- f. Water used to control dust;
- g. Air conditioning or compressor condensate;
- h. Construction dewatering activities (including groundwater dewatering and well drilling discharge associated with the automatically covered construction activity), provided that:
 - i. The water is land applied in a way that results in complete infiltration with no potential to discharge to a surface water of the state, or
 - ii. Best Management Practices (BMPs) or an approved treatment system is used to ensure compliance with discharge and water quality requirements;
- i. Foundation or footing drains where flows are not contaminated with process materials such as solvents; and
- j. Landscape irrigation.

6. Prohibited Discharges

Discharges of the following are not authorized by this permit:

- a. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
- b. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; and
- c. Soaps or solvents used in vehicle and equipment washing.
- d. Concrete truck wash-out, hydro-demolition water, and saw-cutting slurry.

SCHEDULE B MINIMUM MONITORING AND RECORDKEEPING REQUIREMENTS

1. Visual Monitoring

Visual monitoring is required when construction will disturb one or more acres.

- a. The following must be monitored visually:
 - i. Discharge point(s). Where discharge points are inaccessible, nearby downstream locations must be inspected to the extent that such inspections are practicable.
 - ii. BMPs.
 - iii. Locations where vehicles enter or exit the site for evidence of off-site sediment tracking.
 - iv. Areas used for storage of materials that are exposed to precipitation for evidence of spillage or other potential to contaminate stormwater runoff.

b. Inspect according to the following schedule:

Site Condition	Minimum Frequency
1. Active period	Weekly when stormwater runoff, including runoff from snow melt, is occurring. At least once every month, regardless of whether stormwater runoff is occurring.
2. Prior to the site becoming inactive or in anticipation of site inaccessibility	Once to ensure that erosion and sediment control measures are in working order. Any necessary maintenance and repair must be made prior to leaving the site.
3. Inactive periods greater than fourteen (14) consecutive calendar days	Once every month.
4. Periods during which the site is inaccessible due to inclement weather	If practical, inspections must occur daily at a relevant and accessible discharge point or downstream location.
5. Periods during which discharge is unlikely due to frozen conditions.	Monthly. Resume monitoring immediately upon melt, or when weather conditions make discharges likely.

c. Documentation of visual monitoring.

All visual monitoring must document the following:

- i. Visual monitoring date and inspector's name.
- ii. The construction site name or address.
- iii. For each discharge location, record:
 - (1) For turbidity and color, describe any apparent color and the clarity of the discharge, and any apparent difference in comparison with the surface waters.
 - (2) Describe any sheen or floating material, or record that it is absent. If present, it could indicate concern about a possible spill or leakage from vehicles or materials storage.
- iv. BMPs that failed or that are in need of maintenance, including erosion and sediment controls, chemical and waste controls, locations where vehicles enter and exit the site, status of areas that are under temporary or final stabilization, soil stockpile areas, and non-stormwater pollution (for example, paints, oils, fuels, or adhesives) controls.
- v. Location(s) where additional BMPs are needed that did not exist at the time of inspection; and
- vi. Corrective action required and implementation dates.

2. Recordkeeping

- a. Visual Monitoring Records Retained Onsite. All inspection records must be retained on site. During inactive periods of greater than seven (7) consecutive calendar days, the records must be retained by the owner/operator but do not need to be at the construction site.
- b. Upon request, the permit registrant must deliver the above records to DEQ, Agent, or the local municipality within three (3) working days of the request.
- c. All records must be retained by the owner/operator for at least three (3) years after project completion.

SCHEDULE D SPECIAL CONDITIONS

1. Standard Conditions

Federal regulations require that the Standard Conditions at 40 CFR §122.41 be applied to all NPDES permits. You are required to comply with those Standard Conditions. In the event of any inconsistency between 40 CFR §122.41 and any other schedule of the permit, Schedules A through D take precedence.

2. Other Requirements

This permit does not relieve the owner or operator from other permitting and licensing requirements. Prior to beginning construction activities, the owner/operator must obtain all other necessary approvals.

3. Permit-specific Definitions

- a. *1200-CN Jurisdiction* means a jurisdiction in which automatic coverage under the Oregon State 1200-CN permit may apply to eligible activities. A list of these jurisdictions is available at <http://www.deq.state.or.us/wq/stormwater/construction.htm>.
- b. *Best Management Practices or BMPs* means schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural or managerial practices to prevent or reduce the pollution of waters of the state. BMPs include treatment systems, erosion and sediment control, source control, and operating procedures and practices to control site runoff, spillage or leaks, and waste disposal.
- c. *Borrow Area* means the area from which material is excavated to be used as fill material in another area.
- d. *Clean Water Act or CWA* means the Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, and 97-117; USC 1251 et seq.
- e. *Conveyance System* means, for the purposes of this permit, a sewer, ditch, pipe, channel, swale or similar component that is designed to carry water; or any combination of such components.
- f. *DEQ* means the Oregon Department of Environmental Quality.
- g. *Dewatering* means the removal and disposal of surface water or groundwater during site construction.
- h. *Discharge Point* means the location where stormwater leaves the site. It includes the location where stormwater is discharged to surface water or a stormwater conveyance system.
- i. *Erosion* means the movement of soil particles or rock fragments by water or wind.
- j. *Fully Stabilized* means the completion of all soil disturbing activities at the site by the owner/operator, and the establishment of a final vegetative cover, or equivalent permanent stabilization measures (such as riprap, gabions or geotextiles) to prevent erosion.
- k. *Hazardous Materials* means the materials defined in 40 CFR part 302 Designation, Reportable Quantities, and Notification.
- l. *Local Jurisdiction* means any county, city, town, or service district.
- m. *National Pollutant Discharge Elimination System or NPDES* means the national program under Section 402 of the Clean Water Act for regulation of point source discharges of pollutants to waters of the United States.
- n. *Owner or operator* means the owner or operator of any “facility or activity” subject to regulation under the NPDES program. Owners or operators may be individuals or other legal entities.
 - i. Operator for the purposes of this permit means any person associated with a construction project that meets either of the following two criteria:
 - (1) The person has operational control over construction plans and specifications, including the authority to make modifications to those plans and specifications; or

- (2) The person has day-to-day operational control of those activities at a project which are necessary to ensure compliance with a ESCP for the site or other permit conditions (for example, they are authorized to direct workers at a site to carry out activities required by the ESCP or comply with other permit conditions).
- ii. Owner for the purposes of this permit means any person with a legal interest in the permitted activities
- o. *Person* means not only individuals, but also includes, corporations, associations, firms, partnerships, joint stock companies, public and municipal corporations, political subdivisions, the state and any agencies thereof, and the federal government and any agencies thereof.
- p. *Pollutant* as defined in 40 CFR §122.2 means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, domestic sewage sludge (biosolids), munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, soil, cellar dirt and industrial, municipal, and agricultural waste discharge into water. It does not mean sewage from vessels within the meaning of section 312 of the FWPCA, nor does it include dredged or fill material discharged in accordance with a permit issued under section 404 of the FWPCA.
- q. *Pollution or Water Pollution* as defined by ORS 468B.005(3) means such alteration of the physical, chemical or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state, which will or tends to, either by itself or in connection with any other substance, create a public nuisance or which will or tends to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life or the habitat thereof.
- r. *Sediment* means mineral or organic matter, typically deposited by water, air, or ice.
- s. *Site* means the area where the construction activity is physically located or conducted.
- t. *Stormwater Conveyance* means a sewer, ditch, or swale that is designed to carry stormwater; a stormwater conveyance may also be referred to as a storm drain or storm sewer.
- u. *Stormwater as defined by 40 CFR §122.26(b)(13)* means stormwater runoff, snow melt runoff, and surface runoff and drainage.
- v. *Surface Water* means all water naturally open to the atmosphere (for example, rivers, lakes, reservoirs, ponds, streams, impoundments, oceans, estuaries, springs, etc.).
- w. *Total Maximum Daily Load or TMDL* means a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet state water quality standards. It is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. Percentages of the TMDL are allocated by DEQ to the various pollutant sources.
- x. *Turbidity* means the optical condition of waters caused by suspended or dissolved particles or colloids that scatter and absorb light rays instead of transmitting light in straight lines through the water column. Turbidity may be expressed as nephelometric turbidity units (NTUs) measured with a calibrated turbidity meter.
- y. *Underground Injection Control* means any system, structure, or activity that is created to place fluid below the ground or sub-surface (for example, sumps, infiltration galleries, drywells, trench drains, drill holes, etc.)
- z. *Water or Waters of the State as defined by ORS 468B.005(8)* means lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters which do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the state or within its jurisdiction.



**GENERAL PERMIT
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
STORMWATER DISCHARGE PERMIT**

Oregon Department of Environmental Quality
811 SW Sixth Avenue, Portland OR 97204
Telephone: (503) 229-5279 or 1-800-452-4011 (toll free in Oregon)

Issued pursuant to ORS 468B.050 and Section 402 of the Federal Clean Water Act

REGISTERED TO:

SOURCES COVERED BY THIS PERMIT:

The *legally authorized representative* (see Definitions) for construction activities (as defined below) that may discharge to surface waters or conveyance systems leading to surface waters of the state must register for coverage under this permit with DEQ before any land disturbance occurs, unless the construction activities are automatically covered as described in the 1200-CN permit.

- Construction activities including clearing, grading, excavation, materials or equipment staging and stockpiling that will disturb one or more acres and may discharge to surface waters or conveyance systems leading to surface waters of the state.
- Construction activities including clearing, grading, excavation, materials or equipment staging and stockpiling that will disturb less than one acre that are part of a common plan of development or sale if the larger common plan of development or sale will ultimately disturb one acre or more and may discharge to surface waters or conveyance systems leading to surface waters of the state.
- This permit also authorizes discharges from any other construction activity (including construction activity that disturbs less than one acre and is not part of a common plan of development or sale) designated by DEQ, where DEQ makes that designation based on the potential for contribution to an excursion of a water quality standard or for significant contribution of pollutants to waters of the state.

This permit does not authorize the following:

- In-water or riparian work, which is regulated by other programs and agencies including the Federal Clean Water Act Section 404 permit program, the Oregon Department of State Lands, the Oregon Department of Fish and Wildlife, the U.S. Fish and Wildlife Service, the U.S. Army Corp of Engineers, the National Marine Fisheries Service, and the Department of Environmental Quality Section 401 certification program.
- Post-construction stormwater discharges that originate from the site after completion of construction activities and final stabilization.
- Discharges to underground injection control (UIC) systems.

Lydia Emer, Operations Administrator

Effective: December 15, 2015
Expiration Date: December 14, 2020

PERMITTED ACTIVITIES

Until this permit expires, is modified or revoked, the permit registrant is authorized to construct, install, modify, or operate erosion and sediment control measures and stormwater treatment and control facilities, and to discharge stormwater and certain specified non-stormwater discharges to surface waters of the state or conveyance systems leading to surface waters of the state only in conformance with all the requirements, limitations, and conditions set forth in the permit including attached schedules as follows:

Unless specifically authorized by this permit, by regulation issued by EPA, by another NPDES permit, or by Oregon Administrative Rule, any other direct or indirect discharge to waters of the state is prohibited, including discharges to an underground injection control system.

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**SCHEDULE A
CONTROLS AND LIMITATIONS**

CONSTRUCTION ACTIVITIES REQUIRED TO REGISTER FOR PERMIT

1. Registering New Construction Activities

- a. Applicants seeking registration for coverage under this permit for construction activities that will disturb one or more acres must submit a complete application to DEQ or Agent at least thirty (30) calendar days before the planned land disturbance, unless otherwise approved by DEQ or Agent (see Schedule **D** for description of Agent). The application must include:
 - i. One paper copy and one electronic copy of the following:
 - (1) A complete DEQ-approved application form;
 - (2) An Erosion and Sediment Control Plan (ESCP);
 - (3) A Land Use Compatibility Statement (LUCS) indicating that the proposed activities are compatible with the local government's acknowledged comprehensive plan; and
 - ii. Applicable permit fees.
- b. Applicants seeking registration for coverage under this permit for construction activities that will disturb less than one acre that are part of a larger common plan of development or sale must, at least thirty (30) calendar days before the planned land disturbance, submit to DEQ or Agent:
 - i. A complete DEQ-approved application form;
 - ii. One copy of an ESCP that covers the individual lot(s); and
 - iii. Applicable permit fees.
- c. Applicants seeking registration for coverage under this permit for construction activities that disturb or are likely to disturb five (5) or more acres over the life of the project, are subject to a 14-calendar day public review period before permit registration is granted. The public review period will not begin if the application form or ESCP are incomplete.
- d. DEQ or Agent will notify the applicant in writing if registration is approved or denied. Permit coverage does not begin until the applicant receives written notice that the registration is approved. If registration is denied or the applicant does not wish to be regulated by this permit, the applicant may apply for an individual permit in accordance with OAR 340-045-0030.
- e. Until termination has been approved by DEQ or Agent, permit registrants for permitted activities that disturb one acre or more must pay an annual fee.
- f. Permitted activities for projects that disturb less than one acre and utilize the small lot fee structure are covered under the permit for 2 (two) years. To continue coverage beyond 2 years, the permit registrant must submit a DEQ-approved application form and (if needed) an updated ESCP; and pay the applicable permit fee.

2. Renewal Application for Permit Coverage

- a. An owner or operator of construction activities registered under the 1200-C permit that expires in 2015 must submit to DEQ or Agent a complete renewal application, using a DEQ-approved renewal application form before expiration of the 1200-C permit to ensure uninterrupted permit coverage for construction stormwater discharges.
- b. If renewal is denied or the applicant does not wish to be regulated by this permit, the registrant may apply for an individual permit in accordance with OAR 340-045-0030.

3. Transfer of Permit Registration

- a. To transfer permit registration, the new owner or permit registrant must submit a DEQ-approved transfer form and applicable fees prior to permit expiration and within thirty (30) calendar days of the planned transfer.
- b. If ownership changes (through sale, foreclosure or other means) and the previous owner cannot be found:
 - i. The new owner must register for coverage under the permit (Schedule A, Paragraph 1) if the site is not stabilized.
 - ii. The new owner must register for coverage under the permit (Schedule A, Paragraph 1) prior to any additional land disturbance.
 - iii. The new owner does not need to register for coverage under the permit if the site meets the conditions for termination (see Schedule B) and there is no ongoing or additional land disturbance planned.
 - iv. DEQ will attempt to contact the previous owner at the address on record. If there is no response, after sixty (60) calendar days DEQ may terminate the previous owner's permit coverage.

4. Authorized Stormwater Discharges

Subject to compliance with the terms and conditions of this permit, and provided that all necessary controls are implemented to minimize sediment transport, the following stormwater discharges from construction sites are authorized (unless otherwise prohibited by local ordinances):

- a. Stormwater associated with construction activity described in the "Sources Covered" section of the permit.
- b. Stormwater from support activities at the construction site (for example, concrete or asphalt operations, equipment staging yards, material storage areas, excavated material disposal areas and borrow areas) provided:
 - i. The support activity is directly related to the construction site covered by this NPDES permit;
 - ii. The support activity is not a commercial operation serving multiple unrelated construction projects by different permit registrants;
 - iii. The support activity does not operate beyond the completion of the construction activity at the last construction project it supports; and
 - iv. Appropriate control measures are used to ensure compliance with discharge and water quality requirements.

5. Authorized Non-Stormwater Discharges

If the terms and conditions of this permit are met, all necessary controls are implemented to minimize sediment transport, the discharge is not contaminated, and the discharge is not prohibited by local ordinance, the following non-stormwater discharges from construction sites are authorized:

- a. Water from emergency firefighting activities;
- b. Fire hydrant flushings;
- c. Potable water including water line flushing;
- d. Vehicle washing and external building washing that does not use solvents, detergents or hot water;
- e. Pavement wash waters where stockpiled material, spills or leaks of toxic or hazardous materials have not occurred (unless all stockpiled and spilled material has been removed) and where solvents, detergents or hot water are not used. Directing pavement wash waters into any surface water, storm drain inlet, or stormwater conveyance is prohibited, unless the conveyance is connected to a sediment basin, sediment trap, or similarly effective control;
- f. Water used to control dust;

- g. Air conditioning or compressor condensate;
- h. Construction dewatering activities (including groundwater dewatering and well drilling discharge associated with the registered construction activity), provided that:
 - i. The water is land applied in a way that results in complete infiltration with no potential to discharge to a surface water of the state, or
 - ii. Best Management Practices (BMPs) or a treatment system approved by DEQ or Agent is used to ensure compliance with discharge and water quality requirements (see 9.d);
- i. Foundation or footing drains where flows are not contaminated with process materials such as solvents; and
- j. Landscape irrigation.

For other non-stormwater discharges, a separate permit may be needed. The disposal of wastes to surface waters or on-site is not authorized by this permit.

6. Prohibited Discharges

Discharges of the following are not authorized by this permit:

- a. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
- b. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;
- c. Soaps or solvents used in vehicle and equipment washing.
- d. Concrete truck wash-out, hydro-demolition water, and saw-cutting slurry.

7. Control Measures

It is the responsibility of the permit registrant to implement BMPs as needed for weather conditions.

a. Erosion Prevention

The permit registrant must control stormwater volume and velocity within the site to minimize soil erosion. The permit registrant must prevent or minimize the disturbance of sediment.

- i. Avoid or minimize excavation and bare ground activities during wet weather.
- ii. Temporarily stabilize soils at the end of the shift before holidays and weekends, if needed. It is the permit registrant's responsibility to ensure that soils are stable during rain events at all times of the year.
- iii. Clearing and Grading.
Phase clearing and grading to the maximum extent practical to prevent exposed inactive areas from becoming sources of erosion. Minimize the disturbance of steep slopes. Minimize erosion during and after soil disturbance using BMPs such as temporary seeding and planting, final vegetative cover, mulches, compost blankets, erosion control blankets and mats, and soil tackifiers.
- iv. Wind Erosion/Dust Control. Water or use a soil-binding agent or other dust control technique as needed to avoid wind-blown soil.
- v. Vegetative Erosion Control.
 - (1) Preserve existing vegetation and re-vegetate open areas when practical.
 - (2) Do not remove temporary sediment control practices until final vegetative cover or permanent stabilization measures are established.
 - (3) Identify the type of seed mix (percentages of the various seeds of annuals, perennials and clover) and other plantings used to establish temporary or final vegetative cover.

- b. Natural Buffer Zone
- i. If a water of the state is within the project site or within 50 feet of the project boundary, and a natural buffer exists within 50 feet of the water of the state,
 - (1) The permit registrant must:
 - (a) Maintain any existing natural buffer within the 50-foot zone for the duration of permit coverage; or
 - (b) Maintain less than the entire existing natural buffer, and provide additional erosion and sediment controls (beyond those required in other sections of this general permit). In addition to other applicable requirements of this permit, the permit registrant must implement one or more of the BMPs listed below to control and treat sediment and turbidity. The selected BMP(s) must be identified in the ESCP as addressing this condition of the permit, and the rationale for choosing the selected BMP(s) must also be provided.
 - (i) Compost berms, compost blankets, or compost socks;
 - (ii) Erosion control mats;
 - (iii) Tackifiers used in combination with perimeter sediment control BMPs;
 - (iv) Water treatment by electro-coagulation, flocculation, or filtration; and/or
 - (v) Other substantially equivalent sediment or turbidity BMP approved by DEQ or Agent.
 - (2) In addition, the permit registrant must:
 - (a) Ensure that all discharges from covered activities to the water of the state are treated by the site's erosion and sediment controls before entering the natural buffer. Use velocity dissipation devices if necessary to prevent erosion in the natural buffer.
 - (b) Delineate and clearly mark off (with flags, tape or similar marking devices) all natural buffer zones.
 - ii. Stormwater control features (for example, stormwater conveyance channels, storm drain inlets, and sediment basins) are not "waters of the state" for the purposes of triggering this requirement.
 - iii. Areas that the permit registrant does not own or that are otherwise outside the permit registrant's operational control may be considered areas of undisturbed natural buffer for purposes of this requirement. However, the permit registrant is only required to retain and protect from construction activities the portion of the buffer area that is under the permit registrant's control.
 - iv. The Natural Buffer Zone requirements do not apply if:
 - (1) No natural buffer exists due to development that occurred prior to the initiation of planning for the current project; or
 - (2) There is no discharge of stormwater to the water of the state through the area between the disturbed portions of the site and the surface water located within the project site or within 50 feet of the site. This includes situations where the permit registrant has implemented control measures, such as a berm or other barrier, that will prevent such discharges; or
 - (3) There is a CWA Section 404 permit and 401 WQC issued for the project; or
 - (4) Construction is for a water-dependent structure or water access areas (for example, pier, boat ramp, or trail).
 - v. Pre-existing conditions
 - (1) The permit registrant is not required to enhance the quality of the vegetation that already exists in the buffer, or provide vegetation if none exists.
 - (2) Any preexisting structures or impervious surfaces are allowed in the natural buffer provided the permit registrant retains and protects from disturbance any natural buffer area outside the preexisting disturbance.

c. Runoff Control

The permit registrant must control stormwater discharges, including both peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and streambank erosion. The permit registrant must minimize sediment discharges from the site. The permit registrant must prevent or minimize scouring by means such as diverting, collecting, conveying or controlling flow. BMPs used for these purposes include diversion of run-on; trench drains, slope drains, french drains and subsurface drains; temporary diversion dikes; earthen berms; grass-lined or armored channels (such as turf reinforcement mats); drainage swales; energy dissipaters; rock outlet protection; drop inlets; and check dams. Note that any underground injection must comply with OAR Chapter 340, Division 44.

d. Sediment Control

The permit registrant must prevent or minimize sediment transport by means such as filtration and settling.

- i. Control sediment as needed along the site perimeter and at all operational internal storm drain inlets at all times during construction, both internally and at the site boundary by using BMPs such as sediment fences, buffer zones, sediment traps, rock filters, compost berms/compost socks, fiber wattles, storm drain inlet protection, and temporary or permanent sedimentation basins; and, when discharging from basins and impoundments, by utilizing outlet structures that withdraw water from the surface, unless infeasible.

- ii. Sediment Tracking and Transport Control.

The permit registrant must prevent or minimize tracking of sediment onto public or private roads using BMPs such as:

- (1) Establish graveled (or paved) exits and parking areas prior to any land disturbing activities.
- (2) Gravel all unpaved roads located onsite.
- (3) Use an exit tire wash.
- (4) Cover all sediment loads leaving the site.
- (5) When trucking saturated soils from the site, either use water-tight trucks or drain loads on site.

e. Pollution Prevention and Control.

- i. Pollution Prevention.

The permit registrant must design, implement, and maintain pollution prevention measures to minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials present on the site to precipitation and to stormwater.

- (1) Use BMPs to prevent or minimize pollution of stormwater or to treat flow from dewatering, ponded water, paving, and temporary bridges.
- (2) Use BMPs to prevent or minimize stormwater from being exposed to pollutants from spills; vehicle and equipment fueling, maintenance, and storage; other cleaning and maintenance activities; and waste handling activities. These pollutants include fuel, hydraulic fluid and other oils from vehicles and machinery; as well as debris, fertilizer, pesticides and herbicides, paints, solvents, curing compounds and adhesives.

- ii. Stockpile Erosion and Sediment Control Practices.

- (1) Both on-site stockpiles and stockpiles located away from the construction activity but still under the control of the permit registrant must be protected to prevent significant amounts of sediment or turbid water from discharging to surface waters or conveyance systems leading to surface waters.
- (2) As needed based on weather conditions, at the end of each workday soil stockpiles must be stabilized or covered, or other BMPs must be implemented to prevent discharges to surface waters or conveyance systems leading to surface waters.

- (3) In developing these practices, at a minimum the following must be considered:
diversion of uncontaminated flows around stockpiles, use of cover over stockpiles, and installation of sediment fences (or other barriers that will prevent the discharge of sediment or turbidity) around stockpiles.
- iii. Solid Waste and Hazardous Materials Management.
Implement the following BMPs when applicable: written spill prevention and response procedures, employee training on spill prevention and proper disposal procedures, spill kits available on site, regular maintenance schedule for vehicles and machinery, material delivery and storage controls, training and signage, and covered storage areas for waste and supplies.
- f. Additional BMP Requirements During Inactive Periods.
 - i. If all construction activities cease at the site for thirty (30) calendar days or more, the entire site must be stabilized using temporary seeding, vegetation, a heavy mulch layer, or another method.
 - ii. On any significant portion of the site, if construction activities cease for fourteen (14) calendar days or more, install temporary covering such as blown straw and a tackifier, loose straw, compost mulch, temporary vegetative cover, crushed rock or gravel base.

8. Implementation of Control Measures

- a. Permit registrants must implement the ESCP (Paragraph A.12). Failure to implement any of the control measures or practices described in the ESCP is a violation of the permit.
- b. Permit registrants must prevent the discharge of significant amounts of sediment to surface waters or conveyance systems leading to surface waters. The following conditions indicate that a significant amount of sediment has left or is likely to leave the site, and are prohibited:
 - i. Earth slides or mud flows;
 - ii. Concentrated flows of stormwater such as rills, rivulets or channels that cause erosion when such flows are not filtered, settled or otherwise treated to remove sediment;
 - iii. Sediment laden or turbid flows of stormwater that are not filtered or settled to remove sediments and turbidity;
 - iv. Deposits of sediment at the construction site in areas that drain to unprotected stormwater inlets or to catch basins that discharge to surface waters. Inlets and catch basins with failing sediment controls due to lack of maintenance or inadequate design are considered unprotected;
 - v. Deposits of sediment from the construction site on any property (including public and private streets) outside of the construction activity covered by this permit.
- c. Permit registrants must ensure the control measures or practices described in the ESCP are implemented according to the following sequence:
 - i. Before Construction.
 - (1) Identify, mark, and protect (with construction fencing or other means) critical riparian areas and vegetation including important trees and associated rooting zones and vegetation areas to be preserved.
 - (2) Identify, mark and protect vegetative buffer zones between the site and sensitive areas (for example, wetlands), and other areas to be preserved, especially in perimeter areas.
 - (3) Hold a pre-construction meeting of project construction personnel that includes the inspector required by condition A.12.b.iii to discuss erosion and sediment control measures and construction limits.
 - (4) Stabilize site entrances and access roads including, but not limited to construction entrances, roadways and equipment parking areas.
 - (5) Install perimeter sediment control, including storm drain inlet protection as well as all sediment basins, traps, and barriers.

