

## Permit Appendix B.2

### IDS028177 - MS4 Permit Annual Report Form



This Annual Report is due no later than April 4 of each year, beginning in Calendar Year 2022, and reflects the relevant reporting period, beginning in 2021. See Permit Part 6.4.2

Annual Reports and any attachments must be sent to EPA and IDEQ by U.S. Postal Mail to the following addresses:

U.S. EPA, Region 10  
Enforcement and Compliance Assurance Division  
Attn: Surface Water Enforcement Section  
1200 6th Avenue, Suite 155 - Mail Code 20-C04  
Seattle, Washington 98101-3188

Regional Administrator  
Idaho Department of Environmental Quality  
Attn: Water Quality Program  
Boise Regional Office  
1445 N. Orchard St.  
Boise, ID 83706

Complete Sections 1 through IV. Do not leave any questions blank.

**MS4 Permittee Name/Organization:**

ITD D3

**NPDES Permit Number:**

IDS028177

Indicate Annual Report Number & Reporting Period:

- ☐ Year 1 Reporting Period: Feb. 1, 2021 – Jan. 31, 2022 – Annual Report Due Date: April 4, 2022
- ☒ Year 2 Reporting Period: Feb. 1, 2022 – Jan. 31, 2023 – Annual Report Due Date: April 4, 2023
- ☐ Year 3 Reporting Period: Feb. 1, 2023 – Jan. 31, 2024 – Annual Report Due Date: April 4, 2024
- ☐ Year 4 Reporting Period: Feb. 1, 2024 – Jan. 31, 2025 – Annual Report Due Date: April 4, 2025
- ☐ Year 5 Reporting Period: Feb. 1, 2025 – Jan. 31, 2026 – Annual Report Due Date: Jan 30, 2026
- ☐ Other

**Certification:** "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

**Signature:**

J. Caleb Lakey

Digitally signed by J. Caleb Lakey  
DN: c=US, e="caleb.lakey@id.idaho.gov", o=Idaho Transportation  
Department, ou=District 3, cn=J. Caleb Lakey  
Location: District 3, ITD  
Reason: I am approving this document  
Contact Info: District Administrator  
Date: 2023.04.03 16:28:32-0600

**Printed Name:**

Caleb Lakey

**Title:**

District Administrator

**Date:**

**Section I. General Information****MS4 Facility Site Name:** ITD D3**MS4 Facility Organization Formal Name:** Idaho Transportation Department District 3**MS4 Facility Contact Name:** Greg Vitley**Title:** Environmental Planner Sr.**MS4 Contact Telephone:** 208-334-8952**MS4 Contact Email Address:** Greg.Vitley@itd.idaho.gov**MS4 Facility Contact Type (all that apply):** ☐ Owner ☐ Operator ☒ Main Contact**MS4 Facility Site Address:** 8150 Chinden Blvd.**MS4 Facility Site City, State, Zip Code:** Boise, Idaho 83714**MS4 Facility Site Mailing Address: if different from above****Is the MS4 Facility Site Located On Tribal Land?** ☐ Yes ☒ No**MS4 Facility Jurisdiction Type (check all that apply):**

- ☐ Federal  
☐ State  
☐ College or University  
☒ State Highway Department  
☐ Municipal:

- ☐ County  
☐ City or Town  
☐ Highway District  
☐ Tribal  
☐ Other

**List All Receiving Water(s) For the MS4 Discharges:**

Boise River  
Indian Creek  
Fivemile Creek

**Section II. Permittee Responsibility:**

Please answer all questions. If the answer is "No," or "Not Applicable" and no other direction is provided, use the Comments field at the end of this section to explain the reason and the expected date(s) that the requirement will be met, and/or to explain why the requirement does not apply.

1. **This Permittee organization shares implementation responsibility for Permit compliance with one or more Permittees.**

☐ Yes ☒ No ☐ Not Applicable

*Is the agreement between the Permittees described/cited in the Stormwater Management Program (SWMP) Document?*

☐ Yes ☐ No ☒ Not Applicable

2. **This Permittee organization shares implementation responsibility for Permit compliance with one or more outside (non-Permittee) entities.**

*Is the agreement with these other entity(ies) described/cited in the SWMP Document?*

☐ Yes ☒ No ☐ Not Applicable

3. **This Permittee organization maintains relevant ordinances or other regulatory mechanisms to control pollutant discharges into and from the MS4 to meet the requirements of this GP.**

☒ Yes ☐ No ☐ Not Applicable

*(If "No," use the Comment field to specify on overall progress to adopt adequate ordinances or utilizing available regulatory mechanisms.)*

4. **This Permittee organization's SWMP Document is posted on a publicly accessible website.**

☒ Yes

Identify the URL for the webpage where the SWMP Document can be accessed:

http://

☐ No

☐ Not Applicable

5. **(Year 3 Annual Report only): This Permittee organization's SWMP Document been updated to describe the implementation of the selected Monitoring/Assessment and/or Pollutant Reduction activities cited in Permit Part 4.**

☒ Yes

Identify the webpage address where the SWMP Document can be accessed:

http://

☐ No

☐ Not Applicable

6. This Permittee organization regularly tracks certain activities to set priorities and assess compliance with the Permit requirements.

☒ Yes      ☐ No      ☐ Not Applicable

7. During the reporting period, responsibility for SMWP implementation has changed due to a Transfer of Ownership or Operational Authority over a geographic portion of the MS4.

This Permittee's SWMP Document has been updated to reflect these changes in responsibility for any new or transferred areas served by the MS4.

☐ Yes

*If yes, use the Comments field to provide a brief statement summarizing the change in ownership or operational authority.*

☐ No

☒ Not Applicable

**Section II Comments:**

A stormwater team meets once a month to discuss the MS4 and set priorities and compliance with the permit.

ITD has maintenance agreements with local jurisdictions to maintain the roads for the storm sewer systems inside curb and gutter sections.



### Section III. Status of SWMP Control Measures

Please answer all questions for each SWMP control measure and associated component activity. In the Comments field, cite any relevant information and/or statistics that helps illustrate the Permittee's implementation of the required action/activity.

If the answer is "No," use the Comments field to explain the reason, and outline the expected dates that the requirement will be met.

If the requirement does not apply to the Permittee's organization, mark "NA" and explain why it does not apply in the Comments field.

#### Public Education, Outreach and Involvement Program (Permit Part 3.1)

8. **This Permittee organization conducts an education, outreach, and public involvement program based on stormwater issues of significance in the Permittee's jurisdiction.**
  - ☒ Yes, this organization conducts the education, outreach, and involvement activities required by the Permit
  - ☐ Yes, this organization works through contract with other entities to conduct the education, outreach, and involvement activities required by the Permit
  - ☐ No
  - ☐ Not Applicable
9. **Target Audience: During the reporting period, this Permittee organization focused its education, outreach, and public involvement messages to the following audience(s):**
  - ☒ **General Public** (including homeowners, homeowner's associations, landscapers, and property managers)
  - ☐ **Business/Industrial/Commercial/Institutions** (including home based and mobile businesses)
  - ☒ **Construction/Development** (e.g., Engineers, Contractors, Developers, Landscape Architects, Site Design Professionals)
  - ☐ **Elected Officials, Land Use Policy and Planning Staff**
  - ☐ Other (describe in Comments section below)
10. **Topics: During the reporting period, this Permittee organization focused its education, outreach, and public involvement messages on the following topics (select all that apply):**
  - ☒ General impacts of stormwater flows into surface water, and appropriate actions to prevent adverse impacts;
  - ☐ Impacts from impervious surfaces, techniques to avoid adverse impacts;
  - ☐ Yard care techniques protective of water quality, such as composting;
  - ☐ Proper use, application & storage of pesticides, herbicides, and fertilizers;

- ☐ Litter & trash control and recycling programs;
- ☐ BMPs for power washing, carpet cleaning, auto repair & maintenance;
- ☐ Low Impact Development/green infrastructure techniques, including site design, pervious paving, retention of mature trees/vegetation, landscaping and vegetative buffers;
- ☐ Maintenance of landscape features providing water quality benefits;
- ☐ Stormwater treatment and volume control practices;
- ☒ Technical standards for stormwater site plans; including appropriate selection, installation, and use of required construction site control measures
- ☒ Source control BMPs and environmental stewardship;
- ☐ Impacts of illicit discharges and how to report them;
- ☐ Actions and opportunities for pet waste control/disposal,
- ☐ Water wise landscaping, water conservation, water efficiency
- ☐ BMPs for use and storage of automotive chemicals, hazardous cleaning supplies, vehicle wash soaps and other hazardous materials;

**11. During the reporting period, this Permittee organization began and/or continued distribution of the selected messages/activities to the intended target audience.**

☒ Yes

*Please summarize the message/activity conducted during the reporting period in the Comments section below.*

☐ No

*Note: Permit Part 3.1.3 requires Permittees to conduct at least eight (8) educational messages or activities no later than **January 31, 2026**.*

☐ Not Applicable

**12. During this reporting period, this Permittee organization assessed, or participated in efforts to assess, the understanding and adoption of intended behaviors by the target audience.**

☐ Yes; *In the Comments section below, please summarize efforts to assess the selected education, outreach and public involvement activities conducted during the reporting period. If information is available, describe how this information is used to improve the education/outreach efforts.*

☒ No

☐ Not Applicable

13. During this reporting period, this Permittee organization offered (or worked with others to offer) training/education regarding construction site runoff control measures to site operators working in the Permittee's jurisdiction.

☒ Yes

☐ No

*Note: Permit Part 3.1.7.1 requires Permittees to offer outreach/training on construction site control measures at least twice during the permit term, no later than **January 31, 2026**.*

☐ Not Applicable

14. During this reporting period, this Permittee organization offered (or worked with others to offer) training/education regarding permanent stormwater controls to audiences working in the Permittee's jurisdiction.

☐ Yes

☒ No

*Note: Permit Part 3.1.7.2 requires Permittees to offer outreach/training on permanent stormwater controls at least twice during the permit term, no later than **January 31, 2026**.*

☐ Not Applicable

15. This Permittee organization maintains and promotes a publicly-accessible website that provides current SWMP-related information cited in Permit Part 3.1.8. This website was recently updated prior to submitting this Report.

☒ Yes

*URL for the Permittee's webpage:*

<https://itd.idaho.gov/env/?target=stormwater>

☐ No

☐ Not Applicable

**Comments on Public Education, Outreach, and Involvement Program:**

*Use this Comments field to explain or discuss unique implementation schedules, summarize nature of the education, outreach, and public involvement activities conducted during the reporting period*

This reporting period ITD did not determine that the public information on stormwater we worked on changed any public behaviors. Expected compliance schedule: 2024

ITD offered training/education during the permit year on permanent stormwater controls through their website. ITD needs to develop or get an outside agency for training. Expected compliance schedule: 2024

**Illicit Discharge Detection and Elimination Program (Permit Part 3.2)**

16. To the extent allowable pursuant to authority granted under Idaho law, this Permittee organization conducts and enforces a program to detect and eliminate illicit discharges into the MS4.

☐ Yes

☒ No

*Note: Permit Part 3.2 requires Permittees to revise and update their existing programs as necessary to comply with Permit Parts 3.2.2 through 3.2.9 no later than **August 4, 2025**.*

☐ Not Applicable

17. This Permittee organization maintains a current MS4 Map and Outfall Inventory as described in Permit Part 3.2.2.

☒ Yes

☐ No

*Note: Permit Part 3.2 requires Permittees to update their Map(s) and Inventory no later than **August 4, 2025**.*

☐ Not Applicable

18. To the extent allowable pursuant to authority granted under Idaho law, this Permittee organization prohibits non-storm water discharges into the MS4 (except those identified in Permit Part 2.4) through an ordinance or other regulatory mechanism.

☒ Yes – if yes, please provide citation/web address to the ordinance/regulatory mechanism:

<https://adminrules.idaho.gov/rules/current/39/390342.pdf>

☐ No

*Note: Permit Part 3.2 requires Permittees to revise and update their existing programs as necessary no later than **August 4, 2025**.*

☐ Not Applicable

19. This Permittee organization maintains a dedicated telephone number, email address, and/or other means for the public to report illicit discharges,

☒ Yes – if yes, please provide phone number/web address:

District 3: Greg Vitley 334-8952, greg.vitley@itd.idaho.gov

☐ No

*Note: Permit Part 3.2 requires Permittees to revise and update their existing programs as necessary no later than **August 4, 2025**.*

☐ Not Applicable

20. This Permittee organization responds and investigates illicit discharge complaints or reports within two working days.

☒ Yes

☐ No

*Note: Permit Part 3.2 requires Permittees to revise and update their existing programs as necessary no later than **August 4, 2025**.*

☐ Not Applicable

21. Number of Public Complaints/Reports Received During this Reporting Period:

0

22. Number of Illicit Discharge Complaints/Reports Investigated through field visits, sampling or other follow-up action

0

23. Number of Illicit Discharge Complaints/Reports Resolved

0

24. This Permittee organization conducts a dry weather analytical and field screening monitoring program to identify non-stormwater flows from MS4 outfalls.

☐ Yes

☒ No

☐ Not Applicable

25. During the reporting period, this Permittee organization used its written protocols to prioritize and identify MS4 outfalls for dry weather discharge investigation.

☐ Yes

☒ No

☐ Not Applicable

26. Total Number of MS4 Outfalls in the Permittee's jurisdiction of the Permit Area:

5

27. During the reporting period, this Permittee organization completed visual dry weather screening on at least 50 MS4 outfalls.

☐ Yes

☒ No – Total # of outfalls screened in this jurisdiction was less than 50

☐ Not Applicable

28. Of the 50 outfalls screened during the reporting period:

How many outfalls were discharging during dry weather?

1

How many of these identified dry weather discharges were sampled or otherwise investigated to determine the discharge source?

1

How many of the identified dry weather discharges resulted in the Permittee action to address and eliminate the discharge source?

0

29. During this reporting period, how many of the Permittee's MS4 outfalls have been identified as having dry weather flows caused by irrigation return flow or ground water seepage?

Number of outfalls identified this reporting period

Total number of MS4 outfalls identified to date, as having dry weather flows from irrigation or groundwater seepage

*Note: Permit Part 3.2.6 requires Permittees to provide a complete list of MS4 outfalls locations identified as having dry weather flows caused by irrigation return flow or ground water seepage as part of the Permit Renewal Application no later than **August 4, 2025**.*

30. This Permittee organization maintains written spill response procedures and coordinates appropriate spill prevention, containment and response activities with other organizations in the Permit Area to ensure maximum water quality protection at all times.

☒ Yes

☐ No

☐ Not Applicable

31. This Permittee organization coordinates with appropriate local entities to educate employees and the public of the proper management and disposal or recycling of used oil, vehicle fluids, toxic materials, and other household hazardous wastes.

☒ Yes

☐ No

☐ Not Applicable

32. This Permittee organization's staff responsible for investigating, identifying and eliminating illicit discharges, spills, and illicit connections into the MS4 are trained to conduct such activities

☒ Yes

☐ No

☐ Not Applicable

**Comments on Illicit Discharge Detection and Elimination Program:**

*Use this Comments field to explain any unique implementation schedules, highlight investigation results or follow-up actions, discuss subsequent enforcement actions, etc. that were conducted during the relevant reporting period.*

ITD is working on establishing monitoring locations and developing a monitoring/assessment with QAP. Intended compliance date is August 4, 2025. A complaint response program together with dry weather monitoring are not fully developed. ITD provides a contact for illicit discharge reporting which is followed up on by the appropriate staff. Emergencies are routed to the appropriate agency through state comm. Dry weather screening was done at one outfall of which we are trying to determine if the dry weather flows are from ground water seepage or irrigation return water.

We noted 16 outfalls in the permit based on ITD mapping. The locations of the 16 outfalls are shown in Appendix 6.3 of the Fact Sheet. Based on map updates, ITD notes outfalls are either not there, not in the permit area, shared, or ITD's jurisdiction. Table 1 in Appendix A indicates these changes. The black font shows what is in the permit. The colored font indicates change. According to our verification there are 8 shared outfalls and 5 outfalls that are ITD's. ITD's 5 outfalls discharge into the Boise River, Indian Creek, and Five Mile Creek.



**Construction Site Runoff Control Program (Permit Part 3.3)**

33. This Permittee organization uses an ordinance or other regulatory mechanism to require erosion, sediment, and waste material management controls at construction project site activity that results in land disturbance of one (1) or more acres and discharges to the MS4.

☒ Yes

☐ No

*Note: Permit Part 3.3 requires Permittees to update their construction site runoff control requirements no later than **August 4, 2025**.*

☐ Not Applicable

34. This Permittee organization requires construction site operators to submit construction site plans for projects disturbing one (1) or more acres for Permittee review.

☒ Yes

☐ No

*Note: Permit Part 3.3 requires Permittees to update their construction site runoff control requirements no later than **August 4, 2025**.*

☐ Not Applicable

35. This Permittee organization inspects construction sites that disturb one (1) or more acres to ensure compliance with applicable requirements for erosion, sediment and waste material management controls.

☒ Yes

☐ No

*Note: Permit Part 3.3 requires Permittees to update their construction site runoff control requirements no later than **August 4, 2025**.*

☐ Not Applicable

36. This Permittee organization inspects construction sites using an inspection prioritization system.

☒ Yes

☐ No

*Note: Permit Part 3.3 requires Permittees to update their construction site runoff control requirements no later than **August 4, 2025**.*

☐ Not Applicable

37. This Permittee organization implements a written escalating enforcement response policy or plan (ERP) for construction site runoff control.

☒ Yes

☐ No

*Note: Permit Part 3.3 requires Permittees to update their construction site runoff control requirements no later than **August 4, 2025**.*

☐ Not Applicable

38. This Permittee organization ensures that all persons responsible for preconstruction site plan review, site inspections, and enforcement of construction site runoff control requirements are appropriately trained to conduct such activities – specifically, this organization provides orientation and training for new staff working on construction runoff control issues within the first six (6) months of employment.

☒ Yes

☐ No

*Note: Permit Part 3.3 requires Permittees to update their construction site runoff control requirements no later than **August 4, 2025**.*

☐ Not Applicable

**Comments on Construction Site Runoff Control:**

*Use this Comments field to explain unique implementation schedules, summarize the number of site inspections, follow-up actions, and/or any subsequent enforcement actions, etc that were conducted during the relevant reporting period.*

ITD reviewed 3 SWPPP's and drawings for projects in the permit area and conducted 83 field inspections this year. No escalations were needed.

**Post Construction Stormwater Management in New Development & Redevelopment**  
**(Permit Part 3.4)**

39. Through ordinance or other regulatory mechanism, this Permittee organization requires the installation and long-term maintenance of permanent stormwater controls at new development and redevelopment project sites that result from land disturbance greater than or equal to 1 acre and that discharges to the MS4.

The required stormwater controls must be sufficient to retain onsite the runoff volume produced from a 24-hour 95<sup>th</sup> percentile storm event, and/or require runoff treatment sufficient to attain an equal or greater level of water quality benefit as this onsite retention standard.

☒ Yes

Please cite to the ordinance containing the permanent stormwater control requirements:

☐ No

<https://apps.itd.idaho.gov/Apps/manuals/RoadwayDesign/Roadwaydesignprintable.htm>

Note: Permit Part 3.4 requires Permittees to update their permanent stormwater control requirements no later than **August 4, 2025**.

☐ Not Applicable

40. This Permittee organization requires permanent storm water controls through written specifications.

☒ Yes

Please cite to the document containing the permanent stormwater control requirements:

☐ No

<https://itd.idaho.gov/business/?target=construction-resources#standard-specifications-for-highway-construction>

Note: Permit Part 3.4 requires Permittees to update their permanent stormwater control requirements no later than **August 4, 2025**.

☐ Not Applicable

41. This Permittee organization requires preconstruction site plan review and approval for permanent storm water controls at new development and redevelopment sites that result in land disturbance of one or more acres and discharge to the MS4.

☒ Yes

☐ No

Note: Permit Part 3.4 requires Permittees to update their permanent stormwater control requirements no later than **August 4, 2025**.

☐ Not Applicable

42. This Permittee organization has identified high priority locations in the jurisdiction where the Permittee regularly inspects the installation, and long-term operation, of permanent stormwater controls.

☐ Yes

☒ No

*Note: Permit Part 3.4 requires Permittees to update their permanent stormwater control requirements no later than **August 4, 2025**.*

☐ Not Applicable

43. This Permittee organization has an enforcement strategy to ensure and maintain the functional integrity of permanent stormwater controls within this jurisdiction.

☒ Yes

☐ No

*Note: Permit Part 3.4 requires Permittees to update their permanent stormwater control requirements no later than **August 4, 2025**.*

☐ Not Applicable

44. This Permittee organization uses a database inventory to track and manage the operational condition of permanent stormwater controls within this jurisdiction.

☐ Yes

☒ No

*Note: Permit Part 3.4 requires Permittees to update their permanent stormwater control requirements no later than **August 4, 2025**.*

☐ Not Applicable

45. This Permittee organization requires enforceable and transferable O&M Agreements, where parties other than this Permittee organization are responsible for operation and maintenance of permanent storm water controls?

☒ Yes

☐ No - *Note: Permit Part 3.4 requires Permittees to update their permanent stormwater control requirements no later than **August 4, 2025**.*

☐ Not Applicable

46. This Permittee organization ensures that all persons responsible for reviewing site plans for permanent stormwater controls and/or for inspecting the installation and operation of permanent controls are trained to conduct such activities

☒ Yes

☐ No - *Note: Permit Part 3.4 requires Permittees to update their permanent stormwater control requirements no later than **August 4, 2025**.*

☐ Not Applicable

**Comments on Post Construction Stormwater Management in New Development and Redevelopment**

*Use this Comments field as necessary to explain any unique implementation schedules, summarize inspections, actions, etc. that were conducted during the relevant reporting period.*

ITD has an asset inventory but has not fully incorporated MS4 facilities into it so we can track and manage the operational conditions of the facilities. The anticipated compliance schedule is August 4, 2025.

Identification of high priority permanent stormwater control structures is currently informal. Stormwater permanent controls are known in the Phase II Permit area and are inspected regularly for proper operations and maintenance. These facilities are prioritized based on known problematic areas, public safety, and potential to discharge to sensitive waters.

ITD reviewed 3 SWPPP's and drawings for projects in the permit area and conducted 83 field inspections this year. No escalations were needed.

**Pollution Prevention/Good Housekeeping for MS4 Operations (Permit Part 3.5)**

47. This Permittee organization inspects all MS4 catch basins and inlets in the jurisdiction at least once every five years and takes appropriate maintenance or cleaning action based on those inspections.

- ☒ Yes
- ☐ No – Permittee uses an alternate inspection & maintenance schedule as outlined in the SWMP Document.
- ☐ No

*Note: Permit Part 3.5 requires Permittees to update their pollution prevention and good housekeeping as needed to properly operate and maintain their MS4s no later than **August 4, 2025**.*

- ☐ Not Applicable

Total Number of catch basins and inlets inspected this reporting period

0.0

48. This Permittee organization operates and maintains Streets, Roads, Highways and/or Parking Lots in its jurisdiction in a manner that protects water quality and reduces the discharge of pollutants through the MS4.

- ☒ Yes
- ☐ No

*Note: Permit Part 3.5 requires Permittees to update their requirements pollution prevention/good housekeeping for MS4 Operations no later than **August 4, 2025**.*

- ☐ Not Applicable

49. This Permittee organization operates all street/road maintenance material storage locations in a manner that prevents pollutants in stormwater runoff from discharging to the MS4 or into any receiving waterbody. A description of each Material Storage Location is included in the SWMP Document, as required by Permit Part 3.5.4

- ☐ Yes
- ☒ No

*Note: Permit Part 3.5 requires Permittees to update their requirements pollution prevention/good housekeeping for MS4 Operations no later than **August 4, 2025**.*

- ☐ Not Applicable



50. This Permittee organization sweeps all areas of the jurisdiction that discharge to the MS4 at least once annually. A description of the street sweeping program, as required by Permit Part 3.5.5, is included in the SWMP Document.

☒ Yes

☐ No

*Note: Permit Part 3.5 requires Permittees to update their requirements pollution prevention/good housekeeping for MS4 Operations no later than **August 4, 2025**.*

☐ Not Applicable

51. This Permittee organization has reviewed its operation and maintenance activities for the types of activities listed below and confirms that all such activities are conducted in a manner that protects water quality and reduces the discharge of pollutants through the MS4. Municipal Activities to be addressed include: grounds/park and open space maintenance operations; fleet maintenance and vehicle washing operations; building maintenance; snow disposal site operation and maintenance; solid waste transfer activities; municipal golf course maintenance; materials storage; hazardous materials storage; used oil recycling; and spill control and prevention measures for municipal refueling facilities.

☒ Yes

☐ No

*Note: Permit Part 3.5 requires Permittees to update their requirements pollution prevention/good housekeeping for MS4 Operations no later than **August 4, 2025**.*

☐ Not Applicable

52. This Permittee organization ensures appropriate practices to reduce the discharge of pollutants to the MS4 associated with the application, storage and disposal of pesticides, herbicides and fertilizers. All employees or contractors applying pesticides, etc. are instructed to follow all label requirements, including those regarding application methods, rates, number of applications allowed, and disposal of the pesticide/herbicide/fertilizer and rinsate.

☒ Yes

☐ No

*Note: Permit Part 3.5 requires Permittees to update their requirements pollution prevention/good housekeeping for MS4 Operations no later than **August 4, 2025**.*

☐ Not Applicable

53. This Permittee organization uses site specific Storm Water Pollution Prevention Plans for all Permittee-owned material storage facilities, heavy equipment storage areas, and maintenance yards located in the Permit Area.

☐ Yes

☒ No

*Note: Permit Part 3.5 requires Permittees to update their requirements pollution prevention/good housekeeping for MS4 Operations no later than **August 4, 2025**.*

☐ Not Applicable

54. This Permittee organization ensures that all persons responsible for municipal operations and maintenance activities are trained to conduct such activities

☒ Yes

☐ No

*Note: Permit Part 3.5 requires Permittees to update their requirements pollution prevention/good housekeeping for MS4 Operations no later than **August 4, 2025**.*

☐ Not Applicable

**Comments on Pollution Prevention/Good Housekeeping for MS4 Operations**

*Use this Comments field as necessary to explain any unique implementation schedules, summarize inspections, actions, etc. that were conducted during the relevant reporting period*

ITD operates two maintenance and/or storage facilities within the Phase II permit area; however, both sites retains all stormwater and their is no discharge to Waters of the US. Therefore, a specific SWPPP for these sites is not required.