- (6) For projects involving concrete, permit registrants must establish concrete truck and other concrete equipment washout areas before beginning concrete work.
- (7) Establish material and waste storage areas, and other non-stormwater controls.
- (8) Stabilize stream banks and construct the primary runoff control measures to protect areas from concentrated flows.

ii. During Construction.

- (1) Land Clearing, Grading and Roadways. Permit registrants must:
 - (a) Begin land clearing, excavation, trenching, cutting or grading only after installing applicable sediment and runoff control measures.
 - (b) Provide appropriate erosion and sediment control BMPs for all roadways including gravel roadways.
 - (c) Install additional control measures as work progresses as needed.
 - (d) Phase clearing and grading to the maximum extent practical to prevent exposed inactive areas from becoming a source of erosion.
- (2) For projects involving concrete, permit registrants must:
 - (a) Wash concrete trucks and equipment off site (in an appropriately protected area) or in designated concrete washout areas only.
 - (b) Direct all wash water into a pit or leak-proof container. The pit does not need to be lined or leak-proof, but the pit or container must be designed so that no overflows can occur due to inadequate sizing or precipitation. Concrete wash water must not adversely affect groundwater.
 - (c) Handle (for example, through disposal, reuse or recycling) wash water as waste. Do not dispose of concrete wash water or wash out concrete trucks onto the ground, or into storm drains, open ditches, streets, or streams.
 - (d) Do not dump excess concrete on site, except in designated concrete washout areas.
 - (e) Handle (for example, through disposal, reuse or recycling) hardened concrete waste consistent with handling of other construction wastes.
 - (f) Concrete spillage or concrete discharge to surface waters of the state is prohibited.
- (3) Surface Stabilization. Permit registrants must:

Apply temporary stabilization measures (for example, mulching or temporary seeding), final vegetative cover, or permanent stabilization measures immediately on all disturbed areas as work is completed. Stabilization of disturbed areas must be initiated immediately whenever any earth disturbing activities have permanently ceased on any portion of the site. However, temporary or permanent stabilization measures are not required for areas that are intended to be left unvegetated or unstabilized following construction (such as dirt access roads, utility pole pads, areas being used for storage of vehicles, equipment, or materials), provided that measures are in place to eliminate or minimize erosion.

iii. Termination. Before termination of permit coverage, permit registrants must:

- (1) Provide final vegetative cover or permanent stabilization measures on all exposed areas (see Section D.3).
- (2) Immediately after seeding or planting the area to be vegetatively stabilized, the permit registrant must select, design, and install non-vegetative erosion controls (such as mulch or rolled erosion control products) that provide cover to the area while vegetation is becoming established, to the extent necessary to prevent erosion of the seeded or planted area.
- (3) Remove and properly dispose of construction materials and waste, including sediment retained by temporary BMPs.
- (4) Remove all temporary control measures as areas are stabilized, unless doing so conflicts with local requirements.

9. BMP Maintenance

- a. The permit registrant must establish and promptly implement procedures for maintenance and repair of erosion and sediment control measures.
- b. General Site Maintenance.
 - i. Significant amounts of sediment that leave the site must be cleaned up within 24 hours, placed back on the site and stabilized, or disposed of properly. In addition, the source(s) of the sediment must be controlled to prevent continued discharge within 24 hours. Any in-stream cleanup of sediment must be performed according to requirements and timelines set by the Oregon Department of State Lands.
 - ii. Sediment must not be intentionally washed into storm sewers or drainage ways. Methods such as vacuuming, dry mechanical sweeping, or manual sweeping must be used to cleanup released sediments.
 - iii. Fertilizer application rates must follow manufacturer's guidelines and the application must be done in such a way to minimize discharge of nutrients to surface waters.
- c. Maintenance of Erosion and Sediment Controls. Permit registrants must:
 - i. Sediment fence: remove trapped sediment before it reaches one third of the above ground fence height.
 - ii. Other sediment barriers (such as biobags): remove sediment before it reaches two inches depth above ground height.
 - iii. Catch basins: clean before sediment retention capacity has been reduced by fifty percent.
 - iv. Sediment basins: remove trapped sediments before design capacity has been reduced by fifty percent.
- d. Treatment Systems.

If an active treatment system (for example, electro-coagulation, flocculation, filtration, etc.) for sediment or other pollutant removal is employed, the permit registrant must submit an operation and maintenance plan (including system schematic, location of system, location of inlet, location of discharge, discharge dispersion device design, and a sampling plan and frequency) to DEQ or Agent before operating the treatment system. The plan must be approved by DEQ or Agent before operating the treatment system. If approved, the treatment system must be operated and maintained according to manufacturer's specifications.

10. In-stream Water Quality Standards

- a. The permit registrant must not cause or contribute to a violation of in-stream water quality standards.
- b. In the absence of information demonstrating otherwise, DEQ expects that compliance with the conditions in this permit will result in stormwater discharges being controlled as necessary to meet applicable water quality standards. If at any time the permit registrant becomes aware, or DEQ determines, that a discharge from the permitted activity is not being controlled as necessary to meet applicable water quality standards, the permit registrant must take corrective actions, and document the corrective actions as required in A.13.

11. Water Quality Requirements for TMDL and 303(d) Listed Waterbodies

In addition to other applicable requirements of this permit, if a permit registrant's construction project has the potential to discharge to a portion of a waterbody that is listed as impaired and requiring a TMDL for turbidity or sedimentation on the most recently EPA-approved Oregon 303(d) list or that has an established Total Maximum Daily Load (TMDL) for sedimentation or turbidity (available at www.deq.state.or.us/WQ/assessment/assessment.htm), the permit registrant must implement one or more of the BMPs listed below to control and treat sediment and turbidity. The selected BMP(s) must

be identified in the ESCP as addressing this condition of the permit, and the rationale for choosing the selected BMP(s) must also be provided.

- a. Compost berms, compost blankets, or compost socks;
- b. Erosion control mats;
- c. Tackifiers used in combination with perimeter sediment control BMPs;
- d. Established vegetated buffers sized at 50 feet (horizontally) plus an additional 25 feet (horizontally) per 5 degrees of slope;
- e. Water treatment by electro-coagulation, flocculation, or filtration; and/or
- f. Other substantially equivalent sediment or turbidity BMP approved by DEQ or Agent.

12. Erosion and Sediment Control Plan (ESCP)

- a. Preparation.
 - i. The permit registrant must ensure that an ESCP is prepared and revised as necessary to reflect site conditions for the construction activity regulated by this permit, and submit revisions to DEQ or Agent in accordance with requirements of this permit. The design, installation, and maintenance of erosion and sediment controls must be adequate to address factors such as the amount, frequency, intensity, and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site.
 - ii. Qualifications to Prepare ESCP.
 - (1) For construction activities disturbing 20 or more acres, the ESCP must be prepared and stamped by a Certified Professional in Erosion and Sediment Control, Certified Professional in Storm Water Quality, Oregon Registered Professional Engineer, Oregon Registered Landscape Architect, or Oregon Certified Engineering Geologist.
 - (2) If engineered facilities such as sedimentation basins or diversion structures for erosion and sediment control are required, the ESCP must be prepared and stamped by an Oregon Registered Professional Engineer.
- b. The ESCP must include the following elements:
 - i. Name of the site.
 - ii. Local Government Requirements. Include any procedures necessary to meet applicable local government erosion and sediment control or stormwater management requirements.
 - iii. Erosion and Sediment Control Inspector.
 - (1) Inspections must be conducted by a person knowledgeable in the principles and practice of erosion and sediment controls who possesses the skills to assess conditions at the construction site that could impact stormwater quality, is knowledgeable in the correct installation of the erosion and sediment controls, and is able to assess the effectiveness of any sediment and erosion control measures selected to control the quality of stormwater discharges from the construction activity.
 - (2) Beginning January 1, 2017, for projects that are five or more acres, inspections must be conducted by a person certified in an erosion and sediment control program that has been approved by DEQ. DEQ has approved the following programs:
 - (a) Certified Professional in Erosion and Sediment Control,
 - (b) Certified Professional in Storm Water Quality,
 - (c) Washington State Certified Erosion and Sediment Control Lead, or
 - (d) Rogue Valley Sewer Services Erosion and Sediment Control Certification.

- (3) Inspections must be conducted by the Erosion and Sediment Control Inspector identified in the ESCP.
 - (4) Provide the following for all personnel that will conduct inspections:
 - (a) Name and title;
 - (b) Contact phone number and, if available, e-mail address; and
 - (c) Description of experience and training.
- iv. Narrative Site Description.
- (1) Description of the construction activity;
 - (2) Proposed timetable indicating when each erosion and sediment control BMP is to be installed and the duration that it is to remain in place;
 - (3) Estimates of the total area of the permitted site and the area of the site that is expected to undergo clearing, grading or excavation;
 - (4) Nature of the fill material to be used, and of the site soils prior to disturbance;
 - (5) Names of the receiving water(s) for stormwater runoff;
 - (6) The types of pollutants that could be found in stormwater and their likely sources;
 - (7) Any authorized non-stormwater discharges; and
 - (8) If a surface water of the state is within 50 feet of the permitted activities,
 - (a) Description of area within 50 feet of project site (including any natural buffer), and
 - (b) Description of approach to manage the natural buffer zone, if any (for example, maintain natural buffer, reduce natural buffer and increase BMPs, or eliminate flow through natural buffer).
- v. Site Map and Drawings.
- (1) The site map and drawings must be kept on site and must represent the actual BMP controls being used onsite;
 - (2) The site map must show sufficient roads and features for DEQ or Agent to locate and access the site;
 - (3) The site map and drawings must include (but is not limited to) the following features (as applicable):
 - (a) Total property boundary including surface area of the development;
 - (b) Areas of soil disturbance (including, but not limited to, showing cut and fill areas and pre- and post-development elevation contours);
 - (c) Drainage patterns before and after finish grading;
 - (d) Discharge points;
 - (e) Areas used for the storage of soils or wastes;
 - (f) Areas where vegetative practices are to be implemented;
 - (g) All erosion and sediment control measures or structures;
 - (h) Impervious structures after construction is completed (including buildings, roads, parking lots and outdoor storage areas);
 - (i) Springs, wetlands and other surface waters on site or adjacent to the site;
 - (j) Temporary and permanent stormwater conveyance systems;
 - (k) Onsite water disposal locations (for example, for dewatering);
 - (l) Storm drain catch basins depicting inlet protection, and a description of the type of catch basins used (for example, field inlet, curb inlet, grated drain and combination);
 - (m) Septic drain fields;
 - (n) Existing or proposed drywells or other UICs;
 - (o) Drinking water wells on site or adjacent to the site;
 - (p) Planters;
 - (q) Sediment and erosion controls including installation techniques;

- (r) Natural buffer zones and any associated BMPs for all areas within 50 feet of a water of the state; and
 - (s) Detention ponds, storm drain piping, inflow and outflow details.
- c. ESCP Revisions
- i. The ESCP must be accurate and reflect site conditions. Update the ESCP as needed to represent actual BMPs being used onsite.
 - ii. ESCP revisions must:
 - (1) Clearly identify any changes (such as type or design) to the BMPs identified in the ESCP, their location, maintenance required, and any other revisions necessary to prevent and control erosion and sediment runoff.
 - (2) Include contact information and any applicable certification, training and experience for changes in Erosion and Sediment Control Inspector.
 - iii. Approval of the revisions by DEQ or Agent prior to implementation is not required.
 - iv. Submission of all ESCP revisions is not required. ESCP revisions must be submitted only if they are made for any of the following reasons:
 - (1) Part of a Corrective Action (A.13).
 - (2) Change in address of the permit registrant. Registrant must keep their address current with DEQ or Agent. Failure to do so may be used as grounds for termination of coverage.
 - (3) Change (increase or decrease) in the size of the project.
 - (4) Change (increase or decrease) in the size or location of disturbed areas.
 - (5) Change to BMPs (for example, type, design or location).
 - (6) Change in erosion and sediment control inspector.
 - v. If submission of ESCP revisions is required, submit one paper copy and one electronic PDF to DEQ or Agent within 10 calendar days of the revision. These revisions should be submitted as revised pages of the ESCP or drawings only; it is not necessary to submit the entire ESCP. If the permit registrant does not receive a response to the revisions from DEQ or Agent within 10 calendar days of receipt, the proposed revisions are deemed accepted.
 - vi. DEQ or Agent may require the permit registrant to revise the ESCP at any time. The permit registrant must submit the revisions according to the timeframe specified by DEQ or Agent.

13. Corrective Actions

- a. The permit registrant must take corrective actions if any of the following occur:
 - i. Significant amounts of sediment or turbidity (as described in A.8.b) are visible downstream of the permitted activities in:
 - (1) A conveyance system leading to surface waters;
 - (2) Surface waters 50 feet or more downstream of the discharge point; or
 - (3) Surface waters at any location where more than one-half of the width of the receiving surface waters is affected.
 - ii. The construction activity causes or contributes to a violation of in-stream water quality standards (A.10.a).
 - iii. DEQ or the Agent requires the permit registrant to take corrective actions to prevent or control the discharge of significant amounts of sediment or turbidity to surface waters or to conveyance systems that discharge to surface waters.
- b. If corrective actions are required, the permit registrant must do all of the following:
 - i. Source(s) of sediment must be controlled within 24 hours to prevent continued or additional discharges. Immediately, but no later than 24 hours after initial detection, take corrective actions or implement additional effective BMPs until the significant amounts of sediment or turbidity are no longer visually detectable and to ensure that the requirements of Conditions A.8.b and A.10.a are met;

- ii. Document in the inspection records the corrective actions taken; and
- iii. Evaluate the control measures and practices to determine the cause of the noncompliance. Submit a written report to DEQ or Agent within 10 calendar days of identifying the need to take corrective action as required in condition 13.a above. This report must include:
 - (1) The site common name and DEQ file number.
 - (2) Identification of outfalls that were out of compliance.
 - (3) Names of personnel conducting inspections.
 - (4) A description of the noncompliance and its cause.
 - (5) The period of noncompliance.
 - (6) Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance (such as specific BMPs that will be implemented or increased inspection frequency).
 - (7) ESCP revisions, if revisions were required to prevent and control erosion and sediment discharges.

**SCHEDULE B
 MINIMUM MONITORING AND RECORDKEEPING
 REQUIREMENTS**

1. Visual Monitoring

- a. The following must be monitored visually by a designated Erosion and Sediment Control Inspector:
 - i. All areas of the site disturbed by construction activity to ensure that BMPs are in proper working order.
 - ii. Discharge point(s) identified in the ESCP for evidence of or the potential for the discharge of pollutants (including sediment and turbidity), and to ascertain whether erosion and sediment control measures are effective in preventing significant impacts to surface waters. Where discharge points are inaccessible, nearby downstream locations must be inspected to the extent that such inspections are practical.
 - iii. BMPs identified in the current ESCP to assess whether they are functioning properly.
 - iv. Locations where vehicles enter or exit the site for evidence of off-site sediment tracking.
 - v. Areas used for storage of materials that are exposed to precipitation for evidence of spillage or other potential to contaminate stormwater runoff.

- b. All ESCP controls and practices must be monitored visually according to the following schedule:

Site Condition	Minimum Frequency
1. Active period	Daily when stormwater runoff, including runoff from snow melt, is occurring. At least once every fourteen (14) calendar days, regardless of whether stormwater runoff is occurring.
2. Prior to the site becoming inactive or in anticipation of site inaccessibility	Once to ensure that erosion and sediment control measure are in working order. Any necessary maintenance and repair must be made prior to leaving the site.
3. Inactive periods greater than fourteen (14) consecutive calendar days	Once every month.
4. Periods during which the site is inaccessible due to inclement weather	If practical, inspections must occur daily at a relevant and accessible discharge point or downstream location.
5. Periods during which discharge is unlikely due to frozen conditions.	Monthly. Resume monitoring immediately upon melt, or when weather conditions make discharges likely.

c. Documentation of visual monitoring.

All visual monitoring must document the following:

- i. Visual monitoring date and inspector's name.
- ii. The construction site name as it appears on the registrant's permit.
- iii. The file or site number.
- iv. Weather conditions during the inspection, the approximate amount of precipitation since the last inspection, and approximate amount of precipitation during the last 24 hours.
- v. Observations for each discharge location. If a discharge location is inaccessible due to safety hazard, document the hazard and record the inspections noted at a relevant discharge point or downstream location if practical.
 - (1) For each discharge point, make observations:
 - (a) At the discharge location if the discharge is to a conveyance system leading to surface waters;
 - (b) From the discharge point to 50 feet downstream if the discharge is to surface waters; and
 - (c) At any location where more than one-half of the width of the receiving surface water is affected.
 - (2) For each area observed, document the following:
 - (a) For turbidity and color, describe any apparent color and the clarity of the discharge, and any apparent difference in comparison with the surface waters.
 - (b) Describe any sheen or floating material, or record that it is absent. If present, it could indicate concern about a possible spill or leakage from vehicles or materials storage.
- vi. Location(s) of BMPs in need of maintenance, inspections of all BMPs, including erosion and sediment controls, chemical and waste controls, locations where vehicles enter and exit the site, status of areas that are under temporary or final stabilization, soil stockpile areas, and non-stormwater pollution (for example, paints, oils, fuels, or adhesives) controls.
- vii. Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;
- viii. Location(s) where additional BMPs are needed that did not exist at the time of inspection; and
- ix. Corrective action required and implementation dates.
- x. All revisions and documentation of reasons for changes or modifications to the ESCP and other corrective measures.

2. Recordkeeping

- a. The permit registrant must keep the ESCP, all revisions to the ESCP, and all visual monitoring records on site.
- b. Upon request, the permit registrant must deliver the above records to DEQ, Agent, or the local municipality within three (3) working days of the request.
- c. During inactive periods of greater than seven (7) consecutive calendar days, the above records must be retained by the permit registrant but do not need to be at the construction site.
- d. The permit registrant must retain all visual monitoring records for at least three (3) years after termination of permit coverage.

SCHEDULE D SPECIAL CONDITIONS

1. Schedule Precedence

Schedule F contains General Conditions that are included in all general permits issued by DEQ. In the event of any inconsistency between Schedule F and any other schedule of the permit, the requirements in Schedules A through D take precedence.

2. Other Requirements

Registration under this permit does not relieve the permit registrant from all other permitting and licensing requirements. Prior to beginning construction activities, the permit registrant must obtain all other necessary approvals.

3. Termination of Permit Registration

- a. To terminate permit coverage, project registrants must
 - i. Complete and submit a Notice of Termination form to DEQ or Agent.
 - ii. Resolve all outstanding compliance issues.
 - iii. Pay all outstanding permit fees.
- b. If the project never started (there were no permitted activities and no soil disturbance), there are no additional requirements. For all previously-active projects, permit registrants must also:
 - i. Ensure that all final stabilization criteria are met.
 - ii. Submit photo-documentation that depicts site stabilization, unless the site has been inspected by DEQ or Agent.
 - iii. If portions of the property shown in the original ESCP have been sold, the permit registrant must submit an update of the ESCP depicting new site boundaries.
 - iv. For a common plan of development or sale, all portions of the original common plan of development or sale that have been sold must either meet final stabilization criteria (D.3.c) or be covered by the 1200-C or 1200-CN.
- c. Final stabilization is determined by satisfying the following criteria:
 - i. There is no reasonable potential for discharge of a significant amount of construction related sediment or turbidity to surface waters.
 - ii. Construction materials and waste have been removed and disposed of properly. This includes any sediment that was being retained by the temporary erosion and sediment controls.
 - iii. All temporary erosion and sediment controls have been removed and disposed of properly, unless doing so conflicts with local requirements.
 - iv. All soil disturbance activities have stopped and all stormwater discharges from construction activities that are authorized by this permit have ceased.
 - v. All disturbed or exposed areas of the site are covered by either final vegetative stabilization or permanent stabilization measures. However, temporary or permanent stabilization measures are not required for areas that are intended to be left unvegetated or unstabilized following construction (such as dirt access roads, utility pole pads, areas being used for storage of vehicles, equipment, or materials), provided that measures are in place to eliminate or minimize erosion.
- d. Permanent stabilization measures are erosion prevention materials designed to provide long-term protection to underlying soils. This may include but is not limited to buildings, paving, riprap, gabions, or geotextiles.

- e. Final vegetative stabilization means established and uniform (evenly distributed without large bare areas) perennial vegetation, which provides 70 percent or more coverage, with the following exceptions:
 - i. DEQ or Agent may approve less than 70 percent coverage if vegetation is expected to expand, and suitable interim measures (such as mulch or bark) are in place.
 - ii. For sites on which it is difficult to establish 70 percent density (for example, in arid, semiarid, and drought-stricken areas), the registrant must cover planted or seeded area with bio or photo degradable erosion controls designed to prevent erosion without active maintenance.
 - iii. Sites located on land that is currently employed for farm use as defined in ORS 308A.056 (for example, pipelines across crop or range land, or staging areas for highway construction) that are restored to their preconstruction farm use are not subject to these final vegetative stabilization criteria. Areas disturbed that were not previously employed for farm use, and areas that are not being returned to preconstruction farm use, must meet the conditions for final vegetative stabilization.

4. Local Public Agencies Acting as DEQ's Agent

DEQ authorizes local public agencies to act as its Agent in implementing this permit if they entered into a Memorandum of Agreement (MOA). The Agent may be authorized to conduct the following activities, including but not limited to: application and ESCP review, inspections, monitoring data review, stormwater monitoring and enforcement.

5. Permit-Specific Definitions

- a. *Agent* means a governmental entity that has an agreement with DEQ to administer this general permit within their jurisdictional boundaries.
- b. *Agricultural Land* means cropland, grassland, rangeland, pasture, and other land on which agricultural or forest-related products or livestock are produced. Agricultural lands include cropped woodland, marshes, incidental areas included in the agricultural operation, and other types of land used for the production of livestock.
- c. *Best Management Practices or BMPs* means schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural or managerial practices to prevent or reduce the pollution of waters of the state. BMPs include treatment systems, erosion and sediment control, source control, and operating procedures and practices to control site runoff, spillage or leaks, and waste disposal.
- d. *Borrow Area* means the area from which material is excavated to be used as fill material in another area.
- e. *Clean Water Act or CWA* means the Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, and 97-117; USC 1251 et seq.
- f. *Conveyance System* means, for the purposes of this permit, a sewer, ditch, pipe, channel, swale or similar component that is designed to carry water; or any combination of such components.
- g. *DEQ* means the Oregon Department of Environmental Quality.
- h. *Detention* means the temporary storage of stormwater to improve quality or reduce the volumetric flow rate of discharge or both.
- i. *Dewatering* means the removal and disposal of surface water or groundwater during site construction.
- j. *Discharge Point* means the location where stormwater leaves the site. It includes the location where stormwater is discharged to surface water or a stormwater conveyance system.
- k. *Erosion* means the movement of soil particles or rock fragments by water or wind.
- l. *Erosion and Sediment Control BMPs* means BMPs that are intended to prevent erosion and sedimentation, such as preserving natural vegetation, seeding, mulching and matting, plastic

covering, sediment fences, and sediment traps and ponds. Erosion and sediment control BMPs are synonymous with stabilization and structural BMPs.

- m. *Hazardous Materials* means the materials defined in 40 CFR part 302 Designation, Reportable Quantities, and Notification.
- n. *Legally Authorized Representative* means the following (please see 40 CFR §122.22 for more detail, if needed):
 - For a corporation - president, secretary, treasurer, vice-president, or any person who performs principal business functions; or a manager of one or more facilities that is authorized in accordance to corporate procedure to sign such documents.
 - For a partnership - general partner.
 - For a sole proprietorship - Owner(s) [each owner must sign the application].
 - For a city, county, state, federal, or other public facility - principal executive officer or ranking elected official.
 - For a Limited Liability Company - Member [articles of organization].
 - For trusts – Acting trustee.
- o. *Local Government* means any county, city, town, or service district.
- p. *National Pollutant Discharge Elimination System or NPDES* means the national program under Section 402 of the Clean Water Act for regulation of point source discharges of pollutants to waters of the United States.
- q. *Natural Buffer* means, for the purposes of this permit, an area of undisturbed natural cover surrounding surface waters within which construction activities are restricted. Natural cover includes the natural vegetation, exposed rock, and barren ground that existed prior to commencement of earth-disturbing activities.
- r. *Natural Vegetation* means vegetation that occurs spontaneously without regular management, maintenance, or species introductions or removals. For purposes of this permit, this includes invasive species.
- s. *Non-Stormwater Pollution Controls* means general site and materials management measures that directly or indirectly aid in minimizing the discharge of sediment and other construction related pollutants from the construction site.
- t. *Owner or operator* means the owner or operator of any “facility or activity” subject to regulation under the NPDES program. Owners or operators may be individuals or other legal entities.
 - i. Operator for the purposes of this permit, means any person associated with a construction project that meets either of the following two criteria:
 - (1) The person has operational control over construction plans and specifications, including the authority to make modifications to those plans and specifications; or
 - (2) The person has day-to-day operational control of those activities at a project which are necessary to ensure compliance with a ESCP for the site or other permit conditions (for example, they are authorized to direct workers at a site to carry out activities required by the ESCP or comply with other permit conditions).
 - ii. Owner for the purposes of this permit means any person with a legal interest in the permitted activities or the property on which the permitted activities occur.
- u. *Permit Registrant* means the owner or operator of the construction activity regulated by this permit that has submitted an application and received notice of registration under this general permit by DEQ or Agent.
- v. *Person* means not only individuals, but also includes, corporations, associations, firms, partnerships, joint stock companies, public and municipal corporations, political subdivisions, the state and any agencies thereof, and the federal government and any agencies thereof.
- w. *Pollutant* as defined in 40 CFR §122.2 means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, domestic sewage sludge (biosolids), munitions, chemical

wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, soil, cellar dirt and industrial, municipal, and agricultural waste discharge into water. It does not mean sewage from vessels within the meaning of section 312 of the FWPCA, nor does it include dredged or fill material discharged in accordance with a permit issued under section 404 of the FWPCA.

- x. *Pollution or Water Pollution* as defined by ORS 468B.005(3) means such alteration of the physical, chemical or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state, which will or tends to, either by itself or in connection with any other substance, create a public nuisance or which will or tends to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life or the habitat thereof.
- y. *Runoff Controls* means BMPs that are designed to control the peak volume and flow rate or to prevent scour due to concentrated flows.
- z. *Sediment* means mineral or organic matter, typically deposited by water, air, or ice.
- aa. *Site* means the area where the construction activity is physically located or conducted.
- bb. *Stormwater Conveyance* means a sewer, ditch, or swale that is designed to carry stormwater; a stormwater conveyance may also be referred to as a storm drain or storm sewer.
- cc. *Stormwater as defined by 40 CFR §122.26(b)(13)* means stormwater runoff, snow melt runoff, and surface runoff and drainage.
- dd. *Surface Runoff* means that portion of stormwater that does not infiltrate into the ground or evaporate, but instead flows onto adjacent land or watercourses or is routed to stormwater conveyance systems.
- ee. *Surface Water* means all water naturally open to the atmosphere (for example, rivers, lakes, reservoirs, ponds, streams, impoundments, oceans, estuaries, springs, etc.).
- ff. *Total Maximum Daily Load or TMDL* means a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet state water quality standards. It is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. Percentages of the TMDL are allocated by DEQ to the various pollutant sources.
- gg. *Turbidity* means the optical condition of waters caused by suspended or dissolved particles or colloids that scatter and absorb light rays instead of transmitting light in straight lines through the water column. Turbidity may be expressed as nephelometric turbidity units (NTUs) measured with a calibrated turbidity meter.
- hh. *Underground Injection Control* means any system, structure, or activity that is created to place fluid below the ground or sub-surface (for example, sumps, infiltration galleries, drywells, trench drains, drill holes, etc.)
- ii. *Water or Waters of the State as defined by ORS 468B.005(8)* means lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters which do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the state or within its jurisdiction.

SCHEDULE F
NPDES GENERAL CONDITIONS – INDUSTRIAL FACILITIES
October 1, 2015 Version

SECTION A. STANDARD CONDITIONS

A1. Duty to Comply with Permit

The permittee must comply with all conditions of this permit. Failure to comply with any permit condition is a violation of Oregon Revised Statutes (ORS) 468B.025 and the federal Clean Water Act and is grounds for an enforcement action. Failure to comply is also grounds for DEQ to terminate, modify and reissue, revoke, or deny renewal of a permit.

A2. Penalties for Water Pollution and Permit Condition Violations

The permit is enforceable by DEQ or EPA, and in some circumstances also by third-parties under the citizen suit provisions of 33 USC § 1365. DEQ enforcement is generally based on provisions of state statutes and Environmental Quality Commission (EQC) rules, and EPA enforcement is generally based on provisions of federal statutes and EPA regulations.

ORS 468.140 allows DEQ to impose civil penalties up to \$25,000 per day for violation of a term, condition, or requirement of a permit. The federal Clean Water Act provides for civil penalties not to exceed \$37,500 and administrative penalties not to exceed \$16,000 per day for each violation of any condition or limitation of this permit.

Under ORS 468.943, unlawful water pollution in the second degree, is a Class A misdemeanor and is punishable by a fine of up to \$25,000, imprisonment for not more than one year, or both. Each day on which a violation occurs or continues is a separately punishable offense. The federal Clean Water Act provides for criminal penalties of not more than \$50,000 per day of violation, or imprisonment of not more than 2 years, or both for second or subsequent negligent violations of this permit.

Under ORS 468.946, unlawful water pollution in the first degree is a Class B felony and is punishable by a fine up to \$250,000, imprisonment for not more than 10 years or both. The federal Clean Water Act provides for criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment of not more than 3 years, or both for knowing violations of the permit. In the case of a second or subsequent conviction for knowing violation, a person is subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than 6 years, or both.

A3. Duty to Mitigate

The permittee must take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit. In addition, upon request of DEQ, the permittee must correct any adverse impact on the environment or human health resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

A4. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and have the permit renewed. The application must be submitted at least 180 days before the expiration date of this permit.

DEQ may grant permission to submit an application less than 180 days in advance but no later than the permit expiration date.

A5. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause including, but not limited to, the following:

- a. Violation of any term, condition, or requirement of this permit, a rule, or a statute.
- b. Obtaining this permit by misrepresentation or failure to disclose fully all material facts.
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.
- d. The permittee is identified as a Designated Management Agency or allocated a wasteload under a total maximum daily load (TMDL).
- e. New information or regulations.
- f. Modification of compliance schedules.
- g. Requirements of permit reopener conditions.
- h. Correction of technical mistakes made in determining permit conditions.
- i. Determination that the permitted activity endangers human health or the environment.
- j. Other causes as specified in 40 CFR §§ 122.62, 122.64, and 124.5.

The filing of a request by the permittee for a permit modification, revocation or reissuance, termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

A6. Toxic Pollutants

The permittee must comply with any applicable effluent standards or prohibitions established under Oregon Administrative Rules (OAR) 340-041-0033 and 307(a) of the federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the federal Clean Water Act within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

A7. Property Rights and Other Legal Requirements

The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege, or authorize any injury to persons or property or invasion of any other private rights, or any infringement of federal, tribal, state, or local laws or regulations.

A8. Permit References

Except for effluent standards or prohibitions established under section 307(a) of the federal Clean Water Act and OAR 340-041-0033 for toxic pollutants, and standards for sewage sludge use or disposal established under section 405(d) of the federal Clean Water Act, all rules and statutes referred to in this permit are those in effect on the date this permit is issued.

A9. Permit Fees

The permittee must pay the fees required by OAR.

SECTION B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

B1. Proper Operation and Maintenance

The permittee must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires

the operation of back-up or auxiliary facilities or similar systems that are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

B2. Need to Halt or Reduce Activity Not a Defense

For industrial or commercial facilities, upon reduction, loss, or failure of the treatment facility, the permittee must, to the extent necessary to maintain compliance with its permit, control production or all discharges or both until the facility is restored or an alternative method of treatment is provided. This requirement applies, for example, when the primary source of power of the treatment facility fails or is reduced or lost. It is not a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

B3. Bypass of Treatment Facilities

a. Definitions

- (1) "Bypass" means intentional diversion of waste streams from any portion of the treatment facility. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, provided the diversion is to allow essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs b and c of this section.
- (2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Prohibition of bypass.

- (1) Bypass is prohibited and DEQ may take enforcement action against a permittee for bypass unless:
 - i. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - ii. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventative maintenance; and
 - iii. The permittee submitted notices and requests as required under General Condition B3.c.
- (2) DEQ may approve an anticipated bypass, after considering its adverse effects and any alternatives to bypassing, when DEQ determines that it will meet the three conditions listed above in General Condition B3.b(1).

c. Notice and request for bypass.

- (1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, a written notice must be submitted to DEQ at least ten days before the date of the bypass.
- (2) Unanticipated bypass. The permittee must submit notice of an unanticipated bypass as required in General Condition D5.

B4. Upset

- a. Definition. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent

- caused by operation error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.
- b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of General Condition B4.c are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
 - c. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - (1) An upset occurred and that the permittee can identify the causes(s) of the upset;
 - (2) The permitted facility was at the time being properly operated;
 - (3) The permittee submitted notice of the upset as required in General Condition D5, hereof (24-hour notice); and
 - (4) The permittee complied with any remedial measures required under General Condition A3 hereof.
 - d. Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

B5. Treatment of Single Operational Upset

For purposes of this permit, a single operational upset that leads to simultaneous violations of more than one pollutant parameter will be treated as a single violation. A single operational upset is an exceptional incident that causes simultaneous, unintentional, unknowing (not the result of a knowing act or omission), temporary noncompliance with more than one federal Clean Water Act effluent discharge pollutant parameter. A single operational upset does not include federal Clean Water Act violations involving discharge without a NPDES permit or noncompliance to the extent caused by improperly designed or inadequate treatment facilities. Each day of a single operational upset is a violation.

B6. Public Notification of Effluent Violation

If effluent limitations specified in this permit are exceeded or an overflow occurs that threatens public health, the permittee must take such steps as are necessary to alert the public, health agencies and other affected entities (for example, public water systems) about the extent and nature of the discharge in accordance with the notification procedures developed under General Condition B7. Such steps may include, but are not limited to, posting of the river at access points and other places, news releases, and paid announcements on radio and television.

B7. Emergency Response and Public Notification Plan

The permittee must develop and implement an emergency response and public notification plan that identifies measures to protect public health from bypasses or upsets that may endanger public health. At a minimum the plan must include mechanisms to:

- a. Ensure that the permittee is aware (to the greatest extent possible) of such events;
- b. Ensure notification of appropriate personnel and ensure that they are immediately dispatched for investigation and response;
- c. Ensure immediate notification to the public, health agencies, and other affected entities (including public water systems). The response plan must identify the public health and other officials who will receive immediate notification;
- d. Ensure that appropriate personnel are aware of and follow the plan and are appropriately trained;
- e. Provide emergency operations; and

f. Ensure that DEQ is notified of the public notification steps taken.

B8. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters must be disposed of in such a manner as to prevent any pollutant from such materials from entering waters of the state, causing nuisance conditions, or creating a public health hazard.

SECTION C. MONITORING AND RECORDS

C1. Representative Sampling

Sampling and measurements taken as required herein must be representative of the volume and nature of the monitored discharge. All samples must be taken at the monitoring points specified in this permit, and must be taken, unless otherwise specified, before the effluent joins or is diluted by any other waste stream, body of water, or substance. Monitoring points must not be changed without notification to and the approval of DEQ. Samples must be collected in accordance with requirements in 40 CFR part 122.21 and 40 CFR part 403 Appendix E.

C2. Flow Measurements

Appropriate flow measurement devices and methods consistent with accepted scientific practices must be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices must be installed, calibrated and maintained to insure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected must be capable of measuring flows with a maximum deviation of less than ± 10 percent from true discharge rates throughout the range of expected discharge volumes.

C3. Monitoring Procedures

Monitoring must be conducted according to test procedures approved under 40 CFR part 136 or, in the case of sludge (biosolids) use and disposal, approved under 40 CFR part 503 unless other test procedures have been specified in this permit.

For monitoring of recycled water with no discharge to waters of the state, monitoring must be conducted according to test procedures approved under 40 CFR part 136 or as specified in the most recent edition of Standard Methods for the Examination of Water and Wastewater unless other test procedures have been specified in this permit or approved in writing by DEQ.

C4. Penalties for Tampering

The federal Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit may, upon conviction, be punished by a fine of not more than \$10,000 per violation, imprisonment for not more than two years, or both. If a conviction of a person is for a violation committed after a first conviction of such person, punishment is a fine not more than \$20,000 per day of violation, or by imprisonment of not more than four years, or both.

C5. Reporting of Monitoring Results

Monitoring results must be summarized each month on a discharge monitoring report form approved by DEQ. The reports must be submitted monthly and are to be mailed, delivered or otherwise transmitted by the 15th day of the following month unless specifically approved otherwise in Schedule B of this permit.

C6. Additional Monitoring by the Permittee

If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR part 136 or, in the case of sludge (biosolids) use and disposal, approved under 40 CFR part 503 or as specified in this permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the discharge monitoring report. Such increased frequency must also be indicated. For a pollutant parameter that may be sampled more than once per day (for example, total residual chlorine), only the average daily value must be recorded unless otherwise specified in this permit.

C7. Averaging of Measurements

Calculations for all limitations that require averaging of measurements must utilize an arithmetic mean, except for bacteria which must be averaged as specified in this permit.

C8. Retention of Records

Records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities must be retained for a period of at least 5 years (or longer as required by 40 CFR part 503). Records of all monitoring information including all calibration and maintenance records, all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit and records of all data used to complete the application for this permit must be retained for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of DEQ at any time.

C9. Records Contents

Records of monitoring information must include:

- a. The date, exact place, time, and methods of sampling or measurements;
- b. The individual(s) who performed the sampling or measurements;
- c. The date(s) analyses were performed;
- d. The individual(s) who performed the analyses;
- e. The analytical techniques or methods used; and
- f. The results of such analyses.

C10. Inspection and Entry

The permittee must allow DEQ or EPA upon the presentation of credentials to:

- a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- d. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by state law, any substances or parameters at any location.

C11. Confidentiality of Information

Any information relating to this permit that is submitted to or obtained by DEQ is available to the public unless classified as confidential by the Director of DEQ under ORS 468.095. The permittee may request that information be classified as confidential if it is a trade secret as defined by that statute. The name and address of the permittee, permit applications, permits, effluent data, and information required by NPDES application forms under 40 CFR § 122.21 are not classified as confidential [40 CFR § 122.7(b)].

SECTION D. REPORTING REQUIREMENTS

D1. Planned Changes

The permittee must comply with OAR 340-052, "Review of Plans and Specifications" and 40 CFR § 122.41(l)(1). Except where exempted under OAR 340-052, no construction, installation, or modification involving disposal systems, treatment works, sewerage systems, or common sewers may be commenced until the plans and specifications are submitted to and approved by DEQ. The permittee must give notice to DEQ as soon as possible of any planned physical alternations or additions to the permitted facility.

D2. Anticipated Noncompliance

The permittee must give advance notice to DEQ of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements.

D3. Transfers

This permit may be transferred to a new permittee provided the transferee acquires a property interest in the permitted activity and agrees in writing to fully comply with all the terms and conditions of the permit and EQC rules. No permit may be transferred to a third party without prior written approval from DEQ. DEQ may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under 40 CFR § 122.61. The permittee must notify DEQ when a transfer of property interest takes place.

D4. Compliance Schedule

Reports of compliance or noncompliance with, or any progress reports on interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date. Any reports of noncompliance must include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirements.

D5. Twenty-Four Hour Reporting

The permittee must report any noncompliance that may endanger health or the environment. Any information must be provided orally (by telephone) within 24 hours from the time the permittee becomes aware of the circumstances, unless a shorter time is specified in the permit. During normal business hours, the DEQ regional office must be called. Outside of normal business hours, DEQ must be contacted at 1-800-452-0311 (Oregon Emergency Response System).

The following must be included as information that must be reported within 24 hours under this paragraph:

- a. Any unanticipated bypass that exceeds any effluent limitation in this permit;
- b. Any upset that exceeds any effluent limitation in this permit;
- c. Violation of maximum daily discharge limitation for any of the pollutants listed by DEQ in this permit; and
- d. Any noncompliance that may endanger human health or the environment.

A written submission must also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission must contain:

- e. A description of noncompliance and its cause;
- f. The period of noncompliance, including exact dates and times;
- g. The estimated time noncompliance is expected to continue if it has not been corrected;

- h. Steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance; and
- i. Public notification steps taken, pursuant to General Condition B7.

DEQ may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

D6. Other Noncompliance

The permittee must report all instances of noncompliance not reported under General Condition D4 or D5, at the time monitoring reports are submitted. The reports must contain:

- a. A description of the noncompliance and its cause;
- b. The period of noncompliance, including exact dates and times;
- c. The estimated time noncompliance is expected to continue if it has not been corrected; and
- d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

D7. Duty to Provide Information

The permittee must furnish to DEQ within a reasonable time any information that DEQ may request to determine compliance with the permit or to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit. The permittee must also furnish to DEQ, upon request, copies of records required to be kept by this permit.

Other Information: When the permittee becomes aware that it has failed to submit any relevant facts or has submitted incorrect information in a permit application or any report to DEQ, it must promptly submit such facts or information.

D8. Signatory Requirements

All applications, reports or information submitted to DEQ must be signed and certified in accordance with 40 CFR § 122.22.

D9. Falsification of Information

Under ORS 468.953, any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, is subject to a Class C felony punishable by a fine not to exceed \$125,000 per violation and up to 5 years in prison per ORS chapter 161. Additionally, according to 40 CFR § 122.41(k)(2), any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit including monitoring reports or reports of compliance or non-compliance will, upon conviction, be punished by a federal civil penalty not to exceed \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

D10. Changes to Discharges of Toxic Pollutant

The permittee must notify DEQ as soon as it knows or has reason to believe the following:

- a. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in the permit, if that discharge will exceed the highest of the following “notification levels:
 - (1) One hundred micrograms per liter (100 µg/l);
 - (2) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;
 - (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR § 122.21(g)(7); or

- (4) The level established by DEQ in accordance with 40 CFR § 122.44(f).
- b. That any activity has occurred or will occur that would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant that is not limited in the permit, if that discharge will exceed the highest of the following “notification levels”:
 - (1) Five hundred micrograms per liter (500 µg/l);
 - (2) One milligram per liter (1 mg/l) for antimony;
 - (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR § 122.21(g)(7); or
 - (4) The level established by DEQ in accordance with 40 CFR § 122.44(f).

SECTION E. DEFINITIONS

- E1. *BOD* or *BOD₅* means five-day biochemical oxygen demand.
- E2. *CBOD* or *CBOD₅* means five-day carbonaceous biochemical oxygen demand.
- E3. *TSS* means total suspended solids.
- E4. *Bacteria* means but is not limited to fecal coliform bacteria, total coliform bacteria, *Escherichia coli* (*E. coli*) bacteria, and *Enterococcus* bacteria.
- E5. *FC* means fecal coliform bacteria.
- E6. *Total residual chlorine* means combined chlorine forms plus free residual chlorine
- E7. *Technology based permit effluent limitations* means technology-based treatment requirements as defined in 40 CFR § 125.3, and concentration and mass load effluent limitations that are based on minimum design criteria specified in OAR 340-041.
- E8. *mg/l* means milligrams per liter.
- E9. *µg/l* means microgram per liter.
- E10. *kg* means kilograms.
- E11. *m³/d* means cubic meters per day.
- E12. *MGD* means million gallons per day.
- E13. *Average monthly effluent limitation* as defined at 40 CFR § 122.2 means the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.
- E14. *Average weekly effluent limitation* as defined at 40 CFR § 122.2 means the highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.
- E15. *Daily discharge* as defined at 40 CFR § 122.2 means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the daily discharge must be calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge must be calculated as the average measurement of the pollutant over the day.
- E16. *24-hour composite sample* means a sample formed by collecting and mixing discrete samples taken periodically and based on time or flow.
- E17. *Grab sample* means an individual discrete sample collected over a period of time not to exceed 15 minutes.
- E18. *Quarter* means January through March, April through June, July through September, or October through December.
- E19. *Month* means calendar month.
- E20. *Week* means a calendar week of Sunday through Saturday.

Construction Stormwater Best Management Practices Manual

1200-C NPDES General Permit

March, 2013



State of Oregon
Department of
Environmental
Quality

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Surface Water Section**
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DEQ is a leader in restoring, maintaining and enhancing the quality of Oregon's air, land and water.

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Alternative formats (Braille, large type) of this document can be made available.
Contact DEQ's Office of Communications & Outreach, Portland, at (503) 229-5696, or toll-free in Oregon at 1-800-452-4011, ext. 5696.

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Chapter 1 Introduction

Regulatory Overview

The NPDES program was established by federal legislation as part of the Clean Water Act to improve the quality of stormwater from industries, or industrial type activities. Discharges to waters of the State may not contain pollutants or characteristics in levels that would cause the receiving water body to fail to meet water quality standards. The Oregon water quality standard for turbidity (Oregon Administrative Rule 340-041-0036) includes the requirement that “No more than a ten percent cumulative increase in natural stream turbidities may be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity.”

All point source discharges of pollutants from non-point sources, including those from construction sites, to federal waters (such as lakes, rivers and wetlands) must be authorized by a permit. In Oregon, a permit is required for construction activities with one acre or more of disturbed soil or that are part of a larger common plan of development or sale and discharge to surface waters. Operators must obtain a National Pollutant Discharge Elimination System (NPDES) General Stormwater Discharge Permit 1200-C for construction unless they can be covered under a local code or permit from a limited number of local government agencies and are under five disturbed acres.

Best Management Practices (BMPs) are a key component of the Erosion Sediment Control Plans (ESCPs) required by the 1200-C permit. BMPs are measures or controls that reduce pollutants at the source to prevent the pollution of stormwater runoff discharged from the site. These practices can also be used to divert runoff away from areas of exposure to pollutants, or to treat stormwater runoff before discharge to receiving waters. BMPs are designed to address the quality of a site’s practices with respect to stormwater leaving the site, and to meet environmental water quality standards or benchmarks. BMPs are most effective when organized into a comprehensive Erosion and Sediment Control Plan.

Rather than delineate particular practices that all sites should adhere to, the NPDES sets standards for minimum allowed pollution benchmarks that allow the permittee to select technologies to meet those standards. The stormwater discharge permit does not generally require specific BMPs because the practices should be selected on a case-by-case basis depending on the particular conditions at the site, such as the quantity of rainfall reaching the site, the area of land available for constructing management practices, costs in implementing the practices, site slope and soil type.

The best way to use this guide is to assess your site and your stormwater discharge(s). Determine the best BMPs for the site conditions that will have the most impact on the discharge(s). Select BMPs that will be most effective in controlling pollution in the stormwater discharges for the resources and costs that will be required to implement those BMPs (Refer to DEQ’s *Construction Stormwater Erosion and Sediment Control Manual* for detailed information on selecting BMPs). Implement the BMPs selected and check the stormwater discharges to verify the anticipated results of the BMP implementation and determine if more BMPs will be required in order to meet the benchmarks or water quality standards for the various pollutants of concern.

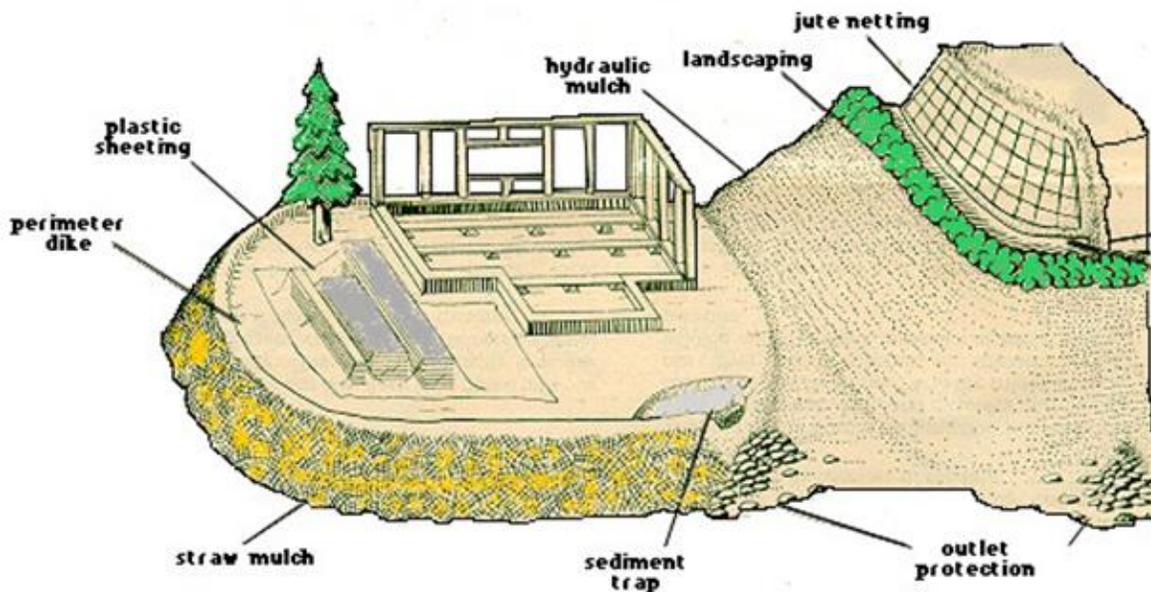
The BMPs included in this document are a work-in-progress and are by no means to be considered a complete list of appropriate erosion control measures. New technologies are continually being developed and refined. Additional BMPs will be added periodically to this

1200-C Construction Best Management Practices

document as they are found to be reliable and effective. Some BMPs may be removed from the document if field use shows that they are not reliable, effective, or cost effective.

Construction Stormwater BMPs

The BMPs included in this guidance document are related to source reduction and treatment methods for specific processes and activities at construction sites. In addition, the preventive measures mentioned may assist the facility in achieving stormwater discharge benchmarks and limitations or water quality standards through pollution prevention. All of the BMPs recommended in this guidance are intended to complement, not conflict with, existing state and federal regulations regarding the handling, containment, or treatment of any material or waste.



Flagging

Flagged poles or stakes can be used to mark storm drains, catch basins, curb inlets, and so on. This helps protect sediment controls from being hit by cars and street cleaners, buried under mounds of soil, or lost in fields of high grasses.



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BMP Removal

Temporary sediment and erosion control BMPs must be removed. At the conclusion of the construction project, after vegetation is reestablished, temporary erosion and sediment controls such as sediment fences, catch basin insert bags, and biobags should be removed from the construction site. Prior to their removal, the up-gradient sediment trapped by the erosion control should be removed by a vacuum truck, shovel, sweeping, or other method. Failure to remove the retained sediment will result in sediment being released to the receiving stream and negate the reason for installing the controls.

Chapter 2: Best Management Practices

2.1 Preserve Existing Vegetation

Description:



Preserving the existing vegetation on a construction site is frequently the best preventative measure for erosion - and the least expensive. Vegetation limits the capacity of flowing water to detach soil particles and transport sediment by decreasing the velocity of raindrops as they hit the ground and by decreasing runoff volume. Native or existing vegetation is adapted to local climate and soil conditions and typically has fewer pests, minimizing the amount of maintenance, and therefore is usually a better cover species than introduced species.

Basic Design and Construction:

- Do not remove existing vegetation unless absolutely necessary.
- Preserve existing vegetation on all steep, unstable slopes whenever possible.
- Preserve mature trees when at all possible. With their extensive root systems and large canopies, mature trees serve important erosion control functions.
- Avoid compaction and grading of soils close to trees. Compaction (for example, from parking or driving too close to the tree) restricts the movement of gases and water. Grading of soils close to trees often will damage roots and cause existing trees to decline and die.
- Do not pile soil on top of roots, because this cuts off the air supply and suffocates the tree.
- Establish "do not disturb" zones on your site by marking off areas with stakes and tape or fencing. Extend do not disturb zones at least to the dripline of preserved trees.
- When lowering the grade of the site, terrace around the tree and support the soil with a retaining wall so that tree roots are not exposed.
- Where trenches may cut through the root system, minimize damage by tunneling under the roots rather than trenching through them.