**Section IV. SPECIAL CONDITIONS FOR DISCHARGES TO IMPAIRED WATERS**

**Provide a current status report regarding the development of any required Monitoring/Assessment Plan and implementation of pollutant reduction activities as required by Permit Part 4.**

**55. Permit Part 4 - Narrative Status Report:**

A Monitoring/Assessment Plan is not developed yet. ITD's intended compliance schedule is 2024.

Two pollutant reduction activities were submitted February 1, 2023. One is the Centennial Interchange Storm Sewer and the other is the Karcher Interchange Wetlands with the City of Nampa. Table 2 in the Proposal had errors so the corrected version is attached. More detail was added to the description of 1.4 and the project names have been modified but the location and intent remains the same.

## Section V. Response To Excursions Above Idaho Water Quality Standards

56. During this or any prior reporting period, did the Permittee submit written notification to EPA and IDEQ regarding MS4 discharge that are causing or contributing to an excursion above the WQS as directed by Permit Part 5.1?
- ☐ Yes – if yes, proceed to Q.56
- ☒ No
- ☐ Not Applicable
57. During this or any prior reporting period, did the Permittee submit an Adaptive Management Report to EPA and IDEQ, as directed by Permit Part 5.2?
- ☐ Yes – if yes, proceed to Q.57
- ☒ No
- ☐ Not Applicable
58. Provide a summary of the Permittee's efforts to date that address the MS4 discharges contributing to the original water quality excursion, including the results of any monitoring, assessment, or evaluation efforts conducted during the reporting period.

ITD's mapping update will help us focus on those discharges that may be contributing to excursions of water quality standards.

Additionally, a grab sample was taken at an outfall to the Boise River for the Centennial Interchange. This location is the location for one of ITD's proposed Pollution Prevention Activities. There was dry weather discharge present so grab samples were taken. Wet weather grab samples were also taken. The results indicated no concerns compared to Table 6.2.7 Minimum Levels. Preliminary findings are that the discharge is from broken sprinklers in the interchange landscaping. We were not able to get out after the sprinklers were turned off to verify but there wasn't any discharge when we visited the site in March of 2023. The results are in Appendix C.

**59. List any attachments submitted as part of this Annual Report:**

Appendix A: Outfall Inventory Table  
Appendix B: Pollutant Reduction Proposals  
Appendix C: Centennial Interchange Outfall Testing Results  
Appendix D: Public Education Tri-fold and Field Guide

Appendix A:  
ITD Outfall Inventory Update  
Table, Phase II.



Table 1: ITD Outfall Inventory Update Table, Phase II

#	Location-old/new	Receiving Water-old/new	Jurisdiction/comments
1	43.64097115, -116.6429732	Notus Canal/Caldwell Drain	Caldwell
2	43.63970881, -116.6413116	Notus Canal/Caldwell Drain	Caldwell
3	43.6733044, -116.7033823	Indian Creek	Shared with Caldwell
4	43.67796222, -116.6983296	Boise River	ITD
5	43.61313572, -116.599284	Indian Creek/West Lateral	Not in Phase II
6	43.58318191, -116.5559944	Indian Creek	Not found
7	43.58322077, -116.555918	Indian Creek	Not found
8	43.54794869, 116.572528/ 43.548896, -116.572491	Wilson Drain	Shared with Nampa, changed the location.
9	43.56313261, -116.5728262	Elijah Drain/Aaron Drain	Not found
10	43.56321068, -116.5730701	Elijah Drain/Aaron Drain	Not found
11	43.58332626, -116.5560663	Indian Creek	Not found
12	43.58805136, -116.5777896	Phyllis Canal	Shared with Nampa
13	43.58784187, -116.5774506	Phyllis Canal	Shared with Nampa
14	43.58863675, -116.5786499	Phyllis Canal	Shared with Nampa
15	43.58629437, -116.5518097	Mason Creek	Shared with Nampa
16	43.54702666, -116.5723573	Wilson Drain	Not Found
17	43.547302, -116.572416	Wilson Drain	Shared with Nampa
18	43.547338, -116.572338	Wilson Drain	Shared with Nampa
19	43.583837, -116.557678	Indian Creek	ITD
20	43.680724, -116.689554	Boise River	ITD
21	43.680724, -116.689194	Boise River	Shared with Nampa
22	43.594108, -116.357101	Fivemile Creek	ITD
23	43.594017, -116.356782	Fivemile Creek	ITD
24	43.593386, -116.355731	Fivemile Creek	Unknown

# Appendix B:

## Pollutant Reduction Proposals

# **POLLUTANT REDUCTION ACTIVITIES**

**Centennial Interchange Storm Drain System**

**And**

**Indian Creek Wetland**

**Prepared by**

**Idaho Transportation Department District 3, Boise, Idaho**

**February 1, 2023**

# 1 Introduction to Pollutant Activity #1

## 1.1 Purpose

The following Pollutant Reduction Activity (PRA) outlines the Idaho Transportation Department District 3 (ITD) approach for implementing the activities required by Part 4 Special Conditions for Discharges to Impaired Waters required by the National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater Phase II Permit (Permit) #IDS028177. The PRA is designed to reduce impairment pollutants from the municipal separate storm sewer system (MS4) discharging into the Boise River.

## 1.2 Pollutant Reduction Activity Objectives

This PRA is designed to assist in meeting the following Permit objectives (Permit Part 4.3):

- Reduce bacteria, nutrients and sediment discharging from the MS4 to the Boise River.
- Quantify the estimated pollutant reduction accomplished resulting from construction of the Centennial Interchange Stormwater Pond.

## 1.3 Program Organization (Person(s) responsible)

The Environmental and Scoping Section will be responsible for this project.

## 1.4 Existing Conditions

The project site is in Caldwell, Idaho, Exit 27, MP 26.7 (See Vicinity Map Figure 1). Land will need to be acquired to make room for the detention pond. The existing storm sewer system accommodates mixed drainage from both residential and highway runoff. The proposed storm sewer will separate the highway stormwater from the residential and interstate stormwater.

Control structures within the watershed include storm drain manholes, and storm drain inlets. Additional site characteristics are listed below in Table 1.

Centennial Interchange Storm Drain System Site Characteristics	
Project name	Centennial Interchange Stormwater
Project site address	I-84 Milepost 26.7
Watershed size and land use type	4100 Square Miles or rangeland, agricultural, forest, and urban
Segment ID assessment unit	Boise River- 6 <sup>th</sup> order (ID17050114SW005-06b)
Receiving water	Snake River
Boise River Pollutants	Phosphorous, Fecal Coliform, Sedimentation Temperature

*Table 1. Centennial Interchange Storm Drain Site Characteristics*

## 1.5 Project Description

ITD hired a consultant to design the storm sewer system to separate the interstate and residential stormwater. The stormwater will be separated and go to a detention pond with a cell for the interstate (state) stormwater and a cell for the residential (city) stormwater. Coordination on the design will include the City of Caldwell. The stormwater in the pond will stay there until a storm event exceeds a 100-year storm event. Infiltration is difficult due to the existing high-water table (See Figures 2-4 for concept).

Stormwater pollutant concentration data will be collected at a manhole (See Figure 5) nearest to the outfall during dry and wet weather prior to construction. The characterization of the stormwater quality will be compared to the post construction discharge.



## 1.6 Interim Milestone Goals

The milestone goals for this PRA are provided below but may vary due to land acquisition. Implementation updates will be provided in ITD's Stormwater Management Program Document.

### 1.7 FY 2022

In FY 2023, ITD will take grab samples from the manhole shown in Figure 2 which flows from there directly to the Boise River. Access to the outfall is precarious so samples from the nearest manhole was determined to be the best option. Wet weather and dry weather sampling began in 2022. One wet weather sample was taken, and one dry weather sample was taken. Samples were sent to Analytical Laboratories Inc. in Boise. The results will be compared to the post project sampling results to determine the level of pollutant reductions.

### 1.8 FY 2023

The stormwater facility will be designed in FY 2023. Construction of the project is planned for FY 2024.

### 1.9 FY 2024

Construction of the stormwater facility is expected to be completed in FY 2024. Once the stormwater facility is completed, pollutant reductions can be estimated.

## 1.10 Desired Outcome for PRS #2

Measurable reduction of pollutants discharging from the storm drain system into the Boise River post construction of the stormwater facility.

## 1.11 Reporting for PRS #1

As required in Permit Part 4.1.3., ITD will document progress on conducting the PRA in each Annual Report. A final report summarizing the Centennial Interchange Stormwater Mitigation Project activities and pollutant reductions accomplished to date will be submitted no later than August 4, 2025 with the Permit Renewal Application (Permit Part 8.2)

## 2.0 Introduction to Pollutant Reduction Activity #2

### 2.1 Purpose

The following Pollutant Reduction Activity (PRA) outlines ITD's approach for implementing the activities required by Part 4 Special Conditions for Discharges to Impaired Waters required by the National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater Phase II Permit (Permit) #IDS028177. The PRA is designed to reduce impairment pollutants from the municipal separate storm sewer system (MS4) discharging into the Boise River.

### 2.2 Pollutant Reduction Activity Objectives

This PRA is designed to assist in meeting the following Permit objectives (Permit Part 4.3):

- Reduce bacteria, nutrients and sediment discharging from the MS4 to the Boise River.
- Quantify the estimated pollutant reduction accomplished resulting from construction of the Indian Creek Wetland.

### 2.3 Program Organization (Person(s) responsible)

The Environmental and Scoping Section will be responsible for this project.

### 2.4 Existing Conditions

The project site is in Nampa, Idaho, Exit 33, MP 33.5 (See Vicinity Map Figure 6). The land is owned by the state and is adjacent to Indian Creek. It consists of two ponds, one on the west and one on the east side of Indian Creek. The ponds intercept the ground water levels and maintain hydrophytic vegetation. Pond 1 has a perimeter wetland and pond 2 has islands with hydrophytic vegetation around them as well as the outside perimeter of the pond. Hydrophytic vegetation is dependent on the ground water. In low water years it has been difficult for the wetland vegetation to survive which also encourages undesired vegetative growth. Additional site characteristics are listed below in Table 2.

Indian Creek Wetland Site Characteristics	
Project name	Indian Creek Wetland Project
Project site address	I-84 Milepost 33.5
Watershed size and land use type	295 Square Miles of rangeland, agricultural and urban.
Segment ID assessment unit	Indian Creek- 4th order (ID17050114SW002-04)
Receiving water	Boise River
Indian Creek Pollutants	Nutrients, Phosphorous, Temperature, Sedimentation, E. Coli

Table 2. Indian Creek Wetland Site Characteristics

## 2.5 Project Description

ITD would like to partner with the City of Nampa to further develop the ponds into a pollutant filtering system for sediment and phosphorus. The location for the ponds is shown below in Figures 7-8.

Wetlands would be enhanced, and Indian Creek would be redirected through the ponds to settle out turbidity and filter out pollutants with vegetation and/or mats.

## 2.6 Interim Milestone Goals

The milestone goals for this PRA are provided below. The schedule presented below, however, may vary. Implementation updates will be provided in the SWPP updates.

### 2.7 FY 2023

In FY 2023, ITD will coordinate with the City of Nampa to determine ownership and management. Design begins.

### 2.8 FY 2024

Funding the facility in phases will be ongoing but constructed in FY 2025.

### 2.9 FY 2025

Construction of the Indian Creek Wetlands is expected to be started in FY 2025 as funding permits. Funding will be through grants. The construction will be in phases. Once the stormwater facility is completed, pollutant reductions will be monitored. A monitoring and assessment plan will be developed by the City of Nampa.

## 2.10 Desired Outcome for PRS #2

Measurable reduction of pollutants discharging from Indian Creek to the Boise River will be monitored and compared between the pre and post construction pollutant loads in Indian Creek.

## 2.11 Reporting for PRS #2

As required in Permit Part 4.1.3., ITD will document progress on conducting the PRA in each Annual Report. A final report summarizing the Indian Creek Wetlands and pollutant reductions accomplished to date will be submitted no later than August 4, 2025 with the Permit Renewal Application (Permit Part 8.2)

# Appendix C: Centennial Interchange Outfall Testing Results



# Analytical Laboratories, Inc.

1804 N. 33rd Street  
Boise, Idaho 83703  
Phone (208) 342-5515

Date Report Printed: 9/21/2022 7:26:31 AM

<http://www.analyticallaboratories.com>

These test results relate only to the items tested.