Maintenance:

- Minimize the impact of construction activities on existing vegetation.
- Irrigate in dry months.
- Monitor for the presence of pests or disease that will weaken the plant population.
- Inspect and repair boundary tape or fencing.

2.2 Vegetated Filter Strip

Description:

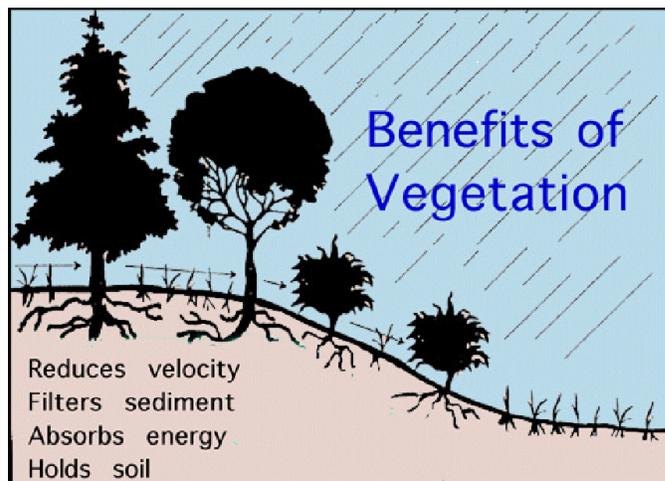
Vegetated filter strips are land areas of either indigenous or planted vegetation, adjacent to a disturbed area. They reduce flow and remove sediment and other pollutants from runoff and wastewater by infiltration, deposition, absorption, adsorption, and decomposition. The longer the flow path of stormwater through vegetation, the better the pollutant removal.

Design Considerations:

- Vegetated filter strips are designed to be used under conditions in which runoff passes over the vegetation in a uniform sheet flow. Such a flow is critical to the success of the filter strip. If runoff is allowed to concentrate, vegetation will be easily inundated and will not perform to its fullest capability.
- A filter strip is an edge-of-the-site BMP. Therefore, other BMPs that are designed to reduce soil loss are usually needed in conjunction with vegetated strips.
- Quality of vegetation in the filter strip is an important factor in determining effectiveness. Poor quality vegetation may result in increased amounts of sediment leaving the filter.
- If pollutants other than soil are to be targeted, then select the vegetation for the pollutant of concern.

Design and Construction Specifications:

- Limit the contributing area to 10 acres.
- The appropriate size and shape of the filter strip is dependent on a number of factors, including the type and quantity of pollutants, soil characteristics, infiltration rate, permeability, and slope.
- Keep slopes moderate to prevent channelized flow from forming. Length and width should be at least 50 feet and 20 feet (EPA, 1996) but width (flow direction) may be as little as 5 feet, depending on slope and loading.
- Regrading may be necessary to ensure a gentle slope of no more than 5 percent for short width strips or to roughen the soil.
- Remove trees, brush, stumps, rocks and similar materials that could interfere with installing the filter strip.
- For planted filter strips, a roughened surface (cat tracked) is preferred to slow surface runoff and thus increase infiltration.
- When constructing a filter strip, use a device such as a level spreader to ensure that runoff passes through as sheet flow.
- Select plants that have dense top-growth and provide good, uniform soil cover, and a fibrous root system for stability. Use vegetation adapted to local soil and climatic conditions and that has good regrowth following dormancy and cutting.
- Grasses are more effective than broadleaf plants for erosion control since they form a dense sod, have a fibrous root system and a more complete ground cover.
- Mark filter strips with stakes and tape or fencing.



(Image courtesy of Clean Water Services; adapted)

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Maintenance:

- Frequent inspections are necessary the first few years until vegetation is well established.
- Periodic regrading and sediment removal may be necessary.
- Encourage high plant density by fertilizing and weeding periodically. Reseeding may also be necessary.
- Minimize the development of erosion channels within the filter. Even small channels may allow runoff to bypass the filter.
- Inspect and repair boundary tape or fencing.

2.3 Reestablish Vegetative Cover

Description:

Vegetative cover acts as either a permanent cover or as a temporary measure prior to permanently stabilizing an area. Vegetation shields the soil from the direct impact of rainfall or runoff, increases soil porosity and water storage capacity of the soil, reduces the energy of the runoff, and physically holds the soil in place with the root system of the vegetation. The most effective practice is to establish vegetation on an area as work as completed on that area, rather than waiting until all project work is complete. Reestablishing vegetation can be accomplished by seeding, seeding and mulching, seeding and matting, or sodding. Maintenance may be required to successfully replant an area. This practice is not suited for areas that carry heavy traffic.

Design Considerations:

Apply mulch to areas which cannot be seeded due to the season or other issues, or to exposed soils that need immediate cover and protection. Mulch can also be applied to newly seeded areas to provide protection and cover until seed is established. Suitable mulch materials include tackified or blown straw, corn stalks, compost, and bonded fiber mix mulch. Use material that is dry and free of weeds and seeds (except that compost and bonded fiber mix mulch are applied moist). In dry weather the mulch may need to be anchored with netting or a fiber and tackifier to prevent it from blowing away. Check all mulched areas should be checked for spots where mulch has blown away or been pushed together.

Design and Construction Specifications:

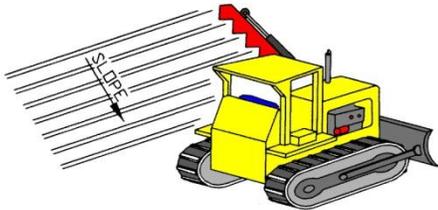
- Spread 4-6" of topsoil or compost over the site before seeding or planting.
- Fertilize according to soil test recommendations. Use a time release fertilizer.
- Use seed mix recommendations from local suppliers. Base seed mixes upon the time of year seeding is taking place. Use low maintenance, native grasses.
- Plant shrubs 2'-5' apart; trees 6'-10' for wooded areas.
- Mulch with tackified loose straw, or blown straw, or provide close knit matting.
- Water as needed to keep soil moist.
- If planting is done in July through September, irrigation may be necessary.

Maintenance:

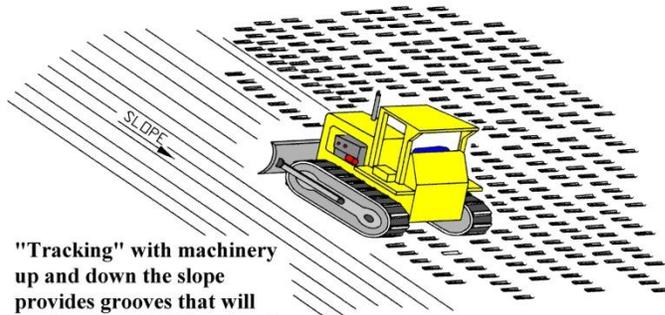
- Fertilize and water as recommended by supplier.
- Re-seed areas where adequate cover has not been established.

2.4 Hydroseeding, Mulching and Tackifiers

Hydroseeding:



Note:
Groove by cutting serrations along the contour. Irregularities in the soil surface catch rainwater, seed, mulch and fertilizer.



"Tracking" with machinery up and down the slope provides grooves that will catch seed, rainfall, and reduce runoff.

Hydroseeding is the application of a mulch, seed and fertilizer slurry to establish vegetation and prevent erosion. This is a very economical option that can stabilize slopes until grasses and plants are able to sprout. Most hydroseeding using just the blue green mulch will not provide sufficient vegetation to stabilize the site. A second or third hydroseeding may be necessary in order to establish at least a 90% coverage level. A wide variety of seed mixes are commercially available to suit each site's needs. Mulch provides water retention, soil retention, and protection for germinating seeds away from direct sun and wind. The mulch can reduce the tendency of the seeds to wash away and depending on the type of mulch can retain up to 10 times its weight in water to keep the seeds moist. Mulch can also add a carbon source and adds nutrients to the soil as it decomposes. This is especially true if compost or bonded wood fiber is used with the seed mix. A carbon source and long term nutrients are necessary for long term vegetation establishment.

Grading and minimal compaction of slopes should occur prior to hydroseeding. Ensure that the caterpillar tracks on slopes run perpendicular to the slope in order to provide a damming or mini-terracing effect rather than a channeling of the runoff (see Surface Roughening).



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Mulching:

Mulching is the application of plant material such as compost or straw to the soil surface, and can be used alone, or as part of a hydroseeding mixture as discussed above. It provides immediate temporary protection from erosion. Mulching also improves seed growth by conserving moisture; holding fertilizer, seed and topsoil in place; and moderating soil temperatures. Apply straw and mulch at a rate of at least 1½ -2 tons per acre, until the soil surface is not visible through the mulch. Mulch may need to be held in place by sprayed-on tackifiers or netting.

Straw mulch will need a tackifier if it is spread loose from bales. Use straw that is sterile or contains no straw seeds, wheat, rye, grass seed, etc. other than what is being grown on purpose. If it is blown, shorter straw strands do not appear to be as affected by wind as the longer loose straw, and usually will not require a tackifier.

Tackifiers:

A tackifier is a biodegradable adhesive that can be applied directly to the soil, or over a layer of mulch. It acts as a glue to hold the soil in place or increase the holding power of the mulch. One tackifier used by a local company is a vegetable based adhesive made of guar gum which they import from India. Coagulants and flocculants (polymers) can be used. An interesting product call DriWater^{tm(1)} actually releases water as it biodegrades which may be an advantage when hydroseeding in late summer. Tackifiers or netting are necessary in high or frequent wind areas to hold down straw.

Maintenance:

- As with reestablishing vegetation, regular watering of the seed in the first two weeks is critical for healthy growth. Less watering is needed with use of a compost blanket cover and to some extent a complete straw cover.
- Monitor for the presence of pests or disease that will weaken the plant population.
- Reapply if necessary.

2.5 Compost Cover

Description:

The use of compost cover over newly graded soil can greatly reduce erosion and minimize sediment loss and turbid discharges of stormwater from a construction site. The added benefit of having an excellent vegetative growth media in place when landscape vegetation is installed will greatly enhance the construction site.

Properly installed, the use of a compost cover can eliminate turbid runoff from construction sites for all but the most intense storms. When grading and compacting of a site occurs during construction, the infiltration rate of the resulting soil is greatly reduced (depending on the soil type by as much as twenty percent or more). By tilling in the compost towards the end of the construction just prior to landscaping, the infiltration rate of the soil immediately is enhanced and quickly approaches that of native undisturbed soil. Without some type of soil enhancement such as compost, it may be many years before the infiltration rate for vegetated areas of the site approaches that of the site's natural infiltration rate.

¹ Use of trade names is for illustrative purposes only and should not be construed as a DEQ endorsement of a particular product.

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Design and Construction Specifications:

Prepare underlain soil by grading it smooth; ensure that the finished grades and slopes minimize the potential concentrating of any water runoff. Use of at least three inches of less than 50% moisture content three quarter minus compost on 50 % or less slopes has been shown to greatly reduce turbid runoff and enhance vegetation growth. Extend the compost at least 6 feet up onto the flat portion of a site or into the vegetated undisturbed area.

2.6 Erosion Control Blankets & Geotextiles

Description:

Erosion control blankets are mats of organic fibers or inorganic materials held by synthetic or biodegradable netting. Most blankets are rolled products, but some may be sprayed onto exposed soils. Rolled erosion control products (such as netting, meshes, erosion control blankets, and turf reinforcement mats) come in a variety of materials, including jute, coconut fiber, straw, synthetic materials, plastics or combinations thereof. Geotextiles are permeable fabrics used to separate, filter, reinforce, protect or drain. Because of the versatility of the product, this technology has developed to include geogrids, meshes and cells with a wide range of applications. Geotextiles are commonly made from polypropylene, polyester or from natural material like coir, jute or straw. Depending on the desired use, they can be purchased with increasing degrees of porosity and permeability.

This is a short term measure designed to provide immediate protection until a more permanent stabilization measure can be implemented. Heavy traffic areas are not well suited to this type of protection. Some types of products are manufactured with seed incorporated into the matting, providing protection and moisture to the germinating seeds. This option requires close attention to installation procedures, and may be expensive in large scale applications. It can be very effective, however, if an appropriate medium is selected for the site. Erosion from rain impact is generally prevented if the underlying soil cannot be observed through the matting. With proper installation and maintenance this practice can stabilize the slope and greatly reduce if not eliminate the potential erosion and associated soil in the runoff.



Straw Matting (photo courtesy of Clean Water Services)



Coconut Matting

Design Considerations:

Where water infiltration is not desirable, for example on extremely unstable or steep slopes, an impermeable erosion blanket such as visqueen or other plastic material may be appropriate. In this situation, provide a place where the energy the water has gained can dissipate, such as a slash windrow, brush sediment barrier, or rock blanket at the base of the slope; and provide a means to convey this clean water off the site without contacting

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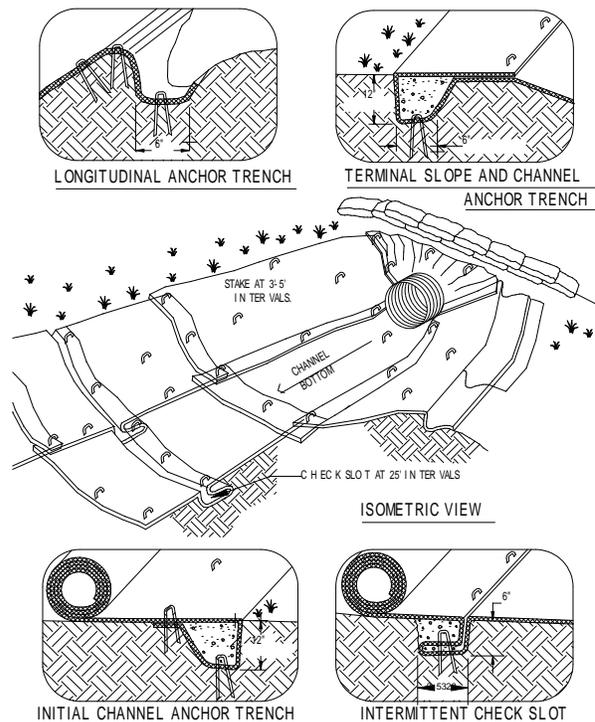
the disturbed soil of the construction site (see the Plastic Sheeting BMP for further details).

Design and Construction Specifications:

- Prepare the soil by grading or raking the soil free of clods and large stones.
- Consider cat tracking (see Surface Roughening BMP).
- If seeding or using fertilizer, add to the soil before installing the mats.
- Overlap blankets at both edges, and at the top and bottom.
- Stake mats with 12 inches minimum staples or stakes to prevent water from seeping under or around the matting. Toe matting in at the top of the slope to keep water from running between the matting and the soil. Jute fabric is reportedly better than coconut due to coconut fiber's tendency to expand and cause the mat to pull up from the soil surface.
- Apply matting by rolling down the slope or in the direction of the water flow.
- Failure to provide good contact of the matting with the slope may allow erosion and slope slippage under the mat and eventually cause failure of the system.

Maintenance:

- Check regularly for rips or locations where the matting is no longer held in place.
- Verify after storms that runoff has not seeped under the matting.

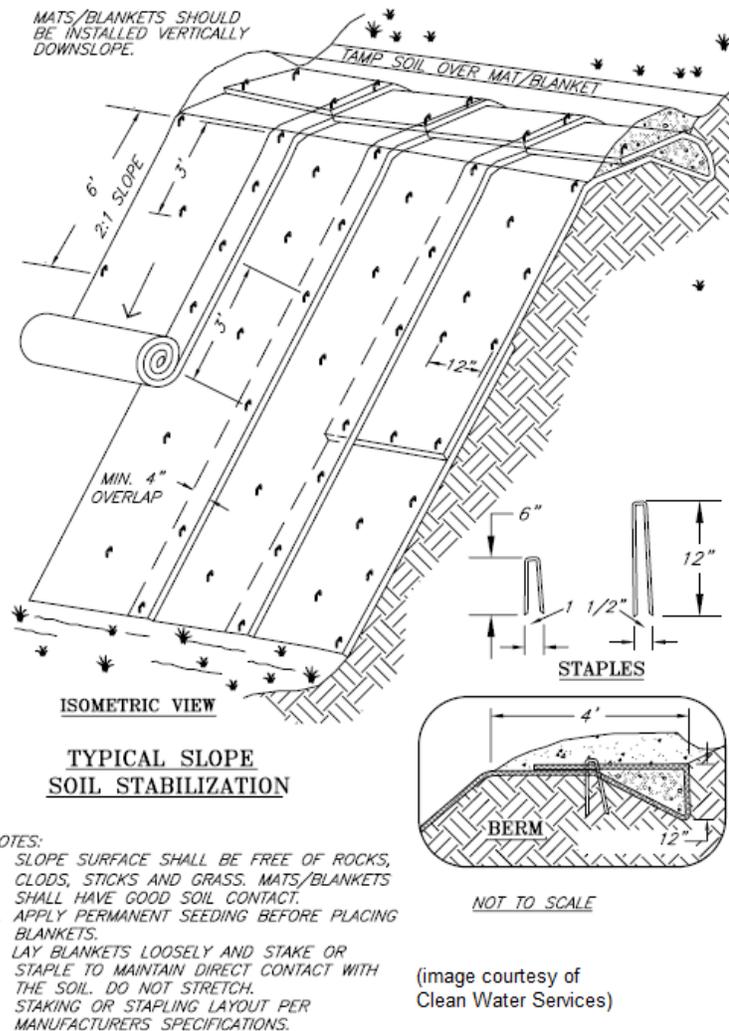


- NOTES
1. CHECK SLOTS TO BE CONSTRUCTED PER MANUFACTURER'S SPECIFICATIONS.
 2. STAKING OR STAPLING LAYOUT PER MANUFACTURER'S SPECIFICATIONS.
 3. STAPLES SHALL BE 12" LONG (MINIMUM).

CHANNEL MATTING NOTES

(figure courtesy of Clean Water Services)

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2.7 Plastic Sheeting

Description:

Plastic sheets (such as black UV resistant visqueen) may be used to temporarily cover soil stockpiles or bare slopes until a more permanent stabilization can occur or until the stockpile is removed. For sites that develop erosion problem areas in the middle of the wet season and it is not possible to make a permanent repair or placement of other BMPs (for example, equipment can't access the area due to the soft soil conditions), consider a temporary placement of plastic sheeting to protect the area and divert runoff away from the area of concern until a more permanent solution can be applied.

Design Considerations:

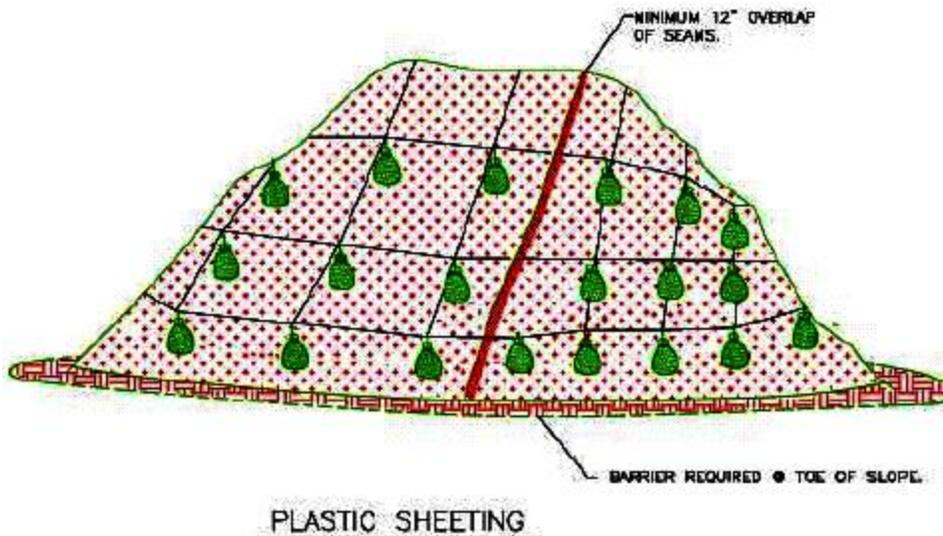
Some method such as a lined ditch should be used to collect and divert the runoff to a pipe slope drain or other device to convey the clean water off of the site. Ensure that roped together sand bags, concrete blocks, tires or other weighted objects are used to hold the plastic in place. Plastic sheeting will sterilize soils in warm weather, killing vegetation and soil biota. Consider using another method (such as mulch or blankets) if preservation of topsoil biota is desirable.

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Maintenance:

- Replace torn sheets and repair open seams.
- Completely remove and replace plastic when it begins to deteriorate.
- Check anchoring system and repair or add anchors.
- Check for erosion; address and repair damage if found.
- Completely remove all plastic once it is no longer needed.



NOTES:

1. MINIMUM 12" OVERLAP OF ALL SEAMS REQUIRED.
2. BARRIER REQUIRED @ TOE OF STOCK PILE.
3. COVERING MAINTAINED TIGHTLY IN PLACE BY USING SANDBAGS OR TIRES ON ROPES WITH A MAXIMUM 10' GRID SPACING IN ALL DIRECTIONS.

(image courtesy of Clean Water Services; adapted)

2.8 Dust Control



Description:

In dry weather, soil is particularly prone to displacement by wind erosion on unpaved roads and construction sites. Use administrative controls and prevention. Dust may be controlled by reducing vehicular speeds, using street sweepers fitted with filters and vacuums, or planting vegetation cover. Irrigation is a temporary measure involving a light application of water to moisten the soil surface. Apply the correct amount of water because excess water could lead to further erosion and tracking of soil off site. When other methods are not adequate or appropriate, use controls such as palliatives (chemical soil treatments) that are applied as spray-on adhesives. The chemicals act to bind soil particles together and form a more durable, resilient ground surface. Common palliatives include calcium chloride, anionic asphalt emulsion, latex emulsion, and resin-water emulsions.

Sandy sites may be able to control erosion of soil by the use of sand (beach erosion) fences, adding a layer of top soil, amended top soil, or compost and planting vegetation. Providing any of these BMPs would also hold water better than watering alone, particularly in sandy areas.



Design Considerations:

- Do not drive vehicles over the treated area to prevent the tracking of the chemicals to other areas on or off the site and to prevent the breaking of the bond holding the fine soils in place.
- Watering is the most common method of dust control, but is also the most temporary. The use of chemicals to treat exposed surfaces generally provides longer dust suppression.
- Dust may also be minimized by limiting the speed of vehicles on the construction site.
- Since certain chemicals may be inappropriate for some soil types or application areas,

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and may be detrimental to the environment, verify application of chemical treatments with DEQ or the local government prior to application.

- Minimize soil exposure by temporary or permanent soil stabilization controls, such as mulching, seeding, applying topsoil, spreading coarse gravel or crushed stone (relatively flat sites only), or planting trees. If existing vegetation on the site can be maintained, this will help in controlling dust.
- Install temporary or permanent windbreaks or barriers that reduce airborne particles by slowing wind velocities and causing the particles to drop out of the air after suspension. Large trees and shrubs left in place can provide wind barriers, while temporary measures include solid board fences, tarp curtains, sediment walls, crate walls, and sand dune fencing.
- Polymers can be used in tackifying and hydroseeding applications, either in temporary erosion control applications or as a part of a final revegetation project. Natural tackifiers such as guar gum are best as some of the polymers may be detrimental to the environment under some conditions.
- In arid regions, use tillage or deep plowing of soil to provide dust control. Large clumps of soil are deposited on top of the finer soil particles, preventing their movement by wind or water.
- Use phased construction to expose only the minimum amount of soil necessary to wind and water.

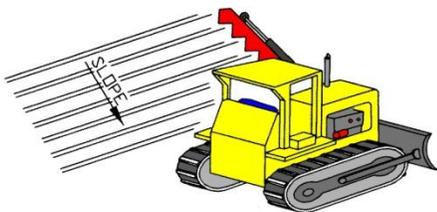
Maintenance:

- Inspect areas requiring dust controls frequently and reapply materials or controls as needed.

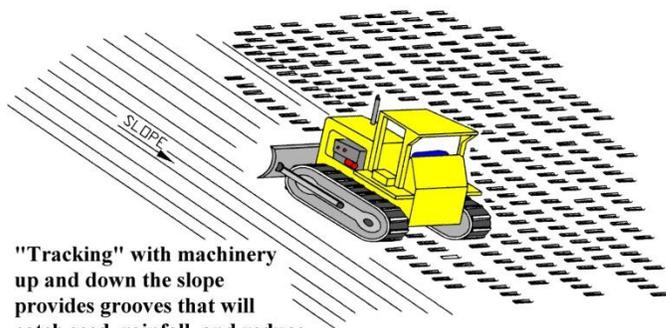
2.9 Surface Roughening

Description:

Surface roughening includes a variety of methods to create ridges or furrows in the soil surface. Leaving slopes in a roughened condition after clearing or creating a rough soil surface with horizontal depressions or grooves will trap seed and reduce runoff velocity. Roughening can be accomplished by 'track walking' slopes with tracked equipment, by using a serrated wing blade attached to the side of a bulldozer, or by other agricultural equipment.



Note:
Groove by cutting serrations along the contour. Irregularities in the soil surface catch rainwater, seed, mulch and fertilizer.



"Tracking" with machinery up and down the slope provides grooves that will catch seed, rainfall, and reduce runoff.

Design Considerations:

- Do not rely on roughening as a sole means of erosion control.
- Immediately seed and mulch roughened areas.
- Tracking by driving equipment up and down slope to create horizontal depressions and grooves.

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Maintenance:

Check slopes for erosion rills and washes. Fill these areas slightly above the original grade, then re-seed, mulch, or mat as soon as possible.

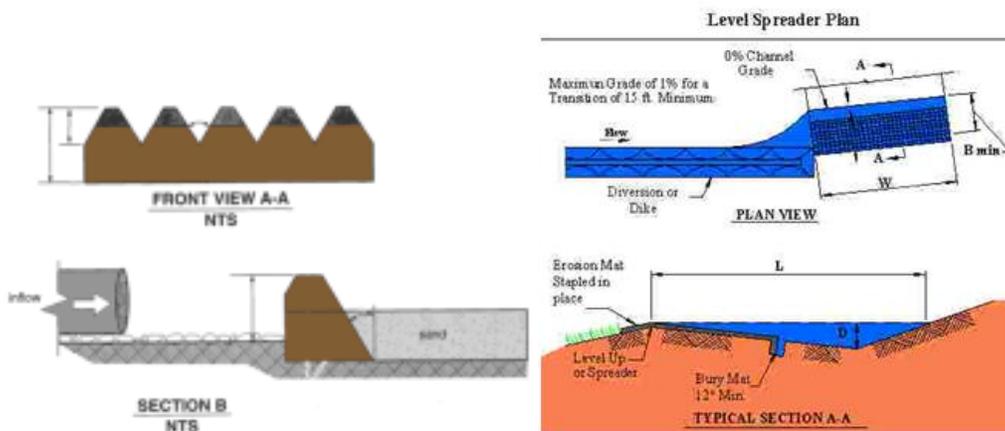
02.10 Level Spreaders

Description:

Level spreaders or velocity dissipaters are used at outfalls or discharge pipes or along swales to reduce erosion of channelized water. They reduce runoff velocity and convert channelized flow to sheet flow or spread the flow from concentrated to sheet flow at conveyance outlets. Level spreaders provide a moderate amount of infiltration by providing temporary storage of discharges and spreading runoff over a larger area for potential infiltration into the soil.

Design and Construction Specifications:

- The spreader should be level across the top to prevent channelized flow leaving the spreader.
- Create a slope leading into the spreader that is less than or equal to 1%. Leaving the spreader, create slopes less than 6%.
- Construct spreaders at least 6 feet wide and least 6 inches high.
- Material can be washed rock, concrete curb, stabilized level earthen bank, or wooden boards.



Maintenance:

- Check spreaders after every rainfall event to make sure they are level and functioning as intended (See 1200-C permit for detailed inspection requirements).

2.11 Check Dams

Description:

A check dam is a small dam constructed in a drainage way to reduce channel erosion by restricting the flow velocity. Check dams are appropriate for use in small drainage areas. Dams can be built from rock, logs, gravel filled bags, or staked bio bags; and can be temporary measures or permanent installations. They not dams in the traditional sense, and should not function like dams – they are velocity dissipaters only. They should leak a lot; that is, flow should pass through as well as over them. These structures also tend to act as sediment control structures, so it is important that they be inspected and maintained

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regularly to ensure adequate performance. Never use check dams in natural streams unless appropriate state and federal permits are first obtained.



Check dams are useful:

- In temporary swales and ditches where lining with non-erodible materials is not practical, but erosion protection is necessary.
- When construction delays or weather conditions prevent timely installation of non-erodible lining.
- In either temporary or permanent ditches or swales which need protection during the establishment of grass linings.
- In permanent swales and ditches that have a slope of 5 % or more where permanent energy reduction (velocity) is needed.

Design Considerations:

- Check dams are designed for velocity reduction and erosion control and are not intended to trap sediment, although sediment buildup will often occur. Sedimentation can clog the dam causing ponding. Lengthy submergence or excessive sedimentation can kill the vegetative lining of the ditch or swale. This is especially likely to occur if the rock is minus 2 inches due to smaller void spaces.
- If the overflow area immediately downstream of the check dam is not stabilized, downstream erosion may result. Stabilize the streambed and bank with riprap or equivalent. Extension of downstream embankments to stable grades is also effective.
- When overflow occurs at the abutments, the spillway will need to be lowered or enlarged in order to ensure that the banks do not erode. Inspect the check dam for plugging of the spaces between the rock before modifying the check dam.
- Check dams may be removed when their useful life has been completed. Remove all stones from grass channels that require mowing. When removing check dams, use caution so as not to damage channels that are permanent.

Design and Construction Specifications:

- Check dams are usually constructed of 3"-6" riprap, logs, or sandbags.
- For a check dam that is 6 feet or less in width, construct the center of the check dam at least 6 inches lower than the ends to act as a spillway for runoff and prevent water from flowing around the check dam or eroding the bank.
- For check dams wider than 6 feet, construct the center of the check dam more than 6 inches lower than the edges, up to a maximum of 2 feet lower than the edge of the check dam.
- Maximum check dam height is 2 feet, unless it is an engineered structure, due to the

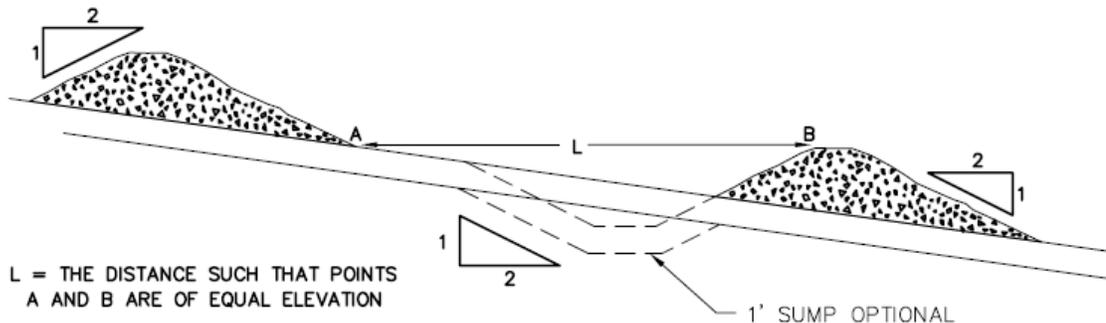
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possible water pressure behind the dam.

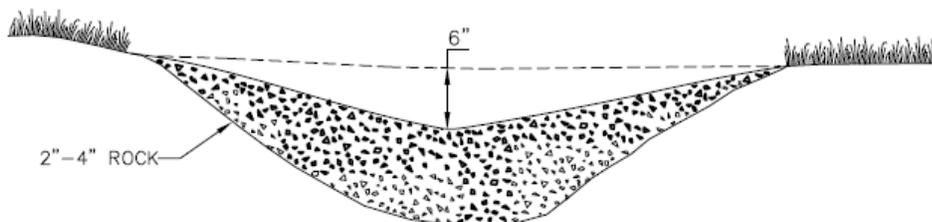
- Space multiple check dams so that the bottom elevation of the upper dam is the same as the top center elevation of the next dam downstream. That is, space dams so that the toe of the upstream dam is at the same elevation as the top of the center of the downstream dam.
- Stabilize overflow areas to resist erosion.
- Construct log check dams with 4 to 6 inch diameter logs. Embed logs a minimum of 2 feet. A spillway is needed in the log check dam. Do not exceed a drainage area of 5 acres for a log check dam. Note that removal of a log check dam can result in more soil disturbance than removal of other types of check dam.

Maintenance:

- Regularly inspect a check dam to ensure the dam has not been breached or otherwise damaged.
- Check the center elevation of the dam to ensure it is lower than the ends of the dam.
- Remove sediment accumulation behind the dam as needed to prevent damage to channel vegetation and to allow the channel to drain through the dam. Remove sediment when it reaches half the dam's height.
- Repair a damaged check dam promptly so the check dam will be fully functional for the next runoff event.
- If the spaces between the rock in a check dam become filled, removal and replacement of the check dam may be necessary.

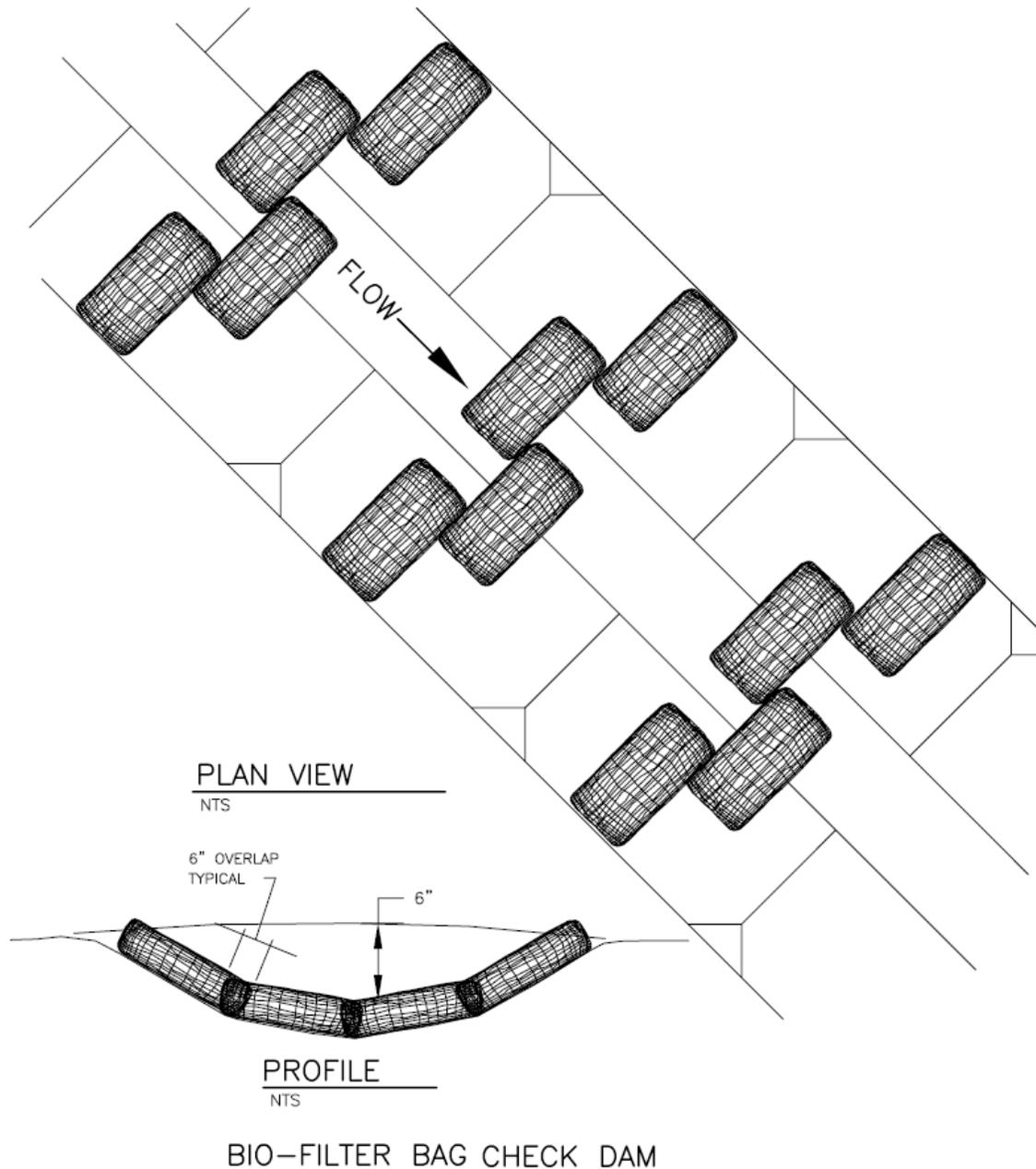


SPACING BETWEEN CHECK DAMS



ROCK CHECK DAM

(figure courtesy of Clean Water Services; adapted)



(figure courtesy of Clean Water Services; adapted)

2.12 Diversions

Description:

A diversion can be a berm (dike or ridge), a swale, an excavated channel, or a ditch used to prevent sediment-laden waters from leaving a site or to prevent off-site or upstream waters from entering a site. Diversion structures guide water around unstable areas to prevent both erosion and saturation with water. Typical diversions are combination berm/swale and may be temporary or permanent structures. Diversions are used:

- At the toe of cuts or fills to direct sediment-laden runoff to sediment traps.

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- At the top of cuts or around disturbed areas to divert clean runoff until the disturbed areas are permanently stabilized.
- At the top of steep slopes where excess runoff would cause erosion problems.
- At selected intervals on long, sloping routes to prevent erosion.
- Around a site to prevent entry of off-site runoff and to reduce flooding.
- If clean water flows from above or across the site and picks up sediment from the site, consider piping the water across the site or using diversion ditches lined with geotextile fabric. The ditch to the right is lined with geotextile fabric to prevent erosion and limit soil contact with stormwater.



Design Considerations:

- If the berm is not properly compacted and stabilized, it could fail in a heavy storm.
- A steep grade requires a protective liner or realignment to reduce grade.
- Sedimentation where channel grade decreases or changes course may cause overtopping. Realign or deepen channel to maintain grade.
- At a low point in berm where diversion crosses a natural depression, the berm will need to be built up.
- At vehicle crossing points, maintain berm height, flatten side slopes, and protect ridge with geotextile fabric and gravel at the crossing point.

Design and Construction Specifications:

- Do not use diversions on drainage areas exceeding 5 acres, though stream diversions may exceed this.
- Design diversions to handle the peak runoff from a 10-year storm or the runoff a typical local peak annual three or four hour storm event if the information is available.
- Construct berms from compacted soil, with a minimum top width of 2 feet, and a minimum height of 1 foot (with or without a swale). Allow for 10% settling. Berms may also be constructed from staked straw bales tightly packed end to end.
- When equipment crossing is necessary, diversions may be wider with flatter side slopes and lined with gravel to minimize erosion with a geotextile fabric under the gravel.
- When practical, minimize temporary diversions needed by constructing embankment ridges to slope to one side.
- Stabilize outlets to prevent erosion and convey runoff to a point where it will not cause damage.
- Vegetate diversion immediately after construction unless the diversion will be in place fewer than 30 working days and then provide a close knit jute, burlap, or similar liner in order to minimize erosion of the diversion structure.

Maintenance:

Permanent diversions should be checked following each rainfall until disturbed areas are stabilized. Inspect temporary diversions daily when runoff is occurring and at least once every two weeks (See 1200-C permit for detailed inspection requirements). Remove accumulated sediment from the channel. Check the dike, swale, and outlets and make

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necessary repairs immediately. Reseed areas that fail to establish a vegetative cover. Temporary diversions may be removed and blended with the natural topography when the area protected is permanently stabilized.

2.13 Bioswales

Description:

Bioswales are shallow, trapezoid-shaped ditches lined with grass or other vegetation that act as filters for runoff. Bioswales do well with first flush runoff, are economically feasible, improve aesthetics and have minimum environmental impacts. The organic topsoil layer is good for degrading petroleum solvents, heavy metals, nutrients and hydrocarbons. They can be placed anywhere with careful site design, but are best when located where water can pond and settle out sediments, such as at a stormwater outfall, commercial development or roadside.

Design Considerations:

- The bioswale needs to be of sufficient width that vegetation does not die off when submerged, and so that flow is slow enough to provide efficient treatment and to not cause erosion of the swale.
- Grade the bioswale to create sheet flow rather than a concentrated stream in the bottom of the swale. Sheet flow decreases the chance of producing gully erosion and distributes contaminants over a wider area. Level spreaders (such as slotted curbs) can be used to facilitate sheet flow.
- Bioswales work best when used for treatment and conveyance of stormwater after rather than before a settling pond.
- Do not use bioswales on steep, unstable slopes or landslides.

Design and Construction Specifications:

- Design swales to deal with the peak runoff for a 2-year, 24-hour storm event.
- Critical design elements include: size of drainage area to be treated, location of bioretention areas, sizing guidelines, and water budget.
- Biofiltration is suitable for smaller sites 10 or less acres per biofilter.
- Bioswales work best when they are at 200 feet in length. In tight spaces obtain more length by using a curved path.
- Construct bioswales with a maximum bottom width of 8 feet. A low height divider can be used in wider swales to split the low flows to one side of the swale.
- Install level spreaders periodically starting no more than 10 feet downstream from the inflow point, at the inflow to any curves, in the curve, and at the outfall of a curve, in order to maintain sheet flow at low intensity rain events. For sharp curves it may be necessary to armor the outside bank to prevent erosion.

Maintenance:

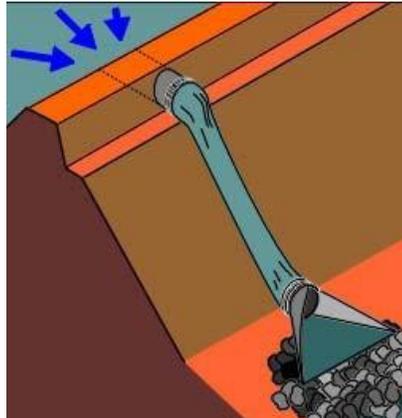
- Trim vegetation in the bioswale every year if the vegetation can grow to heights over 12 inches. Remove woody species periodically. Dispose of plant clippings properly as they may have absorbed hazardous materials which may be released upon decomposition.
- Regrading may be necessary to reshape the shallow-broad shape as sediments collect and form pools. As with plant waste, remove sediments dispose of properly.

For additional information on Bioswales see the Biofilters document at:
<http://www.deq.state.or.us/wq/stormwater/nwrinfo.htm>

2.14 Pipe Slope Drains

Description:

A temporary pipe slope drain is a structure used to convey clean water down the face of a cut or fill without causing erosion. Temporary slope drains are used in conjunction with berms along the edges of newly constructed slopes to prevent erosion. They are used along cut and fill slopes until permanent stormwater drainage structures are installed. They can also be used to conduct water across a site without contamination. Design the inlets and outlets for adequate stabilization. The outlet area is particularly important, as the higher velocity water at the end of pipe can be extremely erosive. Outlet design and correct installation are the keys to the success of this type of control.



(figure courtesy of Clean Water Services)

Design and Construction Specifications:

- Do not exceed 5 acres of drainage area for each slope drain.
- Install pipe slope drains at frequent intervals along continuous unprotected slopes and at low points in the roadway profile grade.
- Plastic lining; fiber matting; wooden flumes; metal, rigid, or flexible plastic pipe; and half round pipe are commonly used. When plastic lining is used, provide a smooth, uniform ditch to prevent water from overflowing the sides. Do not use fiber matting and plastic sheeting on slopes steeper than 4:1 except for short distances of 20 feet or less.
- Ensure that pipe connections are watertight and secure so joints will not separate.
- Pipe diameters should be calculated by a qualified engineer.
- Construct inlets to channel water into the drain.
- If the water entering the pipe slope drain contains sediment, then staked bio bags, rice straw wattles, or some other inlet protection should be used.
- Anchor drains to withstand the force of the water. Anchoring can be accomplished by staking at approximately 10 foot intervals or by weighing down the drains with items such as riprap, sandbags, or compacted soil.
- Compact the base for temporary slope in a concave form to channel the water or to hold the slope drain in place.



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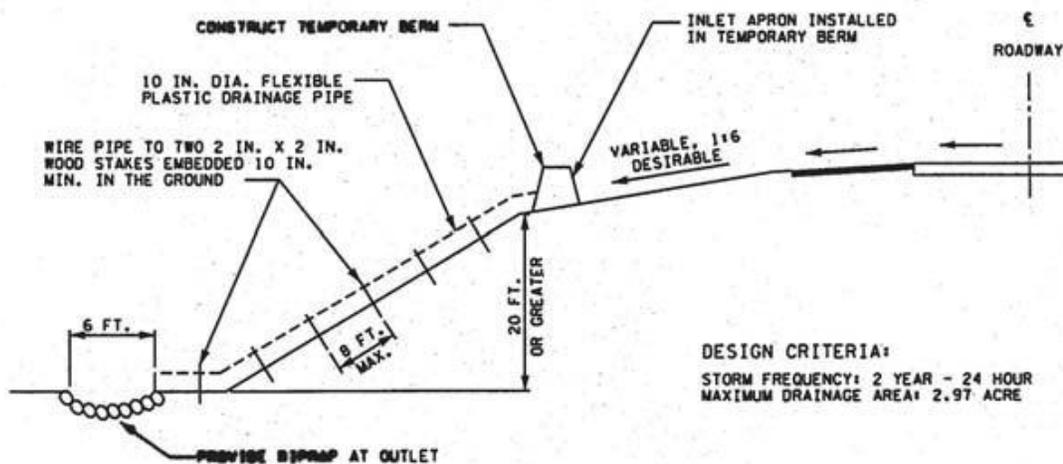
- Construct outlets to reduce erosion downstream with items such as dumped rock, small sediment basins, or other approved devices.
- Remove all temporary slope drains when no longer necessary and restore the site to match the surroundings.

Common Problems:

- Washout along the pipe/matting/flume due to seepage, piping, and/or overflow. A washout may occur because of inadequate compaction, insufficient fill, installation of drain too close to edge of slope, too steep a slope (open drains), too large a drainage area, or undersized conveyance channel.
- Overtopping of diversion. This can be caused by undersized pipe (drainage area too large) or a blocked pipe, or by improper grade of channel and ridge.
- Erosion at outlet. This can occur when the pipe does not extend to stable grade or outlet. A stabilization structure may be needed.
- Displacement or separation of slope drain. The drain has inaccurate or insufficient anchorage.

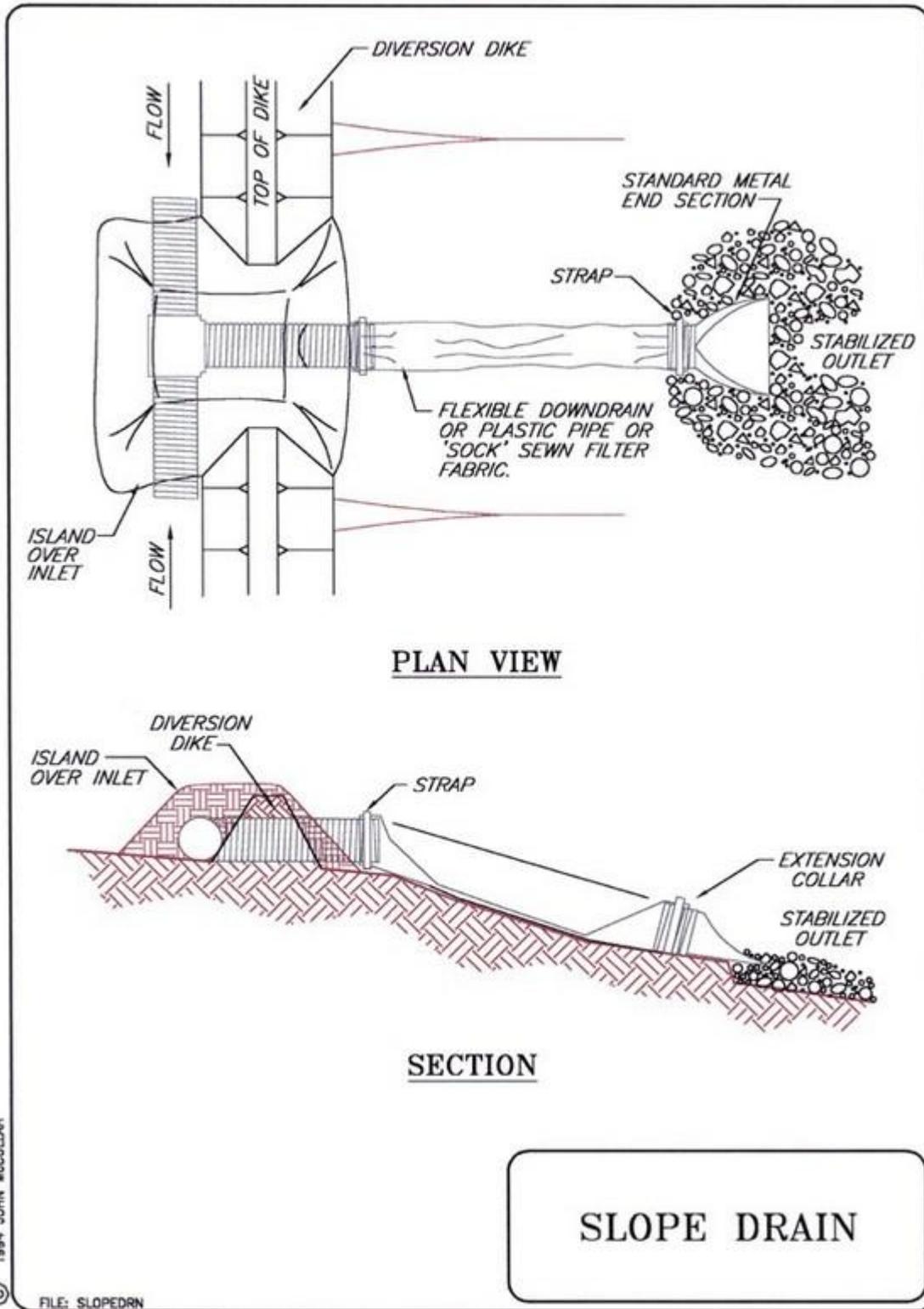
Maintenance:

- Inspect temporary slope drains daily when runoff is occurring and at least once every two weeks (See 1200-C permit for detailed inspection requirements). Some critical points that should be checked at each inspection are as follows.
 - Check inlet and outlet for sediment or trash accumulation; clear and restore to proper condition.
 - Check the fill over the pipe for settlement, cracking, or piping holes (seepage holes where pipe emerges from dike); repair problems promptly.
 - Check conduits for leaks or inadequate lateral support; repair problems promptly.



Pipe Slope Drain Example

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(Figure courtesy of Clean Water Services)

2.15 Outlet Protection

Description:

Outlet protection involves the use of an energy-dissipating device at the outlet of a pipe or conduit to prevent excessive erosion (scour) from the discharge of runoff. Outlet protection structures can be manufactured from a number of different materials.

Design and Construction Specifications:

Concrete/Paved Outlet Protection:

Concrete or paved outlet protection is a permanent structure and therefore should be designed by a qualified engineer. The design and installation of such a structure should follow plan specifications.

Riprap Outlet Protection:

Excavate subgrade below design elevation to allow for thickness of filter and riprap. Compact any fill used in the subgrade to the density of the surrounding undisturbed material. When applicable, smooth the subgrade to prevent tears of the filter fabric. Even if not shown on plans, place filter stone, fabric, or a blanket prior to placing the riprap to help prevent subgrade erosion. Use extra-strength quality filter fabrics, installed in continuous sections, placing the upstream section of fabric a minimum of 1 foot over the downstream section of fabric. Completely replace any fabric that is torn during riprap installation.

Install riprap of the size and thickness as shown on plans to ensure a minimum thickness of 1.5 times the maximum stone diameter. Maintain final structure to the lines and elevations as shown in plans, taking care not to place stones above the finished grade.