The MCL does NOT indicate drinking water compliance

## Laboratory Analysis Report

Sample Number: 2244125

**Attn:** DAVID DANSEREAU  
IDAHO TRANSPORTATION DIST 3  
8150 CHINDEN BLVD  
PO BOX 8028  
BOISE, ID 83707

**Collected By:** GREG U.

**Submitted By:** GREG U.

**Source of Sample:**

CENTENNIAL 1A-F STORM WATER

**Time of Collection:** 11:15

**Date of Collection:** 9/7/2022

**Date Received:** 9/7/2022

**Report Date:** 9/21/2022

Field pH:

Lab pH:

**PWS#:**

Field Temp:

Temp Recd in Lab:

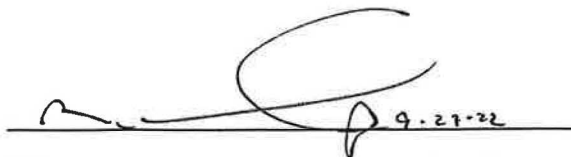
**PWS Name:**

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Cadmium Low	0.005	<0.0005	mg/L	0.0005	EPA 200.8	9/12/2022	JH
Copper, Cu	1.30	<0.01	mg/L	0.01	EPA 200.7	9/8/2022	JMS
Lead Low	0.015	<0.005	mg/L	0.005	EPA 200.8	9/12/2022	JH
Metals Digestion		*			EPA 200.2	9/7/2022	HAL
Zinc, Zn	UR	0.02	mg/L	0.01	EPA 200.7	9/8/2022	JMS
Ammonia Direct (as N)	UR	<0.04	mg/L	0.04	EPA 350.1	9/9/2022	NC
Nitrate + Nitrite (as N)	10	7.03	mg/L	0.02	EPA 353.2	9/15/2022	LW
Ortho Phosphate (as P)		0.16	mg/L	0.05	EPA 365.1	9/7/2022	LW
Total Phosphate (as P)		0.21	mg/L	0.05	EPA 365.4	9/8/2022	DS
Hardness	UR	154	mg/L	5.0	SM 2340-C	9/17/2022	LW
Oil and Grease		< 5	mg/L	5	EPA 1664-B	9/9/2022	JD
Dissolved Oxygen		9.0	mg/L	0.5	SM 4500-O C	9/7/2022	EH
Total Suspended Solids		9	mg/L	2	USGS I-3765	9/11/2022	BDM

Email: david.dansereau/greg.clark/john.hall/brian.morrissy/@itd.idaho.gov

CC: DEQ;

MCL = Maximum Contamination Level  
MDL = Method/Minimum Detection Limit  
UR = Unregulated

  
9.21.22

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Brian M. McGovern



CLIENT CODE= ITDD013

## CHAIN OF CUSTODY RECORD

CLIENT INFORMATION:				PROJECT INFORMATION:		ANALYTICAL LABS, INC.													
Project Manager: <u>GREG VITLEY</u>				Project Name: <u>Centennial</u>		1804 N. 33rd Street • Boise, ID 83703 (208) 342-5515 • Fax: (208) 342-5591 • 1-800-574-5773 Website: www.analyticallaboratories.com E-mail: ali@analyticallaboratories.com													
Company: <u>ITD DISTRICT 3</u>				PWS Number:		TESTS REQUESTED													
Address: <u>5150 CHIMPEL BLVD.</u>				Purchase Order Number:															
Boise, ID 83714				Required Due Date:															
Phone: <u>334 8952</u>		Fax:		E-mail Address: <u>greg.vitley@itd.idaho.gov</u>		<u>NH4</u> <u>Mg</u> <u>TPH</u> <u>Cl-F</u> <u>Cu</u> <u>Pb</u> <u>F</u> <u>Zn</u> <u>Hard</u> <u>dig</u> <u>DO</u> <u>OLG</u> <u>O-PH</u> <u>SS</u>													
Sampled by: (Please print) <u>GREG VITLEY</u>		Transported by: (Please print) <u>GREG VITLEY</u>																	
Lab ID	Date Sampled	Time Sampled	Sample Description (Source)	Sample Matrix															Remarks:
1A	9/7	11:02	Storm Water DEC 44125																
1B	9/7	11:05	Storm Water 44126																
1C	9/7	11:08	Storm Water 44127																
1D	9/7	11:10	" " 44128																
1E	9/7	11:12	" " 44129																
1F	9/7	11:15	Storm Water 44130																
Invoice to: (If different than above address)				Special Instructions:															
ALLOCATIONS OF RISK: Analytical Laboratories, Inc. will perform preparation and testing services, obtain findings and prepare reports in accordance with Good Laboratory Practices (GLP). If, for any reason, Analytical Laboratories, Inc. errors in the conduct of a test or procedure, their liability shall be limited to the cost of the test or procedure completed in error. Under no circumstances will Analytical Laboratories, Inc. be liable for any other cost associated with obtaining a sample or use of data.																			
Note: Samples are discarded 21 days after results are reported. Hazardous samples will be returned to client or disposed of at client expense.																			
Relinquished By: (Signature) <u>[Signature]</u>				Print Name: <u>GREG VITLEY</u>				Company: <u>ITD D3</u>				Date: <u>9/7/22</u>		Time: <u>12:30</u>					
Received By: (Signature)				Print Name:				Company:				Date:		Time:					
Relinquished By: (Signature)				Print Name:				Company:				Date:		Time:					
Received By: (Signature) <u>[Signature]</u>				Print Name: <u>Kelley</u>				Company: <u>ALI</u>				Date: <u>9/7</u>		Time: <u>1230</u>					
SAMPLE RECEIPT		Total # of Containers:		Chains of Custody Seals Y / N / NA		Intact: Y / N / NA		Temperature Received:		Condition:									

REV. 2/19/12

WHITE: STAYS WITH SAMPLE(S)

YELLOW: LAB

PINK: SAMPLER





# Analytical Laboratories, Inc.

1804 N. 33rd Street  
Boise, Idaho 83703  
Phone (208) 342-5515

Date Report Printed: 11/17/2022 8:20:16 AM  
<http://www.analyticallaboratories.com>  
These test results relate only to the items tested.  
The MCL does NOT indicate drinking water compliance

## Laboratory Analysis Report

Sample Number: 2255209

**Attn:** DAVID DANSEREAU  
IDAHO TRANSPORTATION DIST 3  
8150 CHINDEN BLVD  
PO BOX 8028  
BOISE, ID 83707

**Collected By:**  
**Submitted By:**

**Source of Sample:**  
CENTENNIAL STORM SEWER

**Time of Collection:** 9:30

**Date of Collection:** 11/5/2022

**Date Received:** 11/5/2022

**Report Date:** 11/17/2022

**Field pH:** Lab pH:

**Field Temp:** Temp Recd in Lab: 12.4 °C

**PWS#:**

**PWS Name:**

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Escherichia coli		4,100	MPN/100mL		SM 9223	11/6/2022	OW
Arsenic Low	0.01	0.0073	mg/L	0.0020	EPA 200.8	11/9/2022	JH
Cadmium Low	0.005	<0.0005	mg/L	0.0005	EPA 200.8	11/9/2022	JH
Chromium Low	0.1	0.006	mg/L	0.002	EPA 200.8	11/9/2022	JH
Lead Low	0.015	<0.005	mg/L	0.005	EPA 200.8	11/9/2022	JH
Mercury, Hg	0.002	<0.0002	mg/L	0.0002	EPA 245.1	11/14/2022	JD
Metals Digestion		*			EPA 200.2	11/7/2022	HAL
Zinc, Zn	UR	0.05	mg/L	0.01	EPA 200.7	11/9/2022	JMS
Ammonia Direct (as N)	UR	0.62	mg/L	0.04	EPA 350.1	11/10/2022	JPH
Nitrate + Nitrite (as N)	10	1.46	mg/L	0.02	EPA 353.2	11/15/2022	JPH
Nitrogen, Total Kjeldahl (TKN)		2.57	mg/L	0.10	EPA 351.2	11/8/2022	DS
Ortho Phosphate (as P)		0.41	mg/L	0.05	EPA 365.1	11/5/2022	LW
Total Phosphate (as P)		0.53	mg/L	0.05	EPA 365.4	11/8/2022	DS
Chemical Oxygen Demand		55.8	mg/L	20.0	EPA 410.4	11/15/2022	JPH
Conductivity	UR	511	umhos/cm	2	EPA 120.1	11/5/2022	LW
Hardness	UR	145	mg/L	5.0	SM 2340-C	11/12/2022	LW
pH	UR	7.6	S.U.		EPA 150.1	11/5/2022	LW
Turbidity		25.9	NTU	0.5	EPA 180.1	11/5/2022	LW
Biochemical Oxygen		11	mg/L	3	SM 5210 B	11/10/2022	BDM
Dissolved Oxygen		4.0	mg/L	0.5	SM 4500-O C	11/5/2022	BDM
Total Dissolved Solids	UR	296	mg/L	25	SM 2540 C	11/8/2022	MA
Total Suspended Solids		14	mg/L	2	USGS 1-3765	11/9/2022	EH

Email: david.dansereau/greg.clark/john.hall/brian.morrissy/@itd.idaho.gov

CC: DEQ;

MCL = Maximum Contamination Level  
MDL = Method/Minimum Detection Limit  
UR = Unregulated

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Phone (208) 342-5515

Date Report Printed: 11/9/2022 5:01:48 PM  
<http://www.analyticallaboratories.com>  
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The MCL does NOT indicate drinking water compliance

## Laboratory Analysis Report

Sample Number: 2255210

Attn: DAVID DANSEREAU  
IDAHO TRANSPORTATION DIST 3  
8150 CHINDEN BLVD  
PO BOX 8028  
BOISE, ID 83707

Collected By:  
Submitted By:

Source of Sample:  
CENTENNIAL STORM SEWER (AS DISSOLVED)

Time of Collection: 9:30

Date of Collection: 11/5/2022

Date Received: 11/5/2022

Report Date: 11/9/2022

Field pH: Lab pH:  
Field Temp: Temp Rcvd in Lab: 12.4 °C

PWS#:  
PWS Name:

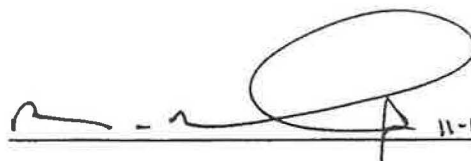
Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Cadmium Low	0.005	<0.0005	mg/L	0.0005	EPA 200.8	11/9/2022	JH
Chromium Low	0.1	0.004	mg/L	0.002	EPA 200.8	11/9/2022	JH
Copper, Cu	1.30	0.01	mg/L	0.01	EPA 200.7	11/9/2022	JMS
Lead Low	0.015	<0.005	mg/L	0.005	EPA 200.8	11/9/2022	JH
Metals Filtering		*				11/7/2022	HAL
Zinc, Zn	UR	0.02	mg/L	0.01	EPA 200.7	11/9/2022	JMS

Email: david.dansereau/greg.clark/john.hall/brian.morrissy/@itd.idaho.gov

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MDL = Method/Minimum Detection Limit  
UR = Unregulated

Page 1 of 1

  
11-15-22

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CLIENT CODE=

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CLIENT INFORMATION:				PROJECT INFORMATION:		ANALYTICAL LABS, INC.													
Project Manager: <u>GREG VITLEY</u>				Project Name: <u>Centennial</u>		1804 N. 33rd Street • Boise, ID 83703 (208) 342-5515 • Fax: (208) 342-5591 • 1-800-574-5773 Website: www.analyticallaboratories.com E-mail: ali@analyticallaboratories.com													
Company: <u>ITD D-3</u>				PWS Number:		TESTS REQUESTED <u>BOD, SS</u> <u>TPS</u> <u>E Coli</u> <u>Coliform</u> <u>NH4</u> <u>Conductivity</u> <u>OP64</u> <u>Asbestos</u> <u>Disinfectant</u>													
Address: <u>5108150 CHINDEN BLVD</u>				Purchase Order Number:															
Phone: <u>208 334 8952</u> Fax:				Required Due Date: <u>11-15-02</u>															
E-mail Address: <u>greg.vitley@itd.idaho.gov</u>																			
Sampled by: (Please print)				Transported by: (Please print)															
Lab ID	Date Sampled	Time Sampled	Sample Description (Source)	Sample Matrix	Remarks:														
1A	11/5	9:28am	Centennial Storm Sewer		✓														
1B	11/5					✓													
2	11/5						✓												
3	11/5							✓											
4	11/5								✓										
5	11/5									✓									
6	11/5										✓								
7	11/5											✓							
8	11/5		Temp Coats																
9	11/5	9:30	Centennial Storm Sewer																
Invoice to: (If different than above address)				Special Instructions:															
<p>ALLOCATIONS OF RISK: Analytical Laboratories, Inc. will perform preparation and testing services, obtain findings and prepare reports in accordance with Good Laboratory Practices (GLP). If, for any reason, Analytical Laboratories, Inc. errors in the conduct of a test or procedure, their liability shall be limited to the cost of the test or procedure completed in error. Under no circumstances will Analytical Laboratories, Inc. be liable for any other cost associated with obtaining a sample or use of data.</p> <p>Note: Samples are discarded 21 days after results are reported. Hazardous samples will be returned to client or disposed of at client expense.</p>																			
Relinquished By: (Signature) <u>[Signature]</u>				Print Name: <u>GREG VITLEY</u>				Company: <u>IDAHO TRANS DEPT D-3</u>				Date: <u>11/5/22</u>		Time: <u>10:41am</u>					
Received By: (Signature)				Print Name:				Company:				Date:		Time:					
Relinquished By: (Signature)				Print Name:				Company:				Date:		Time:					
Received By: (Signature) <u>[Signature]</u>				Print Name: <u>Crystal Jones</u>				Company: <u>ALI</u>				Date: <u>11/5</u>		Time: <u>1041</u>					
SAMPLE RECEIPT				Total # of Containers: <u>10</u>				Chains of Custody Seals <u>Y / N / NA</u>				Intact: <u>Y / N / NA</u>				Temperature Received: <u>12.4</u>		Condition: <u>good</u>	

REV. 2/19/12

WHITE: STAYS WITH SAMPLE(S)

YELLOW: LAB

PINK: SAMPLER

1.5

# Appendix D:

## Public Education Tri-fold and Field Guide



***Q: What is the purpose of a Storm Water Pollution Prevention Plan?***

***Q: Who needs to sign the Storm Water Pollution Prevention Plan for certification to discharge under the National Pollutant Discharge Elimination System Construction General Permit?***

***Q: Does a Storm Water Pollution Prevention Plan need to be readily available for viewing and for how long?***

***Q: What documents of the Storm Water Pollution Prevention Plan need to be readily available for viewing and why?***

***Q: Where does a Storm Water Pollution Prevention Plan need to be located to ensure it is readily available?***

***Q: What needs to be posted?***

***Q: How long does a Storm Water Pollution Prevention Plan and all related documents and updates need to be retained?***



IDAHO TRANSPORTATION  
DEPARTMENT DISTRICT 3

Environmental Section  
8150 W Chinden Blvd Boise ID  
83714

ADDITIONAL INFORMATION ON THE IDAHO POLLUTANT DISCHARGE  
ELIMINATION SYSTEM PROGRAM (IPDES) CONSTRUCTION GENERAL PER-  
MIT AND STORM WATER POLLUTION PREVENTION PLANS MAY BE FOUND  
AT THE

FOLLOWING INTERNET LINKS:

<https://ww2.deq.idaho.gov/water/ipdes>

[https://www.deq.idaho.gov/water-quality/  
wastewater/storm-water/](https://www.deq.idaho.gov/water-quality/wastewater/storm-water/)

[https://www2.deqidaho.gov/admin/leia/api/document/  
download/16510](https://www2.deqidaho.gov/admin/leia/api/document/download/16510)

2023 EDITION



STORM WATER POLLUTION  
PREVENTION PLAN QUESTIONS  
& ANSWERS THAT RELATE TO  
ENSURING COMPLIANCE.  
  
A REFERENCE FOR OPERATORS,  
GENERAL CONTRACTORS &  
SUBCONTRACTORS.



Provided by the Idaho Transportation Department  
District 3

# ***STORM WATER POLLUTION PREVENTION PLAN QUESTIONS & ANSWERS THAT RELATE TO ENSURING COMPLIANCE.***

***Q: What is the purpose of a Storm Water Pollution Prevention Plan?***

A: A Storm Water Pollution Prevention Plan (SWPPP) is a plan to protect the quality of the nation's surface water resources from storm water discharges associated with construction actions/activities that disturb one or more acres and have the potential to discharge to waters of the United States. The intent is to ensure that construction actions/activities do not adversely impact surface water resources such as:

- Drinking Water
- Recreational Opportunities (e.g. Swimming and Fishing)
- Habitat for Fish and Wildlife

The Idaho Pollutant Discharge Elimination System Program (IPDES) Construction General Permit (CGP) provides all Operators including owners, contractors, and subcontractors the assurance to discharge to the nation's surface waters under regulated compliance. Regulated compliance requires having an approved SWPPP that designates and implements appropriate erosion, sediment, and pollution prevention and control practices that are collectively referred to as Best Management Practices (BMPs). Referenced BMPs in the SWPPP are used to mitigate for storm water runoff, dust abatement, sediment tracking, spill prevention, and other pollutant discharge impacts associated with construction actions/activities. Successful implementation, monitoring, maintenance, and updates to the SWPPP can eliminate and minimize discharge impacts associated with construction actions/activities.

***Q: Who needs to sign the Storm Water Pollution Prevention Plan for certification to discharge under the National Pollutant Discharge Elimination System Construction General Permit?***

A: All Operators including, but not limited to; owners, contractors, and subcontractors who have operational control over the following:

- The construction plans and specifications, including the ability to make modifications or changes to those plans and specifications.
- Day-to-day activities at a project site, including those activities which are necessary to ensure compliance of the SWPPP and other permit conditions.
- A portion of a larger project.

***Q: Does a Storm Water Pollution Prevention Plan need to be readily available for viewing and for how long?***

A: YES—The CGP requires that the SWPPP be made readily available for viewing from the commencement of construction actions/activities to the date of final stabilization.

***Q: What documents of the Storm Water Pollution Prevention Plan need to be readily available for viewing and why?***

A: The entire SWPPP including all narrative and plan documents. This includes, but is not limited, to the following:

- A vicinity map showing all waters of the United States within one mile of the construction site or sites.
- The civil plan sheets indicating the topographical data, locations (i.e. stationing), types, lengths, and amounts of BMPs used.
- The erosion and sediment control standard drawings.
- The Spill and Discharge Prevention, Control, and Counter Measure Plan.
- The special contract provisions.
- Copies of the Idaho Department of Environmental Quality (IDEQ) Notice of Intent submittal form and IPDES acknowledgement of completed Notice of Intent.
- All related change orders associated with the SWPPP.
- All updates or modifications to any items listed above.

The SWPPP must be updated for public view whenever a change occurs that may cause an effect on the discharge of pollutants to surface waters or municipal storm sewer systems. Changes include, but are not limited to, the following:

- A change in design of the project.
- A change in construction method.
- A change in operation method.
- A change in maintenance procedure or other similar change.

A SWPPP must also be updated and made available to the public when inspections by authorized personnel such as site staff or other local, state, tribal, or federal officials are completed to determine that the BMPs are effective or ineffective in eliminating or minimizing pollutant discharges from the construction site. This would include all inspection entries and all related construction diary entries which document a SWPPP inspection. If an inspection reveals inadequacies related to the SWPPP, the site or sites where the erosion,

sediment, or pollution prevention BMPs have been identified as inadequate must have corrective actions through additional BMPs implemented. Corrective actions must be completed before the next storm event whenever practicable or be completed within seven calendar days. If implementation before the next storm event is impracticable, the reasoning shall be documented in the SWPPP and changes completed as soon as practicable thereafter. Any related updates to the SWPPP as a result of inspection findings must be made available for public viewing.

The SWPPP is an open ended living document. As the scope of the project evolves and construction actions/activities or affecting weather conditions change the SWPPP shall be updated to fit the needs of the project. Operators are required to make changes as well as updates to the SWPPP and implement appropriate BMPs to accomplish protection of the nation's surface water resources from storm water discharges associated with construction actions/activities.

***Q: Where does a Storm Water Pollution Prevention Plan need to be located to ensure it is readily available?***

A: At the main construction trailer or in a designated mailbox on site.

***Q: What needs to be posted?***

A: A notification about the IPDES Permit and SWPPP location must be posted conspicuously near the main entrances of the construction site where it can be found by the public and authorized inspecting authorities. This notification shall contain the following information:

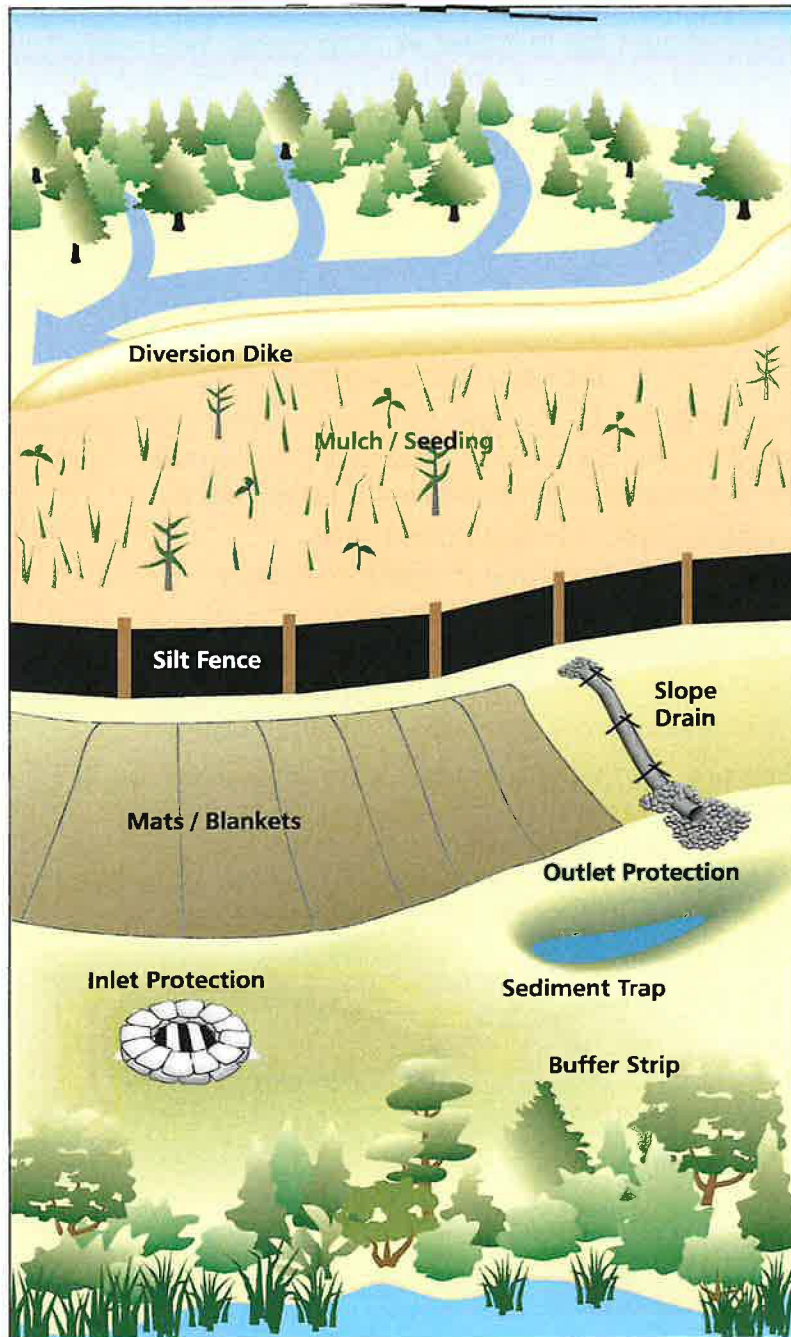
- Copies of the IPDES Notice of Intent submittal form and IPDES acknowledgement of completed Notice of Intent.
- The current location of the SWPPP and all related documents, updates, and the time periods it can be viewed by the public.
- The telephone number of the Water Pollution Control Manager or other appropriate authority to schedule times to review the SWPPP and all related and updated documents.

***Q: How long does a Storm Water Pollution Prevention Plan and all related documents and updates need to be retained?***

A: A minimum 3-years after the final Notice of Termination has been filed by the last Operator.



# Idaho Construction Site EROSION and SEDIMENT CONTROL Field Guide



## Preface

This Field Guide was prepared to provide a quick handy guide for persons involved in land disturbing activities. This includes homebuilders, general contractors, road builders, installers of best management practices, erosion and sediment control planners and designers, plan reviewers and inspectors.

The Field Guide covers the most commonly used erosion and sediment control practices. The controls in this Guide should be installed in accordance with industry standards and good engineering practices, and where available, manufacturer's specifications.

## Acknowledgements

This Field Guide is a product of a partnership coordinated by the Idaho Small Business Development Center. The partnering organizations are listed below.

- Associated General Contractors
- U.S. Environmental Protection Agency
- Idaho Association of Highway Districts
- Idaho Transportation Department
- Multiple Idaho cities and highway districts
- Local Highway Technical Assistance Council

Graphics in this document were produced by Emily Faalasli for a similar manual developed by Tetra Tech for the Kentucky Division of Water and Division of Conservation. For more information, email Barry Topping of Tetra Tech at [barry.topping@tetrattech.com](mailto:barry.topping@tetrattech.com).



# Idaho Construction Site EROSION and SEDIMENT CONTROL

## FIELD GUIDE

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## Introduction

This Field Guide provides general guidance (descriptions and illustrations) for installing and maintaining many of the erosion and sediment control practices, referred to as Best Management Practices (BMPs). Detailed design plans/drawings are the basis for meeting requirements on most sites and the plan design requirements take precedence over details in the Field Guide. Also, the Field Guide is not intended to be used for specifications in instances where a design is not available. A professional should always be consulted.

## Compliance Considerations

Construction activities (including other land-disturbing activities) that disturb 1 acre or more or smaller sites that are part of a larger common plan for development or sale are required to obtain coverage under the federal storm water permit. Local regulations may also apply.

### **Before Construction**

Operators of regulated construction sites are required to develop and implement a Storm Water Pollution Prevention Plan (SWPPP) and to obtain permit coverage from the Idaho Department of Environmental Quality (IDEQ) For the Idaho Pollutant Discharge Elimination System (IPDES).

- Develop, implement, and update a SWPPP for the site.
- Schedule installation of Best Management Practices (BMPs).
- Submit a Notice of Intent (NOI) 30 days prior to construction if this is a new project. Secondary operators on a project that already has coverage should submit a NOI seven days prior to construction.
- Install clean water diversions, sediment traps/basins and stabilize drainage channels with grass, liners, and silt check dams *before* excavation, fill, or grading work begins.
- Install silt fences and other sediment barriers downhill from bare soil areas before clearing or excavation work begins.
- Implement housekeeping BMPs (e.g., covering stockpiles) as soon as possible after the project breaks ground.
- Post sign near the main entrance of the site with a copy of the NOI, the location of the SWPPP and a contact person listed.