(Photo courtesy of Clean Water Services)

Apron Installation:

Nondefined Channel: Construct apron on a zero grade, aligned straight, and long enough to adequately dissipate energy. Construct so that there are no restrictions or overfall from the apron end to the receiving grade.

Well-Defined Channel: Construct apron straight and properly aligned with the receiving stream. Extend the apron to the top of the bank and long enough to adequately dissipate energy. Construct so that there are no restrictions or overfall from the apron end to the receiving channel.

For outlet piping of relative small diameter (generally 18 inches or less), completely burying the outfall side of the pipe in rip rap generally provides the velocity diffusing feature without concern for the length of protection needed.

Design Considerations:

- If the foundation is not excavated deep enough or wide enough, riprap will restrict flow across sections, resulting in erosion around apron and scour holes at outlet.
- If the riprap apron is not on a zero grade, erosion will result downstream.
- If the stones are too small or not properly graded, stones will move, resulting in downstream erosion.
- If riprap not extended far enough to reach a stable section of channel or adequately dissipate energy, there will be downstream erosion.
- If an appropriate geotextile fabric is not installed under riprap, this may result in stone displacement and erosion of the foundation.

Maintenance:

- Riprap outlet structures do not require much maintenance when properly installed. Check periodically (particularly after heavy rains) for erosion at sides and ends of the apron and for stone displacement. Repair damage immediately using appropriate stone sizes.
- Modify size and depth as needed to prevent erosion and scouring.
- Check outsides of pad to verify that pad is wide and long enough to prevent erosion along the edges.

2.15 Terracing

Description:

Terraces are constructed across slopes and form a series of channels and earthen embankments that reduce erosion by breaking the long slope into several shorter sections. The speed of the runoff is thereby reduced as is the amount of sediment loss. Runoff is collected in the terrace channel and can be stored for infiltration into the soil or diverted through some kind of erosion resistant outlet.



2.16 Straw Wattles

Description:

Straw wattles are manufactured tubular plastic netting filled with rice straw. They are approximately 9 inches in diameter, 7 to 25 feet long, weigh about 35 pounds, and are easy to install. They can be installed on steep slopes and must be staked in position. Straw wattles act to disperse runoff laterally and trap sediments on the upslope side. If the soils are poor with respect to nutrients and need to be fertilized, the mini-terraces formed by the wattles encourage the nutrients to stay on the slope.

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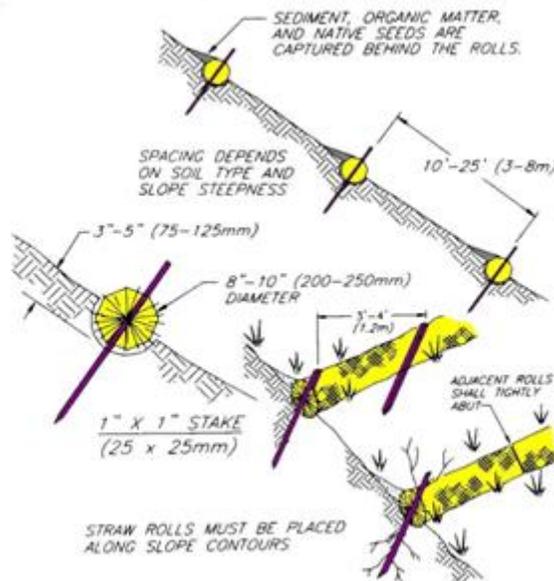
(Image courtesy of Clean Water Services)

Basic Design and Construction:

- Excavate a trench in which to lay the wattles, ensuring that water does not seep underneath the wattles. If the soil is loose enough, you can walk the straw wattle enough to create the required depression.
- Wattles are placed along the contour of the slope to reduce water flow velocities and trap sediments mainly through settling.
- Make sure the wattle fits snugly against the adjoining wattle, without gaps or cracks.

Maintenance:

Regularly remove sediment behind the wattles. Replace the wattles every three years or when they appear to become plugged (that is, water will not pass through).



2.17 Compost Berm

Description

A compost berm is an efficient way of preventing sediment and turbidity discharges from a construction site. Yard debris compost is used to build a dike which filters the stormwater runoff. Most sediment and colloidal soil particles are negatively charged. Compost is positively charged which tends to attract and hold the soil particles. In addition, the biota in the compost consume oil and grease and can convert some soluble

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pollutants into insoluble forms. Compost berms can benefit vegetation when the compost is spread out or if the berm is seeded for the vegetation growth on the berm itself.

For further information on Compost for Erosion Control see the Biofilters document at:

<http://www.deq.state.or.us/wq/stormwater/nwrinfo.htm>.

Design and Construction Specifications:

The basic compost berm consists of at least a 2 feet wide by 1 foot high continuous pile of compost. Use compost made up of yard debris, leaf, or composted biosolids from a sewage treatment plant. The compost grade can be either two-inch minus, one inch minus, or half-inch minus, depending on the slope of the area behind the berm. Steeper slopes generally require larger-sized compost. Sheet flow of runoff is a must upgradient of the berm. This may be established by the application of a 2 inch thick compost layer on the slope, a silt fence installation, or some other method for dispersing or preventing concentrated flows from occurring. The downstream side of the berm should not be bare soil or the runoff will pick up sediment and turbidity after the berm.

Maintenance:

Regularly inspect the berm to ensure that it does not blow out from concentrated flows and to ensure that the compost does not become saturated, plugged, or rendered ineffective for some other reason. Inspect during stormwater runoff, so that turbidity breakthrough will be evident by muddy water flowing through the berm.

2.18 Compost Sock

Description:

Compost Socks are close weave sock either of synthetic or cotton fiber filled with mixed yard debris compost, available in sizes that generally range from 8 to 24 inches in diameter. They tend to be heavy, but can be moved. Because socks deform (flatten), they make a good seal between the sock and concrete or asphalt surfaces. Socks are available in preset lengths or can be blown on site to the desired length. Synthetic socks deteriorate in a couple of years and cotton socks deteriorate in about a year. Seed can be incorporated with the compost fill. Socks are very ineffective in removing turbidity and suspended solids. For this purpose, it may be necessary to use more than one sock, side-



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by-side.

Compost socks can be staked and used as check dams, but exercise caution when using in this way, because very little flow can go through socks, and thus will usually overflow when used as check dams. For this reason, special sock tubes that have a downstream skirt to protect the stream bed from any damage that may be caused from water overflowing the sock and undercutting the stream bed. When used as a check dam stake the sock to prevent the water pressure from moving it.



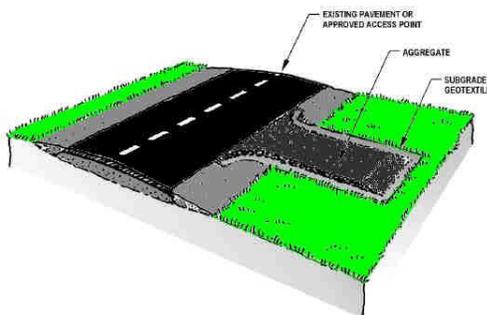
2.19 Gravel Construction Entrance and Wheel Wash

Description:

A gravel construction entrance is a stabilized rock pad, placed at construction site ingress/egress locations. Constructing paved or rockered roads or entrances can reduce the amount of mud and sediment that is tracked onto areas where the material could be washed into the storm drainage system. Construction entrances also typically include a curb ramp.

Design Considerations:

- Vehicle traffic leaving the site should be restricted to only those locations fitted with a gravel exit or wheel wash.



- Locate the entrance to provide for maximum utility by all construction vehicles.

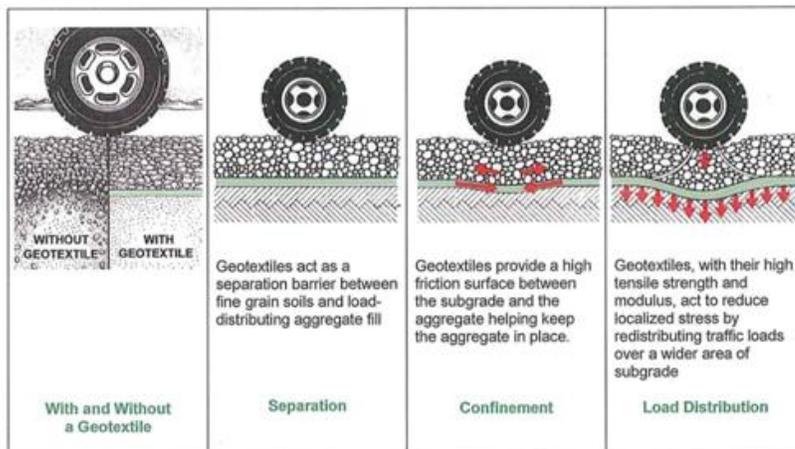


(graphic courtesy of Clean Water Services)

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Design and Construction Specifications:

Construct the gravel pad to extend to the structure (minimum of 50 feet), at least 10 inches deep and 20 feet wide. Use geotextile fabric as a barrier between the rock and the native soil to prevent migration of the soil fines through the rock to the surface and thus back to being tracked offsite. Use a large size rock aggregate; 6 – 4 inch quarry spalls are best with little or no fines. Aggregate of this size will deform tires of vehicles thus reducing or eliminating the need for a wheel wash. If the pad is to be located in a future driveway, the existing ground can be excavated deep enough before installation so that the final rock and pavement can be applied over the top. Ensure that the turning radius of the entrance is sufficient to accommodate larger trucks.



A product which shows some promise on paved areas is the Rumble Track. The Rumble Track is a reusable matting for paved entrances that will deform the tires thus knocking off a large amount of any clinging sediment. If there is a lot of sediment being tracked, frequent cleaning of the mat will be needed.



A reusable grate could also be used for some entrances as shown below.

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Shaker Rack

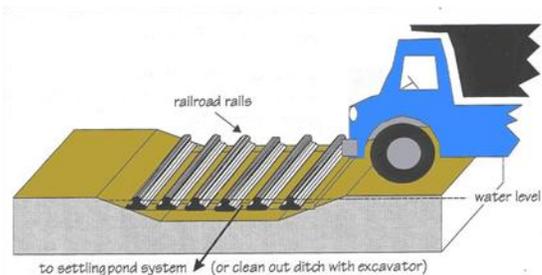
Wheel washes can also be installed at site exits to remove dirt and rocks from truck tires. A series of railroad rails spaced 2 to 8 inches apart can be used to shake dirt and rocks loose while the vehicle is driving through the wheel wash. Large rock (6 – 4 inches) can also serve this purpose. Water used to wash trucks must be treated to remove solids and turbidity before being discharged from the site.

The installation of a pressure washer is a relatively quick and low cost method of washing wheels and can be used on a construction entrance that uses the large aggregate. It can be added if the large aggregate in itself was insufficient to prevent tracking of sediments off site. It just takes a couple of minutes to clean the wheels.

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If water is not yet available on the site, a water truck can be used on the construction entrance (However, this should not be done on a paved street, as shown below). This will typically release larger amounts of water for short time intervals and some method for capturing this excess water and ensuring that it does not cause erosion and sediment control problems will have to be provided. Some portable wheel washers also use water from trucks (shown above).



Maintenance:

- Any material that reaches the road must be cleaned up immediately by vacuum sweeping and not washed off with water.
- Additional rock may be needed periodically to maintain a clean surface.

2.20 Road Sweeping

Description:

When roads through a construction site are paved, they can quickly become coated with sediments. A common, but harmful, practice is to wash down the surface with water. The sediment laden runoff then drains to the stormwater system, polluting the receiving water. Operations involving heavy vehicle traffic also produce elevated metal levels in stormwater from vehicle brake shoes or clutches (copper) and tire particles (zinc).

Basic Design and Construction:

Sweeping of paved roads, parking lots, and storage areas with a vacuum sweeper that incorporates HEPA filtration or other high efficiency method of filtration of the exhaust air from the sweeper to trap the very fine metallic particles found in road or parking lot dust can reduce these discharges to stormwater. If the filter is not fine enough and well contained, materials that the vacuum picks up will be dispersed into the air.

Information from some manufacturer's reports indicate that some sweepers will retain particles 10 microns (0.01 mm) or larger. The smaller size of the model and four-wheel steering makes it easy to maneuver in small spaces that traditional sweepers would not fit.

Ensure that good control measures are implemented when dumping the contents of the sweeper and practice proper disposal methods for the emptied contents to ensure that there is no adverse environmental impact

2.21 Catch Basin Inlet Protection

Description:

Inlet protection involves using a temporary barrier to prevent the flow of sediment and debris into a storm drain or other form of conduit. Inlet protection is used to prevent sediment from entering and clogging the storm drainage system prior to permanent stabilization of a construction area. This practice helps to keep the conveyance channel free from debris or sedimentation that could reduce the capacity of the channel.

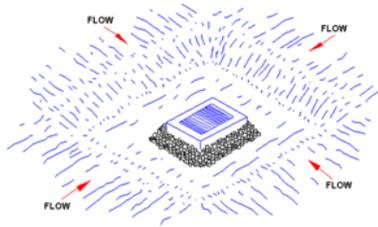
Basic Design and Construction:

There are several techniques for inlet protection. Some of the methods actually filter out larger particulates, while others may require excavation and/or the use of a dike or berm to establish a drop area. Drop areas are used to promote ponding or slowing of the runoff flow that allows sediment to settle. Some inlet protection devices are designed for use on sites that have not been paved, while others are effective when used on paved surfaces or bare soil areas. Basic design and installation procedures for some of the most commonly applied processes are described below, although other innovative techniques exist for accomplishing the same purpose.

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Excavated Drop Inlet Protection

This process is limited to maximum drainage areas of 1 acre. The area is excavated 1 to 2 feet deep, as shown in the diagram on the right, and wide enough to create a total storage volume of at least 35 cubic yards per acre. Construct slopes to be 2:1 or flatter. When possible, shape the basin to orient the longest dimension toward the largest inflow.



Catch Basin Insert Bag Inlet Protection

An insert bag is a woven fabric bag that has a fairly large filtering area so that it reduces, under normal circumstances, water back up and has relatively little to no maintenance depending on loading. Some manufactures use a non-woven material that has been punched with micro holes. Select bags based on filter surface area and normal rather than high flow characteristics. Initial water flow rate is generally around 40 gallons per minute. Bags are installed below the grate to minimize damage that can occur due to vehicles and machinery. Experience has shown that the material will last from between three months and one year without replacement, depending on traffic. Cleaning may be required (depending on loading), and the bag can be reused after cleaning as long as it has not deteriorated. A bag will generally capture 0.0117 inch (297 micron) particle size and above, but as it traps sediment it will become more efficient and capture finer particles. Along with the finer particle capture will be a reduction in the flow capacity, and this may eventually result in localized standing water or flooding. This type of inlet protection is highly recommended for areas where vehicle traffic occurs as it will result in significantly less maintenance compared to most other inlet protection methods



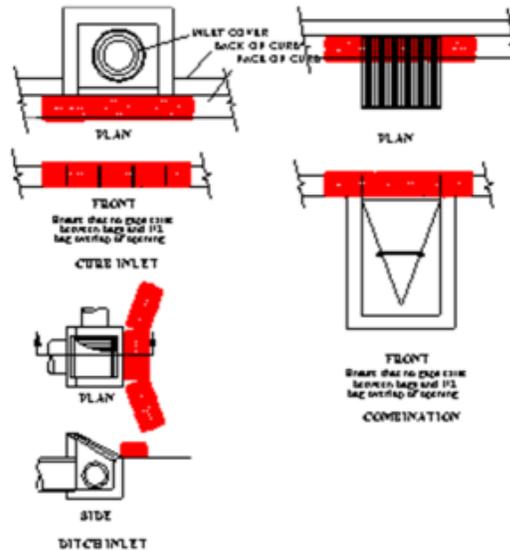
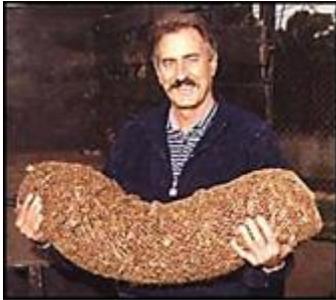
Catch Basin Insert Bag
No overflow and normal flow only

Bio-Filter Bags

Bio-filter bags (Biobags) are woven 12" by 9" by 40" nylon mesh bags containing bark and/or wood chips. There are at least two sizes of biobags. The most common size of biobag is approximately eighteen inches long. They are commonly used to remove energy from concentrated flows or for protection around some types of catch basins. Stake biobags to keep them in place in concentrated flow areas.

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Biobags can be used in a number of locations and in a variety of arrangements around the storm-drains. Position biobags so that there are no gaps between the bags that could allow runoff to reach the storm drains unfiltered. Due to their high maintenance and potential for damage or displacement on paved areas, biobags are not recommended for paved areas. . If biobags are used in high-traffic areas, use additional measures to help prevent them from being run over (for example, flagging several feet high).



Biobags slow water sufficiently to trap sand, silt and clay in and upstream of the bag. They fit the contours of the land. They hold together well unless damaged by traffic, and can therefore be removed easily when saturated. Wildlife won't tear them apart to eat them and they will not introduce grass and weed seeds to the site.

Biobags have the least retention of any of the erosion controls but can serve a valuable purpose in retaining larger particulate sizes when properly maintained. Unfortunately, they are seldom maintained and are quite frequently damaged by traffic shortly after installation. Also, at the time of removal, very few are removed properly. If the sediment that has dropped out behind the bags is not cleaned up, then the purpose of the inlet protection is lost as the next rain event will wash this sediment into the storm drain age system.

Maintenance:

- Remove accumulated sediment from behind biobags to ensure efficient sediment removal.
- Replace biobags whenever they become plugged with sediments or damaged, such as when vehicles run over or dislodge them. With their much more open voids and their ability to retain larger particle sizes of sediment, it is very important to replace the biobag when water can no longer pass through them.

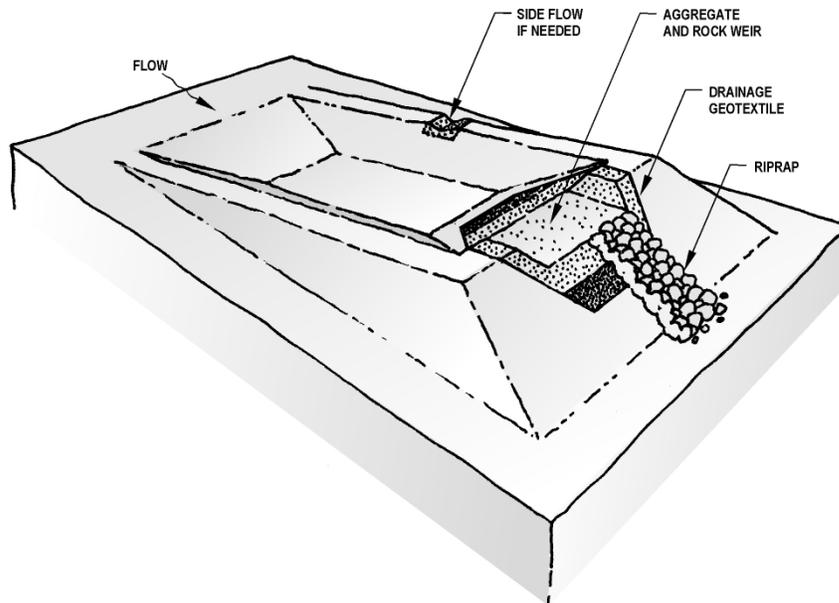
Maintenance - Essential to all Inlet Protection:

The effectiveness of the inlet protection is dependent on follow-up maintenance. Inspect inlets following each storm event and daily when runoff is occurring (See 1200-C permit for detailed inspection requirements). Remove accumulated sediment and debris. Make any needed repairs immediately.

2.22 Excavated Sediment Trap

Description:

A sediment trap is a small, temporary ponding area, designed to remove sediment from runoff by holding a volume of water for a length of time, allowing larger (sand-sized) particles to settle out. They are placed on the downslope side of the exposed areas in the temporary drainage channel on the site and not in the receiving stream. Periodic sediment removal is necessary to maintain the effectiveness of the trap in capturing sediment from upland sources. Sediment traps are very small pits designed to only remove the heaviest of the sediment, because the retention times are extremely short.



(Image courtesy of Clean Water Services)

Design Considerations:

- Sediment trap design is based on the amount of unstabilized area, anticipated runoff rate, the amount of heavy sediment to be removed from the runoff, and particle size (See “Settling Velocities of Sediment Particles in Water” table).
- When choosing a location for a trap, make sure that the site will be low enough to accommodate any diversion berms, dikes or pipes.
- Design the storage capacity of the basin based on the anticipated rate of sediment accumulation and frequency of maintenance. Balance the capacity of the sediment trap should with the need to conform the sediment trap to the surrounding topography.
- Ensure that excavated side slopes are stable from erosion under ponded conditions.
- Ensure that the drainage channel above and below the proposed excavation is generally stable and vegetated or lined so that additional erosion of the channel does not occur.
- Discharge runoff from the trap onto a stabilized area or to the outfall from the site.
- Ensure that the sediment trap inlet and outlet are stable. The necessary stability can be achieved with the aid of channel stabilization measures including grade control structures and channel lining.

Maintenance:

- Repair grade structures or channel lining as needed.
- Remove obstructions which may divert stream flow.
- Remove sediment when it reaches half the depth of the sediment storage area.

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- Check after all significant rainfall, and daily when runoff is occurring, for effectiveness in trapping sediments and to determine if repairs are needed (See 1200-C permit for detailed inspection requirements).

2.23 Sediment Basin

Description:

A sediment basin is a temporary pond built to capture eroded or disturbed soil that is washed off during rain storms. Sediment basins are usually earthen embankments, but may be constructed aboveground with straw bales, and may also be constructed of concrete movable barriers with a plastic liner to enable water retention. The outfall from a sediment basin may be a stand pipe (perforated or not) or some other floating or elevated discharge such that a wet settling area is created upstream of the outfall. Sometimes a wet or dry water quality detention pond is temporarily modified to create a sediment basin during the construction activities of the site.

Design Considerations:

- The potential impacts of dam failure need to be considered, if this is a bermed ravine or depression.
- Once the sediment basin is constructed, ensure that equipment and vehicles can access the pond to remove accumulated sediment.
- Consider availability of suitable spoil (dredged sediment from the basin) locations on-site and feasibility of off-site spoil locations.
- Do not construct sediment basins in natural streams or waterways.

Design and Construction Specifications:

- Locate basins in low gradient reaches of the site. Elevated portions of the site can be used if the runoff is pumped into it.
- Build the basin large enough to control the expected volume of water runoff and with enough retention time to settle out the expected particulate size in the runoff.
- Keep inlet and outlets a maximum distance apart in order to obtain the maximum settling volume and retention time.
- Avoid channelizing the water flow in the basin as the resulting velocity may resuspend the soil particles.

Maintenance:

- Excavate accumulated sediment regularly based upon observed loading rate and periodic depth measurements.
- Remove obstructions which may plug outlet.

2.24 Sediment Fence

Description:

Sediment fencing consists of a geotextile fabric, usually 36 inches wide, with regular spaced pockets for supporting posts. Sediment fencing causes heavy soil particles to be retained both through a filtering operation and through the creation of a small settling basin upslope of the fence through restriction and retardation of the runoff flow velocity. The main benefit of sediment fencing is slowing the runoff, which causes the heavier particles in the runoff to settle out. The weave of the fabric determines the size of the soil particle retained by the sediment fence to a great extent. Filtering is generally in the 297 micron (0.0117 inch) and above particle size. As heavy, large-sized particles are retained,

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they create a build up effect, which will retain smaller-sized particulate similar to the way an air filter becomes more effective as it retains dust. At some point the material behind a sediment fence becomes too efficient, causing the material to rise higher behind the fence and start the retention cycle all over again.



(Photo courtesy of Clean Water Services)

Design Considerations:

Sediment fences are effective only in sheet flow conditions; do not install sediment fences across streams or other concentrated flows. Do not use sediment fences in gravel, as the sediment-laden runoff will likely flow under the sediment fence. Turbidity reduction generally does not occur, and data indicate that a sediment fence may in fact be detrimental in controlling turbidity. At best, a sediment fence can be used to retain the heavy, settleable solids, while other erosion controls are necessary to reduce turbidity.

Design and Construction Specifications:

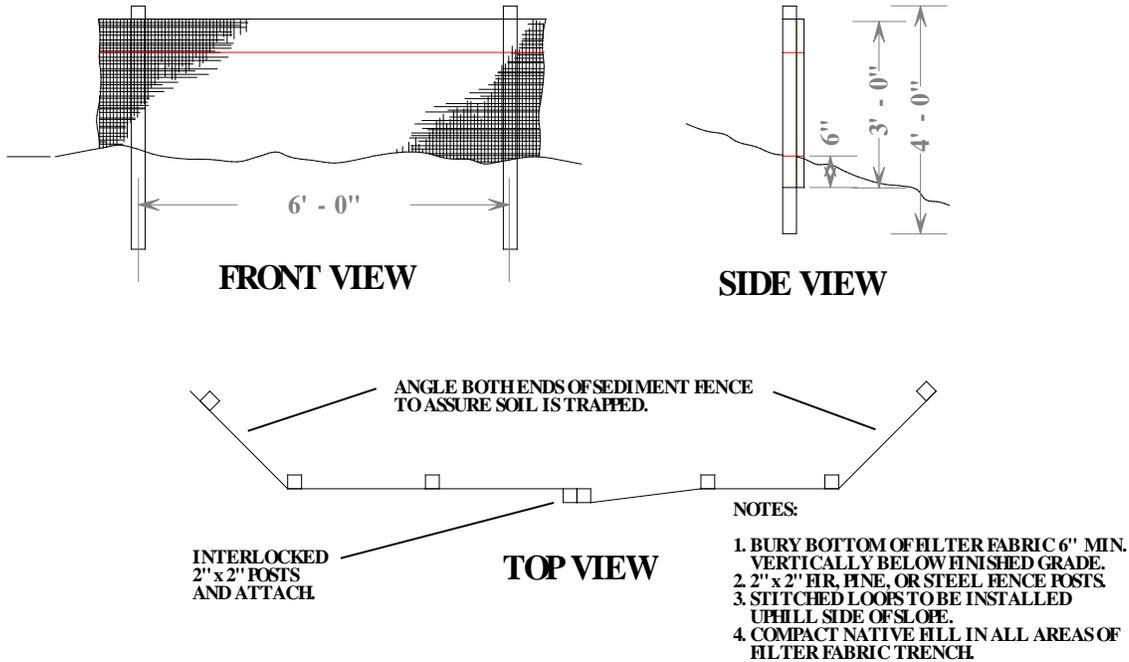
- Trench the sediment fence at least 6” into the ground. The use of a “ditch witch” or other mechanical means is helpful.
- Stretch the sediment fence stretched tightly between the posts. Do not allow the fence to sag or break away from the fence posts. Caution: Do not over stretch or the fence will be damaged.
- More than one row of sediment fences may be required.
- Sediment fence spacing on slopes should be at no greater distance than:

	Slope	Spacing
	<10%	300 ft.
	<15%	150 ft.
	<20%	100 ft.
	<30%	50 ft.
	<50%	25 ft.
Stock Pile Slope	>50%	25 ft.