### ***During Construction - Inspections***

- Inspect all areas of the site disturbed by construction activity, all erosion and sediment controls and all stormwater discharge points.
- Inspect erosion and sediment controls at least once every two weeks (once a month in areas with <20 inches ppt), within 24 hours of the end of a storm event of 0.25 inches or greater, and within 24 hours of a discharge generated by snowmelt.
- Visually examine stormwater discharges for the presence of suspended sediment, turbidity, discoloration and oil sheen.

### ***During Construction - Maintenance***

- Maintain all temporary and permanent erosion control BMPs as needed to assure continued performance.
- Remove brush and other debris from culvert and channel inlets.
- Remove rock or sediment accumulating behind silt fences or other sediment filters regularly.
- Repair all structures that have become dislodged or damaged (such as silt fences, check dams, etc.) as soon as possible and prior to next storm event.
- Take corrective action by close of next full working day if a control is not functioning properly or immediately if there is a muddy or prohibited discharge from the construction site.
- Eliminate non-stormwater discharges from the construction site to storm drains and other water bodies. Non-stormwater discharges may result from a variety of sources, including dumping, leaking storage and maintenance areas, and spillage of chemicals and waste materials.

### ***During Construction - Records***

- Keep stormwater permit documentation on-site or within reasonable access to the site (i.e., General Permit, NOI, SWPPP and Site Log Book).
- Keep records of inspection observations, maintenance activities and corrective actions taken, and file with other paperwork.
- Amend the SWPPP whenever there is a change in design, construction, operation, or maintenance that has a significant effect on the potential for discharge of pollutants.
- Amend the SWPPP if it is ineffective in significantly reducing pollutants.

- Amend the SWPPP if a new contractor and/or subcontractor will implement any measure of the SWPPP.
- Sign, date and keep all amendments as attachments to the original SWPPP.
- Stabilize all portions of the site.

### **After Construction**

- Remove temporary controls such as silt fence and permanently stabilize site when the project is completed.
- Fill, grade, and seed temporary sediment traps or basins and remove silt fences, check dams, and other controls prior to filing a NOT.
- See details of the federal CGP for more information on post-construction closeout requirements.
- File Notice of Termination (NOT) when final stabilization has been achieved.

## **Best Management Practices**

The section provides information about the most common BMPs. These practices are organized by where they are found on a construction site as follows.

- Construction Entrance/Exit
- Staging Areas
- Slopes
- Channels
- Bare Ground
- Inlets and Outlets
- Water Collection and Discharge Areas

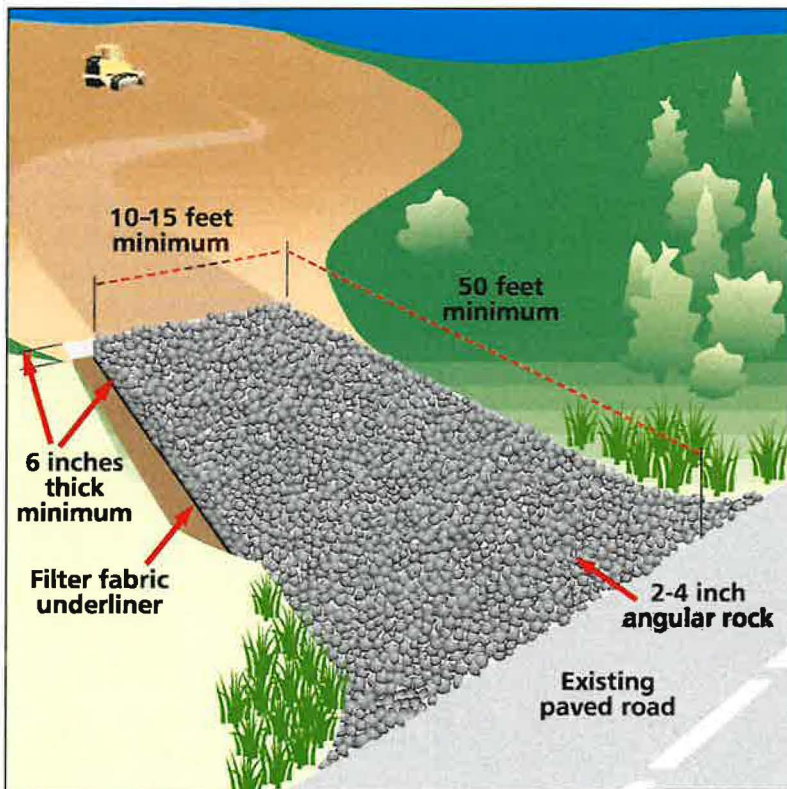


## Construction Entrance/Exit

### Stabilized Construction Entrance/Exit

Minimize vehicle tracking of dirt or mud from the construction site. A rock construction exit can reduce the amount of dirt transported onto paved roads by vehicles by knocking mud off the vehicle tires. Use street sweeping or install a wheel wash if the stabilized entrance is not effective in preventing track-out. No visible signs of tracking from vehicles should be present on public or private roadways exiting the site.

Inspect construction exits daily and after storm events for evidence of off-site tracking onto paved surfaces. Remove tracked dirt from all off-site paved surfaces within 24 hours of discovery, or if applicable, within a shorter time.



The stabilized area may be larger or smaller, depending on the size of the construction site and equipment. On a single lot, the stabilized area should be a minimum of 12 feet wide and the length of the lot driveway or the maximum length that can be achieved.

## ***Stabilized Construction Entrance/Exit Troubleshooting tips***

<b>Condition</b>	<b>Common Solution</b>
Dirt tracking from the site.	Reschedule project activities for dry periods, prevent vehicles from accessing bare soils or provide wheel wash or equivalent control. Sweep, shovel, or vacuum these surfaces to remove track-out material by the end of the same work day.
Vehicles are leaving the site from other locations and not using the designated construction exit.	Designate access points and require all employees, subcontractors, and others to use them. Fence or barricade other access points.
Aggregate needs to be replaced or replenished.	Remove accumulated sediment and/or replace material as needed.
Aggregate material is being incorporated into soil.	Use filter fabric under base material.
Construction exit not long enough to remove mud from the tires.	The access point should be at least 50 feet in length or four times the circumference of the largest construction vehicle tire, whichever is greater.
Runoff leaving the site.	Grade construction entrance/exit points to prevent runoff from leaving the construction site.

## Staging Areas

### Material Storage and Waste Management

#### **CONSTRUCTION MATERIALS**

Store materials delivered in bags and boxes on pallets. Cover bagged/boxed materials on non-working days and prior to rain events to protect materials from wind and precipitation.

#### **HAZARDOUS MATERIALS/WASTE**

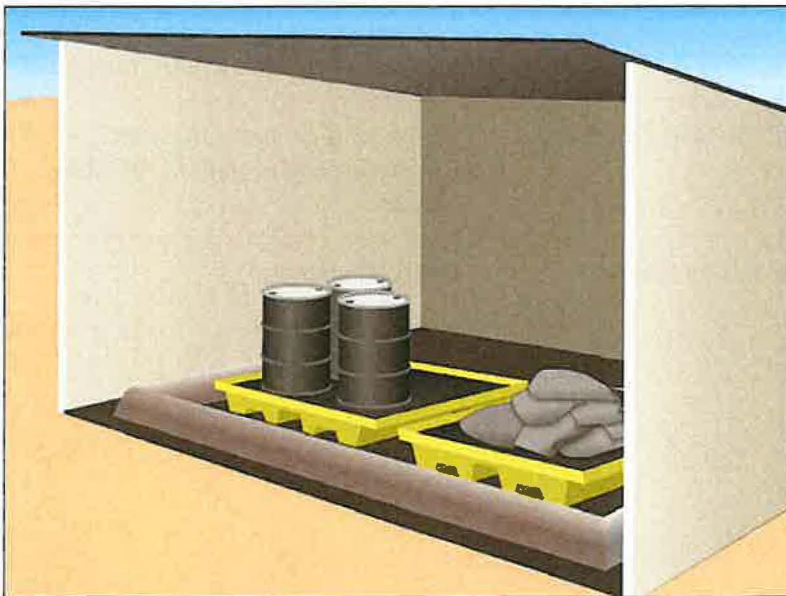
Store oil, gasoline, paint and any hazardous substances in drums and bags on pallets under cover and in secondary containment. Storage of larger fuel containers requires secondary containment and spill control requirements may apply. Store hazardous materials in the original containers with their original product labels. Restrict access to storage areas to prevent vandalism.

#### **SOLID WASTE**

Properly dispose of solid waste (collected sediment, paper, plastic, construction and demolition debris, and other wastes).

#### **PORTABLE TOILETS**

Do not locate portable toilets near drainage facilities, water bodies, or in areas that will collect water. Check toilet waste storage and disposal procedures weekly. Ensure that the toilets are maintained in good working order and wastes are transported offsite by a licensed service. Stake toilets or otherwise secure to ground.





## ***Material Storage and Waste Management Troubleshooting tips***

<b>Condition</b>	<b>Common Solution</b>
Materials located throughout construction site.	Designate storage area away from water bodies and storm drains. When practical do not stockpile materials on site. Bring to the site only what will be used within a reasonable timeframe.
Litter and trash found on construction site or in the storm drain system.	Provide dumpsters or other containers. Collect trash and dispose of properly.
Overflowing dumpsters.	Arrange for waste collection before containers overflow.
Leaking dumpsters.	Contact dumpster provider and request new dumpster. Close lid or provide covering.
Hazardous chemicals, drums, or bagged materials are stored directly on the ground.	Place material on a pallet and when possible, under cover and in temporary containment.
Hazardous waste containers are not labeled.	Re-label items with an original label or remove substances from the site.
Leaking hazardous materials containers.	Contain immediately. Overpack leaking container. Properly dispose of waste and any contaminated soil as a hazardous waste. Provide secondary containment for hazardous materials.
Portable toilet tipped over.	Place toilet on level surface and out of drainage paths or traffic areas. Stake down.
Portable toilet leaks.	Repair or replace.



## Staging Areas

### Stockpile Management

Stockpile protection is a year-round concern. Install temporary barriers around stockpile perimeters to prevent contact with storm water runoff when necessary. Temporary barriers can be berms, dikes, silt fences, or sandbag barriers. Protect all active stockpiles with sediment barriers prior to rain events.

#### **SOIL STOCKPILES**

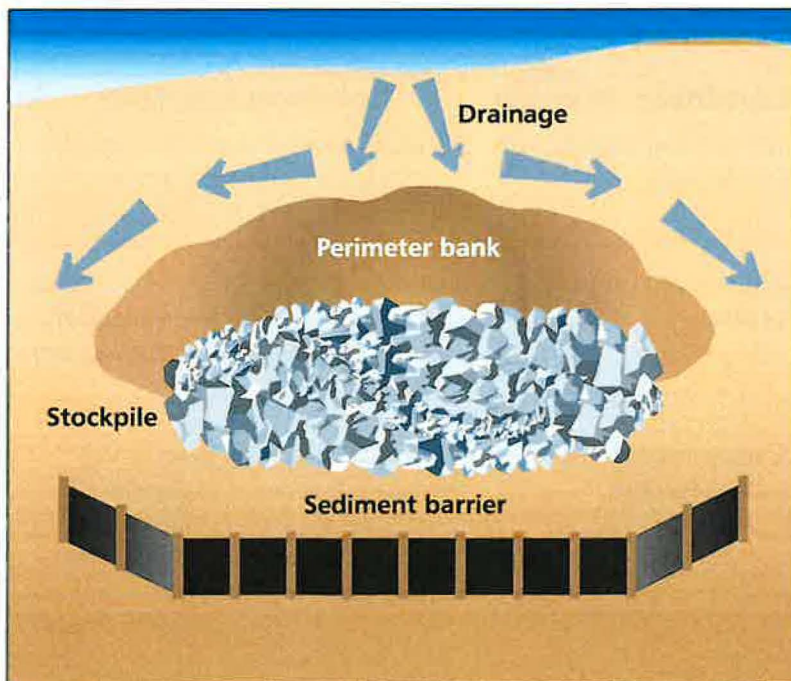
Cover inactive soil stockpiles or protect them with soil stabilization: tackifier, sandbag-weighted plastic, or seed and mulch.

#### **PAVING MATERIAL STOCKPILES**

During the rainy season, cover inactive stockpiles of Portland Cement concrete aggregate, asphalt concrete, rubble, and aggregate base and sub-base, and protect with a temporary perimeter barrier at all times. During the non-rainy season, cover inactive stockpiles or protect with a sediment barrier.

#### **ASPHALT BASED COLD-MIX STOCKPILES**

Place active and inactive cold-mix stockpiles on plastic and cover with plastic prior to rain events.



## **Stockpile Management Troubleshooting tips**

<b>Condition</b>	<b>Common Solution</b>
Stockpile eroded.	Cover stockpile with plastic sheeting or spray with a soil stabilizer. Protect with a temporary perimeter sediment barrier around the stockpile.
Stockpile in water flow path.	Remove stockpile from the drainage path or protect with a berm, dike, or temporary diversion device.
Storm water run-on affects stockpile.	Protect the stockpile by using temporary perimeter sediment barriers such as berms, dikes, silt fencing, or sandbags.
Wind causes erosion and/or blowing dust.	Cover stockpile or spray with a soil stabilizer. Use a water application to suppress dust. Install wind barrier.
Cold-mix stockpile is on the bare ground.	Remove stockpile and place on plastic or similar material.
Cold-mix is stored in curb drainage way.	Remove stockpile from flow line.

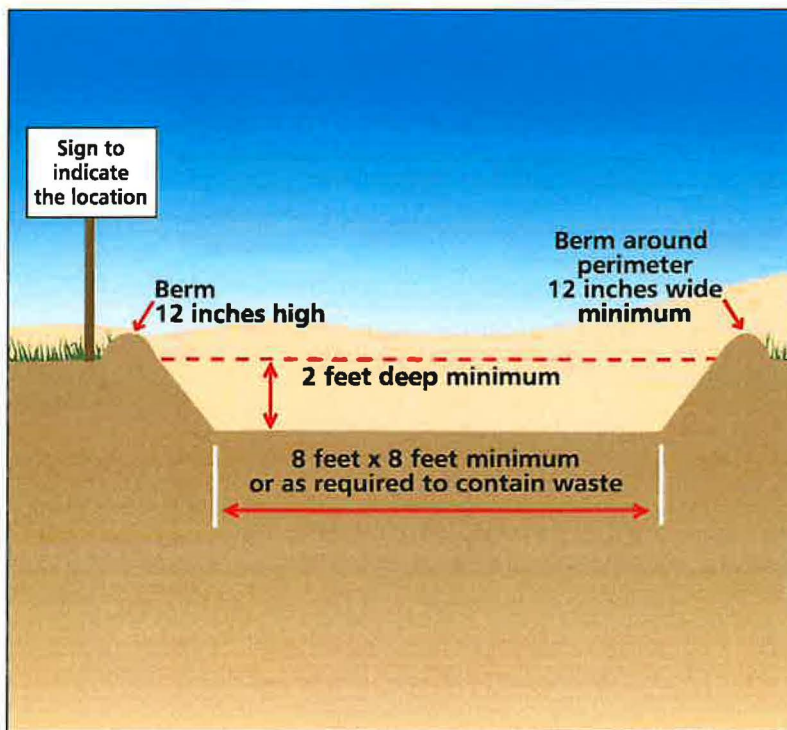
<b>Condition (Plastics)</b>	<b>Common Solution</b>
Plastic sheeting separates along the seams.	Overlap edges of plastic sheeting by 12-24 inches, tape the entire length or anchor with sandbags along seam.
Plastic sheeting tears and separates.	Overlap plastic sheets by 12-24 inches, tape edges together or weight down. Maintain installation by replacing torn areas.
Plastic sheet is blown or displaced by winds.	Maintain installation by replacing sheets in position. Anchor with sandbags or other suitable tethered anchoring system, space on 10 foot grids.

## Staging Areas

### Washout Area

Concrete washout structures are used to contain concrete and liquids when the chutes of concrete mixers and hoppers of concrete pumps are rinsed out after delivery.

- Washout area can also be used for concrete, sheet rock mud, stucco, and masonry.
- The pit (or ready-made structure) should be large enough to contain the anticipated waste from operations.
- Washout pits should be lined with a minimum of 10-mil polyethylene sheeting, free of holes or other defects when located in sandy soils, environmentally sensitive areas, in areas where there is high groundwater or when used for disposal of wastes other than those listed above.
- Washout areas should be located a minimum of 50 feet from storm drains or receiving waters.
- Inspect daily when in use.
- Maintain washouts to provide a minimum of one foot freeboard. Clean existing facilities or construct additional facilities when the washout is 50% full.
- Allow waste to dry and then dispose of as solid waste.



## **Concrete Washout Troubleshooting tips**

Condition	Common Solution
Washout overflows.	Pump or siphon off excess liquids and properly dispose. If necessary, discontinue using washout and construct new facility to contain anticipated washout operations.
Drivers not using washout area.	Place sign at washouts and instruct drivers of the washout locations. Educate drivers and other concrete company personnel.



## Slopes

Stabilize slopes immediately after grading work is completed or within 14 days of construction either temporarily or permanently ending on that area of the site. Tracking is often the first practice used to stabilize bare slopes. Seeding and mulching provide the best and cheapest protection. Use one or more of the following actions to reduce erosion on slopes.

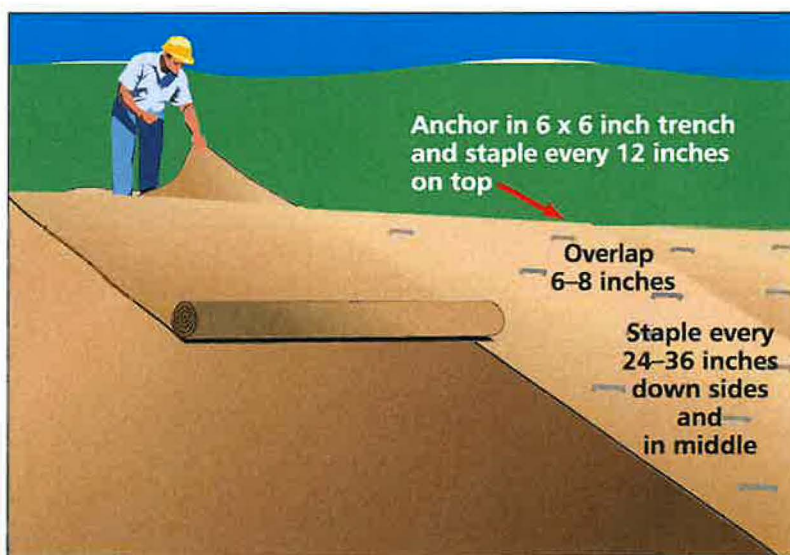
### Mats and Blankets

Mats and blankets are used for temporary stabilization of disturbed soils and establishing vegetation. Erosion control blankets are used to protect steep slopes, drainage ditches, and other areas where erosion potential is high. Mats are similar to erosion control blankets, but are thicker and sturdier because they have more layers and sturdier fill material.

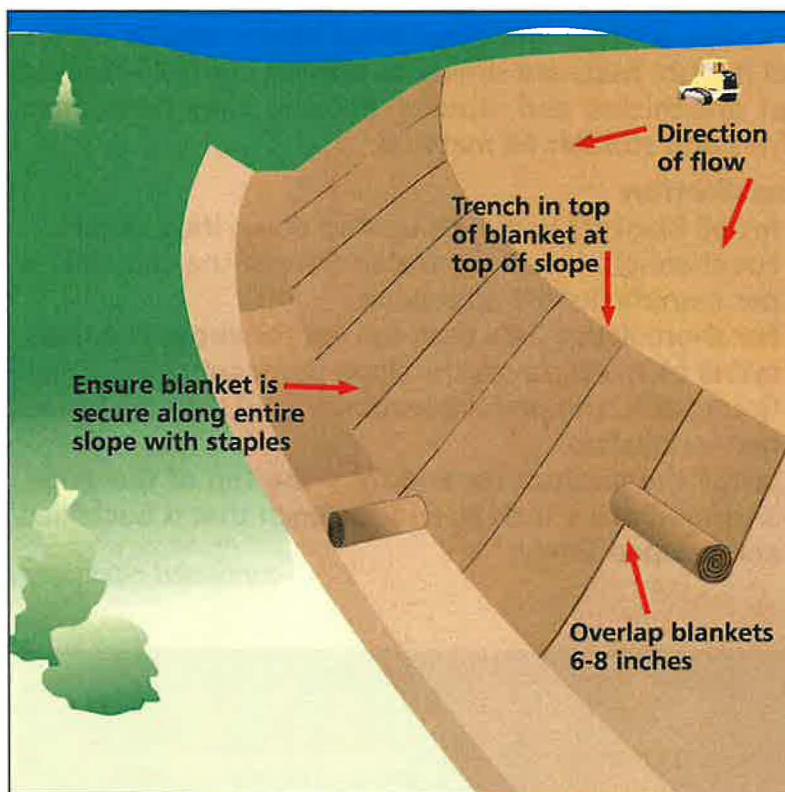
#### Installation

- Install blankets and mats up and down long slopes.
- For channels, install parallel to flow of the channel, as per manufacturer's directions.
- For short slopes (less than roll width) above channels, install blankets across the slope (horizontal).
- Grade, disk, and prepare seedbed. Seed the area before mat installation.
- Install the product starting from the top of the slope, anchored in a 6 inch by 6 inch trench that is backfilled and tamped firmly.

*—continued next page*



- Walk blankets and mats down to ensure good contact with the soil. Staple blankets/mats every 12 inches on tops and 24–36 inches down the sides and in the middle, according to manufacturer's directions.
- Do not stretch blankets, and do not exceed manufacturer's directions on maximum slope angle for the product.
- Additional staking or stapling is needed for applications in channels that carry flowing water, and on steep slopes. Inspect before and after each rain event and twice monthly until the tributary drainage area has been stabilized.



## ***Mats and Blankets Troubleshooting tips***

<b>Condition</b>	<b>Common Solution</b>
Anchoring is failing. Undercutting occurring.	Dig trench along the top and bury the blankets. Use staples to anchor according to manufacturer's recommendations.
Undercutting due to inadequate preparation.	Repair the soil surface. Remove rocks, clods and other obstructions. Fill in rills in uneven areas to promote good contact between mat and soil.
Excessive water flow across stabilized surface.	Use other BMPs to limit flow onto stabilized area or reduce slope length. See Berms, Ditches and Swales, Slope Tracking.

<b>Condition (Geotextiles)</b>	<b>Common Solution</b>
Undercutting occurs along the top of the slope.	Dig a trench along the top of the slope (6 in by 6 in) and anchor blanket into trench by back filling and tamping the soil.
Blankets separate along the seams.	Overlap edges of blanket by 6 inches and staple every 3 feet, or according to manufacturer's directions.
Blankets separate where the rolls are attached end to end.	Shingle the blanket so that the top blanket overlaps the bottom blanket by 6 inches and staple through the overlapped areas every 12 inches.
Blanket does not make complete contact with the soil surface.	Prepare the soil surface by removing rocks, clods, sticks and vegetation; fill in uneven areas.



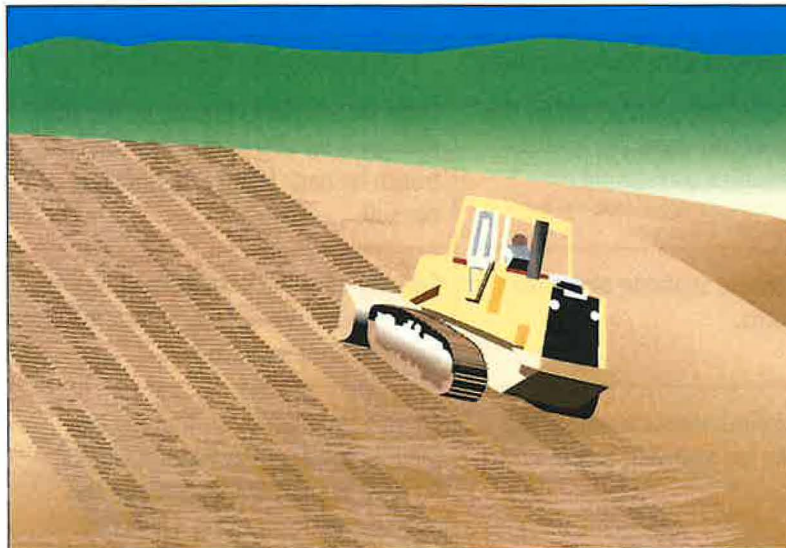
## Slopes

### Slope Tracking

Slope tracking will help hold soil in place, trap seed and reduce runoff velocity. This can be done using tracked equipment, by using a serrated wing blade attached to the side of a bulldozer, or by other agricultural equipment such as spike-toothed harrows.

#### ***SLOPE TRACKING CAN BE USED ON:***

- all slopes to be seeded,
- all slopes steeper than 1:3 having a vertical rise of 5 feet or greater,
- on areas that would otherwise be unfavorable for plant establishment,
- or as a temporary stabilization on bare soils exposed by construction activities.



Tread-track slopes up and down hill to reduce erosion.

### ***Slope Tracking Troubleshooting tips***

Condition	Common Solution
Evidence of rills or washes.	Verify that indentations are perpendicular to the slope of the hill. Re-track, if necessary. Evaluate upslope controls and install additional BMPs.