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Maintenance:

Remove accumulated sediment frequently, and replace fabric at least every six months when exposed to fine clay sediment runoff. A more proactive approach would be to replace the sediment fence every 30 days when exposed to clay-silt-loam runoff. Do not allow sediment to accumulate behind the sediment fence any higher than 1/3 the above-ground height.

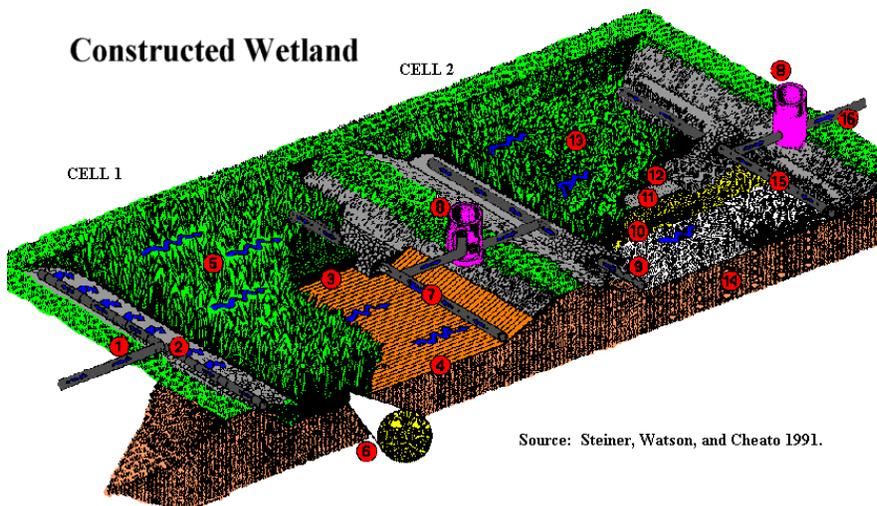


Sediment Fence

NTS

2.25 Constructed Wetlands

For further information on Wetlands see the Biofilters document at: <http://www.deq.state.or.us/wq/stormwater/nwrinfo.htm>.



Source: Steiner, Watson, and Cheato 1991.

Description:

Oregon Department of Environmental Quality

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Constructed wetlands are man-made, engineered wetland areas created through a combination of excavation and/or berming. The basic types of constructed wetlands are shallow marsh, 2- or 3-celled pond/marsh, extended-detention wetland, and pocket wetland. Extended-detention and pocket wetlands are less effective in removal of some types of pollution than other types of wetlands. Wetlands are particularly effective for the removal of nutrients and conventional pollutants such as oil and grease and some heavy metals.

Design Considerations:

- Constructed wetlands are suitable for larger sites, up to 100 acres where there is insufficient length to construct a settling pond with bioswale.
- Constructed wetlands cannot be used in areas with shallow depth to bedrock or unstable slopes.
- Constructed wetlands have larger land requirements for equivalent service compared to wet ponds.
- Hydrologic factors (flow) are very important in siting and designing wetlands, because constructed wetlands are complex, have a substantial amount of vegetation, and are relatively shallow with a large surface area. There must be enough flow to provide an adequate, ongoing water supply for wetland plants. However, flows must not be so high that they overwhelm wetland processes.
- Constructed wetlands need to have a shallow marsh system to deal with nutrients.
- Utilize a wetland specialist for selection of vegetation.
- There is a delayed efficiency until plants are well established (1 to 2 seasons).
- Water level fluctuations can kill plants.
- Constructed wetlands have relatively high construction costs.
- Constructed wetlands have relatively low maintenance costs.

Design and Construction Specifications:

- Design wetlands as a flow through facility, with a flat bottom to facilitate sedimentation.
- Include a method of quickly getting the concentrated inflow to full wetland width and to then collect the flow back to the concentrated outflow. This ensures that short circuiting does not occur and maximizes the retention time - qualities needed for the wetland to be effective.
- Construct the permanent pool depth between 3 to 6 feet, plus one foot of dead storage for sediment. Six feet is the maximum depth or the pond will stratify in summer and create low oxygen conditions which result in the re-release of phosphorus and other pollutants. In addition, if the pond is deeper than 6 feet wetland plant selection is more difficult.
- The best wetlands design is multi-celled, preferably three cells of equal sizes. Make the first cell 3 feet deep to trap coarse sediments and slow turbulence.
- Include an overflow system/emergency spillway to deal with a 100 year 24 hour flood, and a gravity drain.
- Pond embankments over 6 feet high should be designed by a registered engineer.
- Construct berm tops be 15 feet wide for maintenance access.
- Constructed wetlands need a buffer width of 25 to 50 feet.

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- Test soils to determine suitability, particularly when located in clay loams, silty clay loams, sandy clays, silty clays and clays. This is to ensure that enough water retention occurs to maintain wetland plants.
- For mosquito control, either stock the pond with fish or allow it to be drained for short periods of time (do not kill the marsh vegetation).
- Fence off for safety and to protect plants and wildlife.

Maintenance:

Maintenance is of primary importance. The person responsible for site operations must be the responsible party for maintaining the wetland. Develop a maintenance plan that addresses removal of dead vegetation (that release nutrients) prior to the winter wet season, debris removal from trash racks, and sediment monitoring in forebays and in the basin. Because sediments are likely to contain significant amounts of heavy metals and organics, regular testing is advised.

2.26 Flocculants and Coagulants

Description:

Turbidity may be caused by particulates which require an extended period of time to settle out due to their very small size, often much less than 0.001 mm in diameter. Removal of these small particles by settling alone is not practical. Polymers and inorganic chemicals speed the process of clarification.

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Cationic polymers can be used as primary coagulants to reduce turbidity in stormwater. Inorganic chemicals such as aluminum or ferric sulfate and aluminum or ferric chloride can also be used. The added chemical destabilizes the suspension and causes the smaller particles to agglomerate into larger particles referred to as “floc” which settle more rapidly. The process consists of three steps: coagulation, flocculation, and settling or clarification.



Treatment systems typically require constant adjustment in order to not under or over flocculate the runoff. Under-flocculation can result in carryover of the particulate through the discharge of the treatment system and thus to the receiving waters. Over-flocculation may discharge the flocculant, with adverse effects on aquatic life, including death of organisms.

The following textbooks contain detailed presentations on this subject:

- Fair, G., J. Geyer and D. Okun, Water and Wastewater Engineering, Wiley and Sons, NY, 1968.
- American Water Works Association, Water Quality and Treatment, McGraw-Hill, NY, 1990.
- Weber, W.J, Physiochemical Processes for Water Quality Control, Wiley and Sons, NY, 1972.

FLOCCULATION SYSTEMS MUST BE DESIGNED BY KNOWLEDGEABLE PERSONNEL. A CONSULTANT SHOULD BE CONTRACTED TO DEVELOP AND IMPLEMENT A SYSTEM. OPERATING PERSONNEL MUST BE SPECIFICALLY TRAINED TO OPERATE THESE SYSTEMS.

Direct Soil Application of Flocculant:

As an alternative to an extensive flocculation system, a polyacrylamide (PAM) can be applied to the bare soil surface to bind the soil particles together and minimize erosion, and promote infiltration. PAMs are long chains of polymers synthesized from natural gas. Until recently, PAM has been used most frequently on agricultural land as a soil conditioner, but its use has expanded to include construction sites and industrial water treatment. Since it is a flocculant, it may cause silt deposition when it comes in contact with sediment laden waters downstream from the site. For this reason, runoff should be collected and treated to remove the chemical before releasing it from the site.

The City of Redmond, Washington successfully tested this method on at least two construction sites of 3,000 square feet of clay soils. The PAM was applied at a rate of three pounds per acre, a level that was determined to be environmentally non-toxic, and spread dry with a hand held fertilizer spreader. The City of Redmond recommends that

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periodic bioassays be performed to confirm the absence of toxicity.

Design Considerations:

It may not be possible to fully incorporate all of the design considerations at a particular location because of practical limitations at construction sites. Nonetheless it is important to recognize the following:

- Use the right polymer at the right dosage. A dosage that is either too low or too high will not produce the lowest turbidity. There is an optimum dosage rate, and more is not always better.
- Rapidly mix the coagulant into the water to ensure proper dispersion.
- A distinct flocculation step is important to increase the rate of settling, to produce the lowest turbidity and to keep the dosage rate as low as possible.
- Too little energy input into the water during the flocculation stage results in floc that is too small and/or insufficiently dense. Too much energy can rapidly destroy floc as it is formed.
- Since the volume of the basin is a determinant in the amount of energy per unit volume, a basin can be too big relative to the size of the energy input system.
- Care must be taken in the design of the withdrawal system to minimize outflow velocities.

In practice, the only way to determine whether a polymer is effective for a specific application is to perform preliminary or on-site testing. Polymer effectiveness can degrade with time and also from other influences. Thus, manufacturers' recommendations for storage must be followed.

Application of coagulants and flocculant-aids at the appropriate concentration or dosage rate for optimum turbidity removal is important for management of chemical cost, as well as for effective performance. The optimum dose in a given application depends on several site-specific features. The turbidity of untreated water is a primary determinant. The surface charge of particles to be removed is also important. Environmental factors that can influence dosage rate are water temperature, pH, and the presence of constituents that consume or otherwise affect polymer effectiveness (for example, color, oils). Preparation of working solutions and thorough dispersal of polymers in water to be treated is also important to establish the appropriate dosage rate. A well-managed treatment system is extremely important.

Number of treatment cells:

It is far better to have two treatment cells rather than one. With two cells, if something goes wrong with the treatment of a particular batch, treatment can continue in the second cell while addressing the problem in the first cell. In addition, because it takes time to empty the cell after treatment, while one cell is being emptied, the other can be filled and treated. Finally, there is always uncertainty over the time required to achieve satisfactory clarification. If one had confidence that satisfactory settling could be achieved consistently within 30 to 60 minutes, it might be reasonable to conclude that only one cell is needed, since turnover could occur rapidly. Using two treatment cells thus helps ensure that there is always storage available for incoming flow.

Volume of treatment cells:

When determining the volume per cell, there are two opposing considerations. A large cell is desirable to treat a large volume of water each time a batch is processed. However, the larger the cell the longer the time required to empty the cell. It is also possible that in

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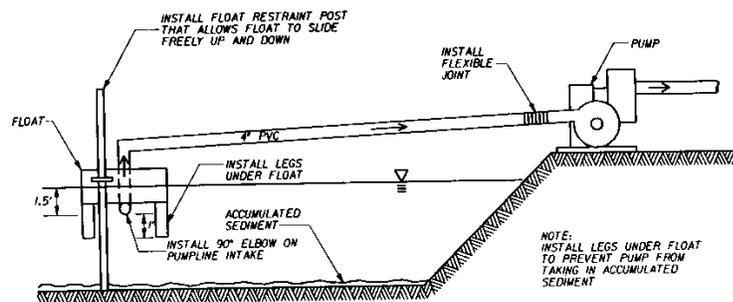
a larger the cell the flocculation process will be less effective, resulting in longer settling times. The simplest approach to sizing the treatment cell is to multiply the allowable discharge rate by the desired draw-down time. A good rule of thumb is to allow about four hours for draw-down.

A four-hour draw-down time allows one batch to be processed in each cell during an eight-hour work period. A batch can be prepared in the morning, including an hour or so of flocculation, about two hours of settling, and then discharge (although discharge could occur after hours). Or a batch can be prepared in the afternoon, followed by settling overnight, with discharge the following morning. Whatever timing is used, a logical approach is to size the cell to fit the desired draw-down time, constrained by the allowable release rate.

Flow control, inlets and outlets:

Currents in the treatment cell can reduce settling efficiency. Currents can be produced by wind, by differences between the temperature of the incoming water and the water in the settling pond or tank, by differences in the temperature in the upper and lower portions of the settling containment (in low flow conditions), and by flow conditions near the inlets and outlets. Calm water such as that which occurs during batch clarification provides a good environment for effective performance, as many of these factors become less important in comparison to flow-through settling basins. The use of four rather than one inlet pipe reduces the inlet velocity. Reduced inlet velocity reduces the possibility that sediments will be picked up and discharged. Flow leaving the settling unit is an important source of currents in batch systems. Because flocs are relatively small and light, the exit velocity of the water must be as low as possible. Sediment on the bottom of the basin can be resuspended and removed by fairly modest velocities.

Design the withdrawal device used for removing the liquid from the settling pond to avoid pulling settled sediments from the bottom of the treatment cell. One approach is to place the discharge outlet near the area where treated water enters the cell. At this location there will be relatively little accumulation of solids because of the turbulence created by the incoming water. A second approach is to use the float configuration as shown in the diagram below.



FLOATING PUMPLINE INTAKE (TYP.)

A third approach is to modify the float to include a square or circular weir that the water enters before reaching the outlet pipe. Weirs reduce the exit velocity of the water leaving the clarification area of the cell. For example, a weir with 10 feet of circumference would significantly reduce the flow rates (velocity) over the weir. Another example is used in

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water and wastewater clarifiers that include what is known as effluent launders. These are long troughs, placed at the outlet end the clarifier or around the outside circumference in the case of circular clarifiers, into which the water flows.

The weir may provide at least one and possibly two benefits with the treatment of stormwater. First, by reducing the carry-out of floc that is still settling while the cell is being drawn down, it could result in lower effluent turbidities and/or allow a reduction in the settling time to achieve the same effluent turbidity. Secondly, the weir could reduce if not eliminate the tendency for the withdrawal pipe to discharge previously settled sediment.

Flocculant Example

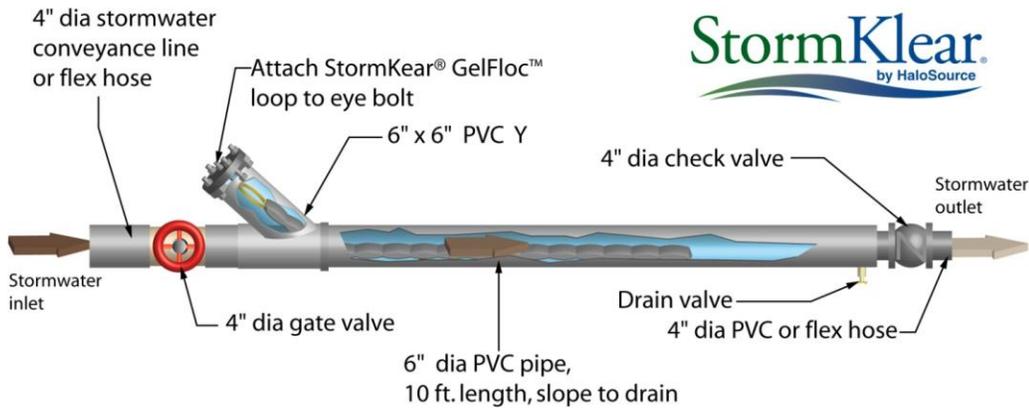
The following example illustrates treatment considerations common to most flocculant systems. There is a flocculant made from crab and shrimp shells call Chitosan¹, available as a liquid or a solid. The solid form is packaged in a multi-chambered sock for placement inside of a pipe where the stormwater runoff will flow around it, dissolving the amount of flocculant needed to settle out sediments and turbidity. Settling is readily apparent after five minutes of retention time.



Chitosan Sock (Left) and Treated high turbidity sample after five minutes (Right)

¹ Use of trade names is for illustrative purposes only and should not be construed as a DEQ endorsement of a particular product.

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The diagram below depicts a single pipe system for use of the Chitosan GelFloc® Sock before a tank. If the turbidity is very high a parallel pipe splitting half of the flow may be needed in order to provide sufficient Chitosan for the loading.



Chitosan Treatment System with Sand Filter

The system in the photo above adds a sand filter to remove the suspended solids when the retention time is less than the minimum to obtain full settling. The larger particles formed which have not settled out will be trapped by the sand filters.

2.27 ElectroFloc

Description:

Experiments with a process tentatively called ElectroFloc indicate that it may be possible to use electricity to floc dissolved metals, TSS, and turbidity from stormwater runoff. Charging aluminum plates with about 40 volts DC in a batch process has been shown to create an approximately equal number of positively and negatively charged particles in suspension. These dissimilarly charged particles attract each other and due to aluminum ions present remain in contact with each other in as little as five minutes per liter. This works for TSS and turbidity in the lab and should work for dissolved metals as the metals usually are not really dissolved but submicron in size. Dissolved oxygen is increased in the water due to the splitting of the water molecule into hydrogen and oxygen.



Laboratory Test Cell

Flocculated turbidity can be seen forming between the plates.

2.28 Concrete and Asphalt Production

Description:

Asphalt application can contribute high levels of toxic hydrocarbons, oils and greases, and heavy metal to runoff. Concrete pouring can contribute suspended solids and heavy metals to stormwater runoff and cause pH increases in receiving waters.

Design Considerations:

- Use drip pans, ground cloths and perhaps even heavy cardboard or plywood wherever concrete, asphalt and asphalt emulsion chunks and drips are likely to fall, such as beneath extraction points from mixing equipment.
- Place storm drain covers over all nearby drains at the beginning of the workday. Catch basin inserts or other suitable protection may also be used.
- Collect all accumulations with a shovel for proper disposal at the end of the workday.
- Contain and collect the slurry from exposed aggregate washing, where the top layer of unhardened concrete is hosed or scraped off to leave a rough finish. Use a cover to

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protect storm drains.

- Designate a washout area on-site where cleaning of concrete trucks, troughs, and pumps can take place and where the rinse water is controlled in an infiltration sump on-site.
- If possible, cover portable asphalt mixing equipment with an awning to avoid contact with rainfall.

Maintenance:

- Sweep the pouring area, if it is paved, at the end of each day to collect loose aggregate particles. Do not hose down the area to a storm drain.
- If the concrete truck washout area (pit) is full, then either relocate it to an area that infiltrates better or remove the excess liquid and properly dispose of it.

2.29 Concrete Truck Washout and Cleanup



Description:

Cleanup from the chute and other equipment from a concrete truck after emptying can cause high pH in stormwater runoff and can fill catch basins and storm sewer piping with fine particles. BMPs are needed to remove this material.

Concrete Washout Area

This approach uses an infiltration pit or collects the washout material in a tank. Select an area of the site for the washdown activities from concrete truck. Size the pit based on the infiltration rate of the soil and the anticipated usage rate (an estimated two gallons of water is needed per concrete truck chute washout), in which the residual concrete, aggregate, and water would settle and infiltrate. The area should also be on rock so that the truck does not become stuck. The washout will occur from directly behind the truck. It is a good idea to use a graveled road or parking area that may or may not become paved later. With care to prevent or minimize loss from carryover or splash-over, the use of a pit can neutralize the high pH with the low pH soil contact and virtually eliminate this particulate runoff issue.

Recycling System:

A recycling system, similar to that shown in the photograph on the right above, can be added to the concrete truck to catch the wash-down materials and pump them back into the truck for transport back to the concrete batch plant for recycling. Benefits of using a truck-mounted recycling system include that the concrete trucks do not have to relocate from the pouring area to perform clean-up, and that the material washed off is recycled.

2.30 Above-ground Storage Tanks

Description:

Tanks used on construction sites to refuel construction vehicles need to have secondary containment. The tank shown on the left is held in place by earthen berms and is a single walled tank. Notice the darker stained soil in front of the tank. Keep the hose inside of a contained area when not in use so that any residual fuel in the hose does not leak out into the soil and thus to stormwater runoff.



A containment pallet similar to the one shown on the right could provide the secondary containment needed. The amount of rainfall on the small surface area involved with the tank and pallet would not accumulate significant amounts of stormwater to be of concern. A plastic sheeting roof over the containment area can be erected to reduce even this amount of stormwater contact.



Maintenance:

- Check containers daily for leaks and spills. Replace containers that are leaking, corroded, or otherwise deteriorating.
- Collect all spilled liquids and properly dispose of them.
- Sweep and clean the storage area monthly if it is paved; never hose down the area to a storm drain.

2.31 Container and Waste Storage

Description:

This BMP refers to containers located outdoors and used to temporarily store materials, such as accumulated food wastes, paints, oils, vegetable or animal grease, solvents, and waste materials. If the construction site has container storage of materials in an outdoor location, consider using a portable building. These storage buildings have secondary containment, can be sprinklered, and can be heated or cooled to control the temperature of the materials. The doors typically can be locked for secure storage. The fuel tank from the previous BMP could be placed in one of these buildings.

Design Considerations:

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Segregate and securely store incompatible or reactive materials in separate containment areas in order to prevent the mixing of chemicals should spills occur.

Maintenance:

Sweep the area regularly, if paved, to collect dirt and debris; never use water to hose down the area into a storm drain.

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<http://www.universalsystemsinc.net/electrocoagulation.html>
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<http://www.oiltrap.com/>
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ESCP PARTS I THROUGH III FORMS

The information that is required in the *Part I, and Part II ESCP Narrative Forms* could be included on the required *ESCP Drawings* instead of submittal of the *Narrative Forms*. The *Narrative Part III Section 1* form is a checklist for use in making sure that all of the required information is provided in the submittal documents and as such does not need to be submitted to DEQ.

Narrative Part III Section 2 must be included on the *ESCP Drawings*. The set of *Example Construction Plan Drawings* (examples to be used as an alternative to the Narrative Forms) are provided at: <http://www.deq.state.or.us/wq/stormwater/constappl.htm>.

PART 1: ESCP NARRATIVE FORM

1. Permit Registration Information

Date: _____
Project Name: _____
Prepared By: _____
Company Name: _____
E-mail Address: _____

Please answer the following questions as indicated. If needed, additional space is provided for you at the end of this form. You may also attach any information you feel is pertinent to the project.

2. Oregon Professional Certification Information

Is your Erosion and Sediment Control Plan (ESCP) for an activity that covers 20 acres or more of disturbed land (Schedule A.12.a.i)

Yes No

Does your Erosion and Sediment Control Plan require engineered facilities such as settling basins and/or diversion structures? (Schedule A.12.a.ii)

Yes No

If you answered "Yes" to question #1, the ESCP must be prepared and stamped by an Oregon Registered Profession Engineer, Oregon Registered Landscape Architect, Oregon Certified Engineering Geologist, or Certified Professional in Erosion and Sediment Control (Soil and Water Conservation Society). If you answered "Yes" to question #2, the ESCP must be prepared and stamped by an Oregon Registered Professional Engineer. Please provide the following information and use the space provided to imprint your seal.

Name: _____

Address: _____

Telephone: _____

Imprint Seal Above

3. Inspector Qualification Information

Provide the following information on the Erosion and Sediment Control Inspector. This is a person that works for the applicant and not a government employee. The consultant, general contractor, project manager, or person who prepared the ESCP may be designated with their agreement as the initial or final ESC Inspector. Upon designating an inspector(s), submit to DEQ or Agent their name(s), and contact information. All designated ESC Inspectors must be qualified through certification, training, and/or experience in erosion and sediment control. Please provide the number of hours of training, days, months, and/or years of experience in erosion and sediment control design, installation, maintenance, and/or inspection (specify which or all). (NPDES 1200-C Permit Schedule A.12.b.iii).

The inspector is a person with training and experience in erosion prevention and sediment controls and best management practices and should have one of the following levels of skill. A copy of a certification, training, or level/hours of experience should be provided to DEQ or Agent in the form below:

Acceptable Certification (Schedule A.12.b.iii.2):

- a. Certified Professional in Erosion and Sediment Control (CPESC),
- b. Certified Professional in Storm Water Quality (CPSWQ),
- c. Washington Department of Ecology's Certified Erosion and Sediment Control Lead (CESCL) Certification,
- d. Rogue Valley Sewer Services Erosion and Sediment Control Certification.

*After January 1, 2017, for projects that are five or more acres, inspectors must have at least one of these acceptable certifications.

Acceptable Training:

- a. Certification/training program designed for persons involved in any phase of erosion and sediment control work. Areas covered must include information on soils, the erosion process, sedimentation process, standards and specifications for vegetative and structural erosion control practices, laws, regulations, construction inspection and field investigation; or
- b. Attendance at a seminar or training class in Erosion and Sediment Control Best Management Practices (BMPs).

Qualified Experience:

- a. Designing Erosion and Sediment Control Plans and/or
- b. Installation of erosion and sediment controls and/or
- c. Maintenance of erosion and sediment controls and/or
- d. Inspection of erosion and sediment controls

Name: _____

Telephone: _____

Address: _____

E-mail: _____

Certificate Program and number: _____

Training: _____

Experience: _____

4. Narrative Site Description

a. Describe the nature of the construction activity and the final use of the site, that is, what will the site be used for at the completion of the construction. (Schedule A.12.b.iv):

b. Describe the origin and nature of fill material to be used and soils prior to disturbance. (Schedule A.12.b.iv.4):

5. Water Quality Requirements for TMDL and 303(d) Listed Waterbodies (skip if not applicable)

If there is a potential for discharge of stormwater to directly discharge or discharge through a conveyance system to a portion of a waterbody that is listed for turbidity or sedimentation or that has an established Total Maximum Daily Load (TMDL) for sedimentation or turbidity from the construction site, then one or more of the BMPs listed below must be implemented. Identify the selected BMP(s) in the ESCP as one that addresses this condition of the permit, and provide the rationale for choosing the selected BMP(s). (Schedule A.11.) The 303 (d) list can be found at: <http://www.deq.state.or.us/wq/assessment/rpt2010/search.asp>. Search under Category 5 (303(d)) and Category 4a (TMDL approved).

Will implement one or more of the following BMPs to control and treat sediment and turbidity:

- i. Compost berms, compost blankets, or compost socks;
- ii. Erosion control mats;
- iii. Tackifiers used in combination with perimeter sediment control BMPs;
- iv. Established vegetated buffers sized at 50 feet perpendicular to the slope plus an additional 25 feet perpendicular to the slope per 5 degrees of slope full width of the disturbed slope
- v. Water treatment by electro-coagulation, flocculation, filtration; or
- vi. Other substantially equivalent sediment or turbidity BMP approved by DEQ or Agent.

BMP

Rationale

6. Natural Buffer Zone

- a. If a waters of the state is within the project site or within 50 feet of the project boundary, and a natural buffer exists within 50 feet of the water of the state, the ESCP must delineate and protect this area with orange fencing or flagging and maintain existing buffer until completion of project. All discharge must be filtered prior to entering the natural buffer to avoid sediment build up. If scour is an issue, an energy dissipater may need to be installed.

Natural Buffer means, for the purposes of this permit, an area of undisturbed natural cover surrounding surface waters within which construction activities are restricted. Natural cover includes the natural vegetation, exposed rock, and barren ground that existed prior to commencement of earth-disturbing activities.

- b. If project will reduce natural buffer zone under 50 feet of waters of the state, the ESCP must include one or more of the following BMPs to control and treat sediment and turbidity:
 - i. Compost berms, compost blankets, or compost socks;
 - ii. Erosion control mats;
 - iii. Tackifiers used in combination with perimeter sediment control BMPs;
 - iv. Water treatment by electro-coagulation, flocculation, filtration; or
 - v. Other substantially equivalent sediment or turbidity BMP approved by DEQ or Agent.

BMP

Rationale

- c. The Natural Buffer Zone requirements do not apply if:
 - (1) No natural buffer exists due to development that occurred prior to the initiation of planning for the current project; or
 - (2) There is no discharge of stormwater to the water of the state through the area between the disturbed portions of the site and the surface water located within the project site or within 50 feet of the site. This includes situations where the permit registrant has implemented control measures, such as a berm or other barrier, that will prevent such discharges; or
 - (3) There is a CWA Section 404 permit and 401 WQC issued for the project; or
 - (4) Construction is for a water-dependent structure or water access areas (for example, pier, boat ramp, or trail).

PART II: BMPs WITH ESCP IMPLEMENTATION SCHEDULE FORM

The following controls and practices (BMPs), if appropriate for the site, are required in the ESCP. Submission of all ESCP revisions to DEQ are not required. ESCP revisions must be submitted in 10 days for specific conditions. See 1200-C permit (Schedule A.12.c.iv).

		YEAR:																		
BMPs		MONTH #:																		
Biobags																				
Bioswales																				
Check Dams																				
Compost Berm																				
Compost Blankets																				
Compost Socks																				
Concrete Truck Washout																				
Construction Entrance																				
Dewatering (treatment location, schematic, & sampling plan required)																				
Drainage Swales																				
Earth Dikes (Stabilized)																				
Energy Dissipaters																				
Erosion Control Blankets & Mats (Specify type)																				
Hydroseeding																				
Inlet Protection																				
Mulches (Specify Type)																				
Mycorrhizae/ Biofertilizers																				
Natural Buffer Zone																				
Orange fencing (protecting sensitive/preserved areas)																				
Outlet Protection																				
Permanent Seeding and Planting																				
Pipe Slope Drains																				
Plastic Sheeting																				
Preserve Existing Vegetation																				
Sediment Fencing																				
Sediment Barrier																				
Sediment Trap																				
Sodding																				
Soil Tackifiers																				
Storm Drain Inlet Protection																				
Straw Wattles (or other materials)																				
Temporary Diversion Dikes																				
Temporary or Permanent Sedimentation Basins																				
Temporary Seeding and Planting																				
Treatment System (O & M plan required)																				
Unpaved roads graveled or other BMP on the road																				
Vegetative Buffer Strips																				

PART III: CHECKLIST OF REQUIRED ELEMENTS OF ESCP DRAWINGS

Section 1. Information Required on ESCP Drawings

The following items must be depicted on ESCP drawings, as applicable:	Yes	No	N/A*
a. Total property boundary including surface area of the development; (Sch. A.12.b.v.3.a)			
b. Areas of soil disturbance (including, but not limited to, showing cut and fill areas and pre-and post-development elevation contours); (Sch. A.12.b.v.3.b)			
c. Drainage patterns before and after finish grading; (Sch. A.12.b.v.3.c)			
d. Discharge points; (Sch. A.12.b.v.3.d)			
e. Areas used for the storage of soils or wastes; (Sch. A.12.b.v.3.e)			
f. Areas where vegetative practices are to be implemented; (Sch. A.12.b.v.3.f)			
g. All erosion and sediment control measures or structures; (Sch. A.12.b.v.3.g)			
h. Identify the type of seed mix (percentages of the various seeds of annuals, perennials and clover) and other plantings. (Sch. A.7.a.v.3)			
i. Critical riparian areas, sensitive preserved vegetative areas, including trees and their root zones. (Sch. A.8.c.i.1)			
j. Runoff controls to minimize erosion and scour. BMPs such as, diversion, slope drains, diversion dikes, check dams and drainage swales. (Sch. A.7.c)			
k. Stabilized site entrances and access roads including, but not limited to construction entrances, roadways and equipment parking areas (for example, using geotextile fabric underlay). (Sch. A.7.d.ii)			
l. Perimeter sediment control, including storm drain inlet protection as well as all sediment basins, traps, and barriers. (Sch. A.7.d.i)			
m. Stockpile management, including dust control and location. (Sch. A.7.e.ii)			
n. Concrete truck and other concrete equipment washout areas. (Sch. A.8.c.i.(6))			
o. Impervious structures after construction is completed (including buildings, roads, parking lots and outdoor storage areas); (Sch. A.12.b.v.3.h)			
p. Springs, wetlands and other surface waters on site or adjacent to the site; (Sch. A.12.b.v.3.i)			
q. Temporary and permanent stormwater conveyance systems; (Sch. A.12.b.v.3.j)			
r. Onsite water disposal locations (for example, for dewatering); (Sch. A.12.b.v.3.k)			
s. Storm drain catch basins depicting inlet protection, and a description of the type of catch basins used (for example, field inlet, curb inlet, grated drain and combination); (Sch. A.12.b.v.3.l)			
t. Septic drain fields; (Sch. A.12.b.v.3.m)			
u. Existing or proposed drywells or other UICs; (Sch. A.12.b.v.3.n)			
v. Drinking water wells on site or adjacent to the site (Sch. A.12.b.v.3.o)			
w. Planters; (Sch. A.12.b.v.3.p)			
x. Sediment and erosion controls including installation techniques; (Sch. A.12.b.v.3.q)			
y. Natural buffer zones and any associated BMPs for all areas within 50 feet of a waters of the state (Sch. A.12.b.v.3.r)			
z. Detention ponds, storm drain piping, inflow and outflow details (Sch. a.12.b.v.3.s)			

Section 2. Required Inspection Table and ESCP Drawing Standard Notes

When omitting ESCP Narratives, include one electronic version and one complete drawing set, containing a cover sheet with project location, required standard notes and inspection table, all numbered sheets to scale with match lines, and any corresponding ESC detail.

Site Condition	Minimum Frequency
1. Active period	Daily when stormwater runoff, including runoff from snow melt, is occurring. At least once every 14 days, regardless of whether stormwater runoff is occurring.
2. Prior to the site becoming inactive or in anticipation of site inaccessibility	Once to ensure that erosion and sediment control measure are in working order. Any necessary maintenance and repair must be made prior to leaving the site.
3. Inactive periods greater than fourteen (14) consecutive calendar days	Once every month.
4. Periods during which the site is inaccessible due to inclement weather	If practical, inspections must occur daily at a relevant and accessible discharge point or downstream location.
5. Periods during which discharge is unlikely due to frozen conditions.	Monthly. Resume monitoring immediately upon melt, or when weather conditions make discharges likely.

1. Hold a pre-construction meeting of project construction personnel that includes the inspector to discuss erosion and sediment control measures and construction limits. (Schedule A.8.c.i.(3))
2. All inspections must be made in accordance with DEQ 1200-C permit requirements. (Schedule A.12.b and Schedule B.1)
3. Inspection logs must be kept in accordance with DEQ's 1200-C permit requirements. (Schedule B.1.c and B.2)
4. Retain a copy of the ESCP and all revisions on site and make it available on request to DEQ, Agent, or the local municipality. During inactive periods of greater than seven (7) consecutive calendar days, the above records must be retained by the permit registrant but do not need to be at the construction site. (Schedule B.2.c)
5. All permit registrants must implement the ESCP. Failure to implement any of the control measures or practices described in the ESCP is a violation of the permit. (Schedule A 8.a)
6. The ESCP must be accurate and reflect site conditions. (Schedule A.12.c.i)
7. Submission of all ESCP revisions is not required. Submittal of the ESCP revisions is only under specific conditions. Submit all necessary revision to DEQ or Agent within 10 days. (Schedule A.12.c.iv. and v)
8. Phase clearing and grading to the maximum extent practical to prevent exposed inactive areas from becoming a source of erosion. (Schedule A.7.a.iii)
9. Identify, mark, and protect (by construction fencing or other means) critical riparian areas and vegetation including important trees and associated rooting zones, and vegetation areas to be preserved. Identify vegetative buffer zones between the site and sensitive areas (e.g., wetlands), and other areas to be preserved, especially in perimeter areas. (Schedule A.8.c.i.(1) and (2))
10. Preserve existing vegetation when practical and re-vegetate open areas. Re-vegetate open areas when practicable before and after grading or construction. Identify the type of vegetative seed mix used. (Schedule A.7.a.v)
11. Maintain and delineate any existing natural buffer within the 50-feet of waters of the state. (Schedule A.7.b.i.and (2(a)(b))
12. Install perimeter sediment control, including storm drain inlet protection as well as all sediment basins, traps, and barriers prior to land disturbance. (Schedule A.8.c.i.(5))
13. Control both peak flow rates and total stormwater volume, to minimize erosion at outlets and downstream channels and streambanks. (Schedule A.7.c)
14. Control sediment as needed along the site perimeter and at all operational internal storm drain inlets at all times during construction, both internally and at the site boundary. (Schedule A.7.d.i)
15. Establish concrete truck and other concrete equipment washout areas before beginning concrete work. (Schedule A.8.c.i.(6))
16. Apply temporary and/or permanent soil stabilization measures immediately on all disturbed areas as grading progresses. Temporary or permanent stabilizations measures are not required for areas that are intended to be left unvegetated, such as dirt access roads or utility pole pads.(Schedule A.8.c.ii.(3))
17. Establish material and waste storage areas, and other non-stormwater controls. (Schedule A.8.c.i.(7))
18. Prevent tracking of sediment onto public or private roads using BMPs such as: construction entrance, graveled (or paved) exits and parking areas, gravel all unpaved roads located onsite, or use an exit tire wash. These BMPs must be in place prior to land-disturbing activities. (Schedule A 7.d.ii and A.8.c.i(4))

19. When trucking saturated soils from the site, either use water-tight trucks or drain loads on site. (Schedule A.7.d.ii.(5))
20. Control prohibited discharges from leaving the construction site, i.e., concrete wash-out, wastewater from cleanout of stucco, paint and curing compounds. (Schedule A.6)
21. Use BMPs to prevent or minimize stormwater exposure to pollutants from spills; vehicle and equipment fueling, maintenance, and storage; other cleaning and maintenance activities; and waste handling activities. These pollutants include fuel, hydraulic fluid, and other oils from vehicles and machinery, as well as debris, fertilizer, pesticides and herbicides, paints, solvents, curing compounds and adhesives from construction operations. (Schedule A.7.e.i.(2))
22. Implement the following BMPs when applicable: written spill prevention and response procedures, employee training on spill prevention and proper disposal procedures, spill kits in all vehicles, regular maintenance schedule for vehicles and machinery, material delivery and storage controls, training and signage, and covered storage areas for waste and supplies. (Schedule A.7.e.iii.)
23. Use water, soil-binding agent or other dust control technique as needed to avoid wind-blown soil. (Schedule A 7.a.iv)
24. The application rate of fertilizers used to reestablish vegetation must follow manufacturer's recommendations to minimize nutrient releases to surface waters. Exercise caution when using time-release fertilizers within any waterway riparian zone. (Schedule A.9.b.iii)
25. If an active treatment system (for example, electro-coagulation, flocculation, filtration, etc.) for sediment or other pollutant removal is employed, submit an operation and maintenance plan (including system schematic, location of system, location of inlet, location of discharge, discharge dispersion device design, and a sampling plan and frequency) before operating the treatment system. Obtain plan approval before operating the treatment system. Operate and maintain the treatment system according to manufacturer's specifications. (Schedule A.9.d)
26. Temporarily stabilize soils at the end of the shift before holidays and weekends, if needed. The registrant is responsible for ensuring that soils are stable during rain events at all times of the year. (Schedule A 7.b)
27. As needed based on weather conditions, at the end of each workday soil stockpiles must be stabilized or covered, or other BMPs must be implemented to prevent discharges to surface waters or conveyance systems leading to surface waters. (Schedule A 7.e.ii.(2))
28. Construction activities must avoid or minimize excavation and bare ground activities during wet weather. (Schedule A.7.a.i)
29. Sediment fence: remove trapped sediment before it reaches one third of the above ground fence height and before fence removal. (Schedule A.9.c.i)
30. Other sediment barriers (such as biobags): remove sediment before it reaches two inches depth above ground height and before BMP removal. (Schedule A.9.c.i)
31. Catch basins: clean before retention capacity has been reduced by fifty percent. Sediment basins and sediment traps: remove trapped sediments before design capacity has been reduced by fifty percent and at completion of project. (Schedule A.9.c.iii & iv)
32. Within 24 hours, significant sediment that has left the construction site, must be remediated. Investigate the cause of the sediment release and implement steps to prevent a recurrence of the discharge within the same 24 hours. Any in-stream clean-up of sediment shall be performed according to the Oregon Division of State Lands required timeframe. (Schedule A.9.b.i)
33. The intentional washing of sediment into storm sewers or drainage ways must not occur. Vacuuming or dry sweeping and material pickup must be used to cleanup released sediments. (Schedule A.9.b.ii)
34. The entire site must be temporarily stabilized using vegetation or a heavy mulch layer, temporary seeding, or other method should all construction activities cease for 30 days or more. (Schedule A.7.f.i)
35. Provide temporary stabilization for that portion of the site where construction activities cease for 14 days or more with a covering of blown straw and a tackifier, loose straw, or an adequate covering of compost mulch until work resumes on that portion of the site. (Schedule A.7.f.ii)
36. Do not remove temporary sediment control practices until permanent vegetation or other cover of exposed areas is established. Once construction is complete and the site is stabilized, all temporary erosion controls and retained soils must be removed and disposed of properly, unless doing so conflicts with local requirements. (Schedule A.8.c.iii(1) and D.3.c.ii and iii)

BMP Matrix of Oregon BMPs -> Washington BMPs

Oregon	OR BMP	WA BMP	Washington
Preservation of Existing Vegetation	2.1	C-101 C-102	Preserving Natural Vegetation Buffer Zones
Reestablish Vegetation	2.3	C-125	Topsoiling / Composting
Reestablish Vegetation	2.3	C-120	Temporary and Permanent Seeding
Reestablish Vegetation	2.3	C-124	Sodding
Hydroseeding, Mulches, Tackifiers	2.4	C-121	Mulching
Compost Cover	2.5	C-121	Mulching
Erosion Control Blankets and Mats	2.6	C-122	Nets and Blanket
Dust Control	2.8	C-140	Dust Control
Surface Roughening	2.9	C-130	Surface Roughening
Level Spreaders	2.10	C-206	Level Spreaders
Check Dams	2.11	C-207	Check Dams
Diversion of Run-on	2.12	C-200	Interceptor Dike or Swale
Diversion of Run-on	2.12	C-205	Subsurface Drains
Bioswale	2.13	C-201	Grass Line Swale Channel
Slope Drain	2.14	C-204	Pipe Slope Drains
Energy Dissipator	2.15	C-209	Outlet Protection
Straw Wattles	2.16	C-235	Wattles
Compost Berms and Socks	2.18	C 121	Mulching
Gravel Construction Entrance & Wheel Wash	2.19	C-105 C-106	Stabilized Construction Entrance Wheel Wash
Catch Basin Inlet Protection	2.21	C-220:	Storm Drain Inlet Protection
Excavated Sediment Trap	2.22	C-240	Sediment Trap
Sediment Basin	2.23	C-241	Temporary Sediment Pond
Sediment Fence	2.24	C-233	Silt Fence
Concrete Truck Washout & Cleanup	2.29	C-154	Concrete Washout
Straw Bale Dike		C-230	Straw Bale Barrier

BMP Matrix of Washington BMPs -> Oregon BMPs

Washington	WA BMP	OR BMP	Oregon
Preserving Natural Vegetation Buffer Zones	C-101 C-102	2.1	Preservation of Existing Vegetation
Stabilized Construction Entrance Wheel Wash	C-105 C-106	2.19	Gravel Construction Entrance & Wheel Wash
Temporary and Permanent Seeding	C-120	2.3	Reestablish Vegetation
Mulching	C-121	2.5	Compost Cover
Mulching	C-121	2.4	Hydroseeding, Mulches, Tackifiers
Nets and Blanket	C-122	2.6	Erosion Control Blankets and Mats
Sodding	C-124	2.3	Reestablish Vegetation
Topsoiling / Composting	C-125	2.3	Reestablish Vegetation
Surface Roughening	C-130	2.9	Surface Roughening
Dust Control	C-140	2.8	Dust Control
Concrete Washout	C-154	2.29	Concrete Truck Washout & Cleanup
Interceptor Dike or Swale	C-200	2.12	Diversion of Run-on
Grass Line Swale Channel	C-201	2.13	Bioswale
Pipe Slope Drains	C-204	2.14	Slope Drain
Subsurface Drains	C-205	2.12	Diversion of Run-on
Level Spreaders	C-206	2.1	Level Spreaders
Check Dams	C-207	2.11	Check Dams
Outlet Protection	C-209	2.15	Energy Dissipator
Storm Drain Inlet Protection	C-220:	2.21	Catch Basin Inlet Protection
Straw Bale Barrier	C-230		Straw Bale Dike
Silt Fence	C-233	2.24	Sediment Fence
Wattles	C-235	2.16	Straw Wattles
Sediment Trap	C-240	2.22	Excavated Sediment Trap
Temporary Sediment Pond	C-241	2.23	Sediment Basin

CHAPTER 13

SPILL REPORTING AND CLEANUP

Proper management of hazardous waste hopefully will significantly reduce the chance of a spill from ever occurring. However, if a spill happens, you need to know what to do. This chapter covers what to do in case of a spill.



CHAPTER 13

FEDERAL AND STATE LAWS

A spill or release may require reporting under several federal laws and Oregon law, including:

- Resource Conservation and Recovery Act (RCRA)
- Toxic Substances Control Act (TSCA)
- Hazardous Materials Transportation Act (HMTA)
- Clean Water Act (CWA)
- Comprehensive Environmental Response Compensation and Liability Act (CERCLA)
- Superfund Amendment Reauthorization Act (SARA) Title 3
- Oregon Spill Reporting OAR 340 Division 142

The Congressional intent is to have the Reportable Quantity (RQ) of a hazardous material be the same under all the Acts. However, there may be a lag time before RQ levels are made uniform under all the Acts. Also, chemicals appearing on one Act's list may not be found on another. For example, 130 of the 370 SARA Title 3 extremely hazardous substances may be found in the CERCLA hazardous substance list of 721 chemicals that have reportable quantities in case of a spill. The remaining 240 extremely hazardous substances not found on the CERCLA list have a reportable quantity level and, in the case of spills, must be reported under Title 3. If an emergency coordinator referred to the CERCLA list and did not find the chemical listed with a reportable quantity, the coordinator would be in compliance with CERCLA by not reporting the spill. However, the coordinator would be in non-compliance with emergency notification requirements under Title 3 provisions.

When To Report

It is important to avoid potential risks in this reporting area. If a serious emergency occurs and the local fire department has been called, or if there has been a spill that extends outside the plant or could reach surface water, immediately call the phone numbers below and give them the information they request.

The National Response Center (NRC)

1-800-424-8802

The Oregon Emergency Response System (OERS)

**In-State: 1-800-452-0311, or
Out-of-State: 503-378-4124**

Telephone reports to NRC and OERS are required when an accident involving a hazardous material results in:

- Death
- Hospitalization
- Property damage in excess of \$50,000
- Any situation a business thinks should be reported
- A discharge of a hazardous material in excess of the reportable quantity in the current 40 CFR Table 302.4 and OAR 340-142

The NRC will inform the caller if the incident does not merit reporting. But anyone who should call and does not is subject to a \$10,000 fine, one year in jail, or both. Spills should also be reported to state and local officials. When reporting a spill, be prepared to give the following information:

- Name, address, and U.S. DEQ/EPA ID number of the facility
- Date, time, and type of incident (e.g., spill or fire)
- Quantity and type of hazardous material, hazardous substance or hazardous waste involved in the incident
- Extent of any injuries

Estimated quantity and disposition of any recovered materials

Oregon State Spill Rules

State rules regarding spills or releases of oil and/or hazardous substances is found in OAR 340, Division 142 or go to the website at <http://www.deq.state.or.us/regulations/rules.htm>. The rules state: In the event of a spill or release or threatened spill or release of oil or hazardous material, the person owning or having control over the oil or hazardous material shall take the following actions, as appropriate.

- Immediately implement the site's Spill Prevention Control and Countermeasure (SPCC) or contingency plan.
- If no plan exists, immediately take the following actions:
 - a. Activate alarms or warn persons in the immediate area.
 - b. Undertake every reasonable method to contain the oil or hazardous material.
- In the case of a medical emergency or public safety hazard, notify local emergency responders (fire department, ambulance, etc.) using 911 where available.
- If the amount of oil or hazardous material exceeds the reportable quantity in any 24-hour period, report the spill or release to the **Oregon Emergency Response System (1-800-452-0311 in-state, and (503) 378-4124 out-of-state)**.

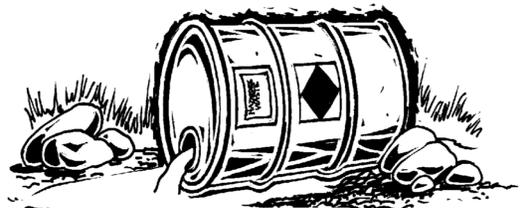
If the quantity of oil or hazardous material exceeds the quantity referenced in "d" below, report the spill or release to the **National Response Center, 1-800-424-8802**.

Remember: All hazardous wastes are hazardous substances, but all hazardous substances are NOT hazardous waste.

Reportable Quantity

Reportable quantity as defined in OAR 340-142-0050:

- (1) Spills and releases, or threatened spills or releases of oil or hazardous materials as defined by OAR 340-142-0005(9) in quantities equal to or greater than the following amounts must be reported
 - a. Any quantity of radioactive material or radioactive waste;
 - b. If spilled or discharged into waters of the state or in a location from which it is likely to escape into waters of the state any quantity of oil that would produce a visible film, sheen, oily slick, oily solids, or coat aquatic life, habitat or property with oil, but excluding normal discharges from properly operating marine engines;
 - c. If spilled on the surface of the land, and not likely to escape into waters of the state, any quantity of oil over one barrel (42 gallons);
 - d. An amount equal to or greater than the quantity listed in 40 CFR Part 302– Table 302.4 (List of Hazardous Substances and Reportable Quantities) and amendments adopted prior to July 1, 2002;
 - e. Ten pounds or more of a hazardous material not otherwise listed as having a different reportable quantity by the Department or the United States Environmental Protection Agency on the list of hazardous substances in 40 CFR 302.4;
 - f. Any quantity of chemical agent (such as nerve agents GB or VX, blister agent HD, etc);
 - g. Two hundred pounds (25 gallons) of pesticide residue;
 - h. Any quantity of a material regulated as a Chemical Agent under ORS 465.550;
 - i. Any quantity of a material used as a weapon of mass destruction, or biological weapon;
 - j. One pound (1 cup) or more of dry cleaning solvent, including perchloroethylene, spilled or released outside the designed containment by a dry cleaning facility regulated under ORS 465.505(4).



NOTE: When in doubt about reporting the spill or release — always report the incident to the Oregon Emergency Response System (OERS).

NOTE: A hazardous waste determination will have to be conducted on any cleanup debris, including contaminated soil, water, or groundwater. If the generator determines that the cleanup debris is hazardous waste, it must be handled accordingly. **Hazardous waste cleanup debris may be managed in tanks and containers without a facility permit following requirements of 40 CFR 262.34**

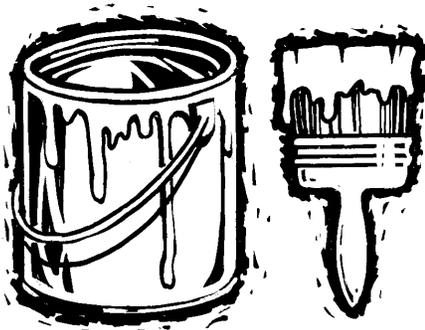
Cleanup

Anyone liable for the spill or release or threatened spill or release shall **IMMEDIATELY CLEAN UP THE SPILL OR RELEASE**. Spills or releases must be cleaned up completely as possible.

The Department’s Environmental Cleanup Program and/or the appropriate DEQ region office should be contacted to assure that cleanup meets state requirements. The Environmental Cleanup Program can be reached at (503) 229-5913.

Cleanup Report

The Department may require the responsible party to submit a written report to the department describing all aspects of the incident and steps taken to prevent a recurrence.



Erosion & Sediment Control Plan Site Log Book

Site Log Book

1200C Permit # _____

Erosion Inspection Reports
ESCP Modifications
Spill Reports