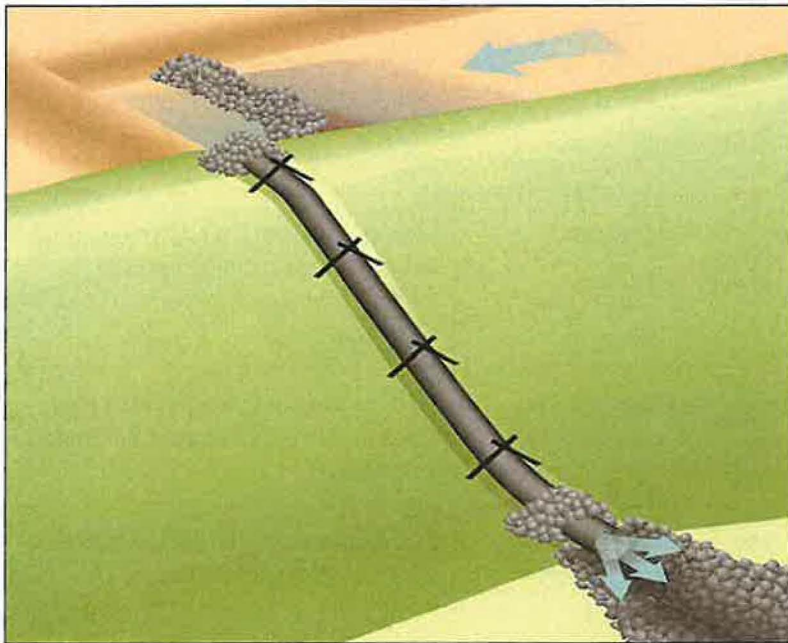
## Slopes

### Slope Drain

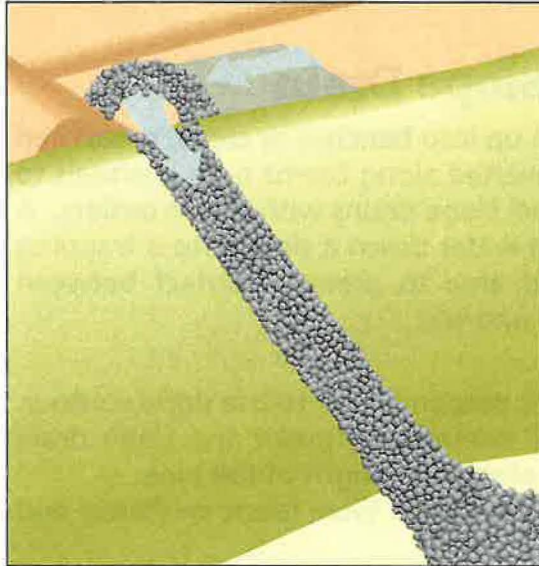
If slopes are broken up into benches or steps, runoff can be collected and diverted along berms or in channels to pipe or open channel slope drains with stable outlets. A slope drain conveys water down a slope into a trapping device or stabilized area to prevent contact between clean run-on water and soil.

#### Installation

- Install slope drains perpendicular to the slope contour. Compact the soil around and under the slope drain inlet, outlet, and along the length of the pipe.
- Protect the pipe inlet with filter fabric or flared end sections.
- Ensure that pipe connections are watertight. Stake down securely.
- Protect outlet with riprap. For high-velocity discharges, reinforce riprap with concrete or reinforced concrete devices.
- It may be necessary to capture discharge and allow sediment to settle out.



Temporary downslope drain using plastic pipe. Stake down securely, and install where heavy flows need to be transported down highly erodible slopes. Note gravel check dam in front of inlet.



Temporary or permanent down drain using geotextile underliner and riprap. Provide flow dissipaters at the outlet to absorb high energy discharges, and inlet protection until vegetation is established.

### ***Slope Drain Troubleshooting tips***

Condition	Common Solution
Pipe separates.	Reconnect pipe sections. Stake down securely. Ensure that pipe connections are watertight.
Pipe outlet erodes.	Repair damage and stabilize outlet with a flared end section, riprap, or velocity dissipation device. If necessary, reduce flows being discharged.
Pipe becomes clogged.	Flush out pipe. Place a screen or grate at inlet to capture large particles. Identify source of material and consider additional BMPs.
Erosion occurs around inlet.	Stabilize area around inlet with filter fabric or flared end section. Re-grade around inlet.
Excessive sediment accumulates around inlet/outlet.	Remove accumulated sediment and stabilize upstream area.
Slope drain overtops.	Limit drainage area and flow velocity. Check pipe diameter to ensure that it is sized properly to accept flow. Add additional pipes to carry flows as necessary.

## Slopes

### Sediment Barriers – Fiber Roll, Silt Fence, and Buffer Strip

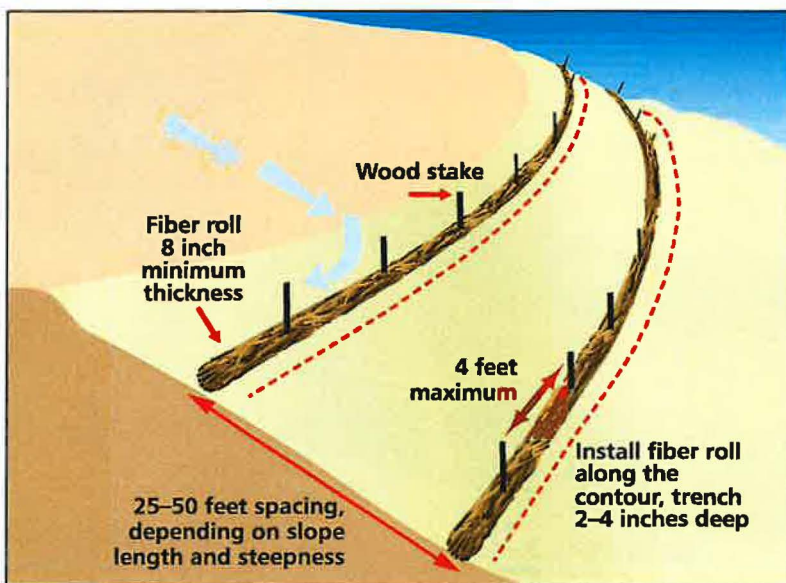
Use sediment barriers along the face, and at grade breaks of exposed and erodible slopes. They can also be used as controls along the property boundary and to protect storm drains, dry wells and water bodies.

#### **FIBER ROLL**

A fiber roll consists of straw, flax, compost or similar material that is rolled and bound into a tight tubular cylinder and placed at regular intervals on a slope face. Fiber rolls intercept runoff, reduce runoff flow velocity, release the runoff as sheet flow and remove sediment from runoff.

#### **INSTALLATION**

- Install at the toe of the slope or slightly away from the toe, and every 10 to 20 feet apart on long slopes depending on the slope steepness and soil type.
- If more than one fiber roll is placed in a row, the ends of the adjoining rolls should be tightly overlapped 12 to 18 inches.
- Fiber rolls are typically left in place. If they are removed, dispose of the accumulated sediment and fill in trenches, holes, or depressions to blend in with adjacent ground contours.
- Inspect prior to and after rain events, and at least daily during prolonged rainfall.





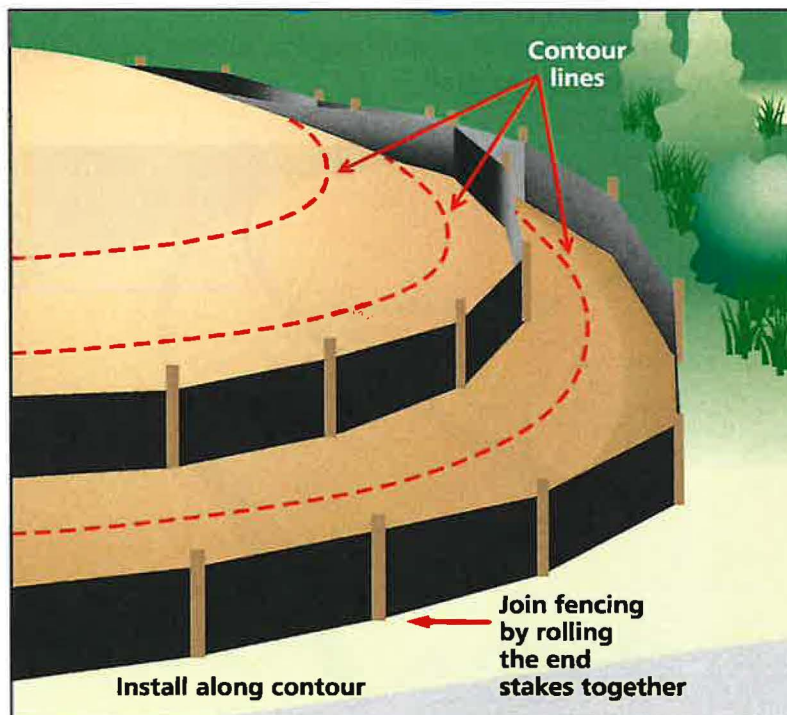
## **Fiber Roll** **Troubleshooting tips**

Condition	Common Solution
Excessive sediment accumulation.	Remove accumulated sediment before it reaches halfway up the roll. Apply erosion controls upstream to reduce sediment in runoff.
Fiber rolls split, tear, unravel, or become ineffective.	Replace them immediately.
Runoff flows along fiber roll and discharges around ends.	Make sure rolls are placed on a level contour and turn ends of fiber rolls up-slope.
Runoff flows between fiber rolls.	Fiber rolls should be butted tightly together or overlapped and staked.

### **SILT FENCE**

A silt fence is a temporary linear barrier that captures sediment by ponding and filtering storm water runoff to allow sediment to settle out. Silt fence can be used along slopes, below exposed soil areas, and around temporary stockpiles.

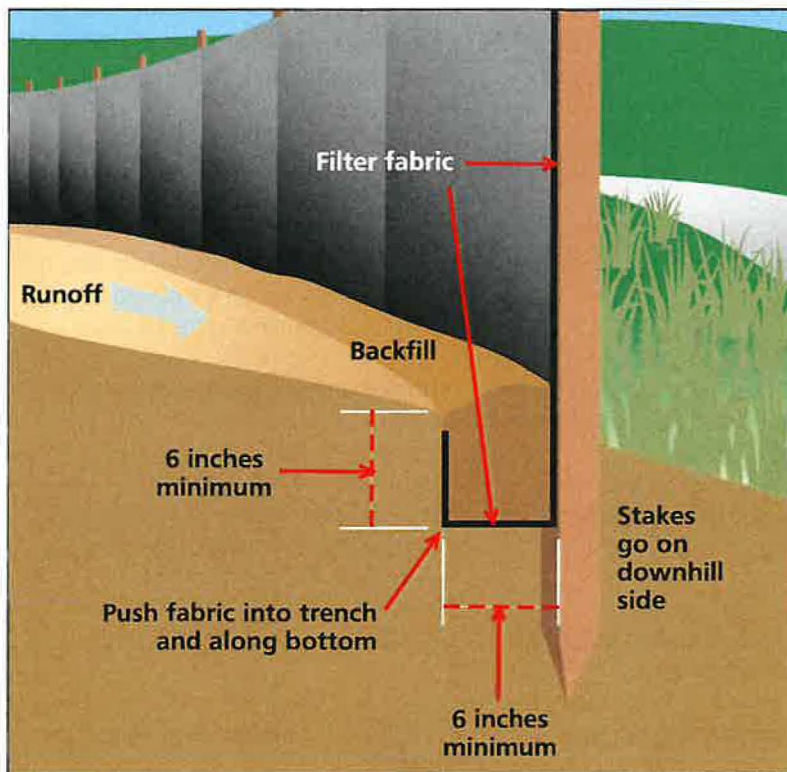
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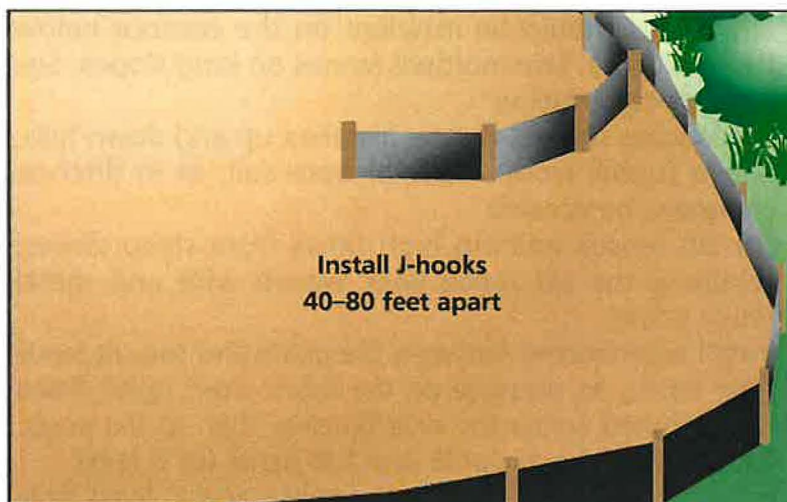


- Silt fences should be installed on the contour below bare soil area. Use multiple fences on long slopes. See spacing table below.
- Silt fencing **should not** be installed up and down hills, above (uphill from) areas of bare soil, or in ditches, channels, or streams.
- For silt fences treating high flows from steep slopes, reinforce the silt fence with woven wire and metal fence posts.
- Install wire fencing between the posts and the silt fence filter fabric, so pressure on the fabric from uphill flows is distributed across the wire fencing, then to the posts. Turn ends of fence uphill one full panel (or 6 feet).
- Inspect prior to and after rain events, and at least daily during prolonged rainfall.

### Maximum Allowable Silt Fence Spacing

Slope Steepness	Maximum Slope Length (feet)
2:1	50
3:1	75
4:1	125
5:1	175
Flatter than 5:1	200





If muddy runoff flows along the uphill side of a silt fence, install "J-hooks", curved sections of silt fence that act as small dams to stop, pond up, and filter or settle out flows.

### ***Silt Fence Troubleshooting tips***

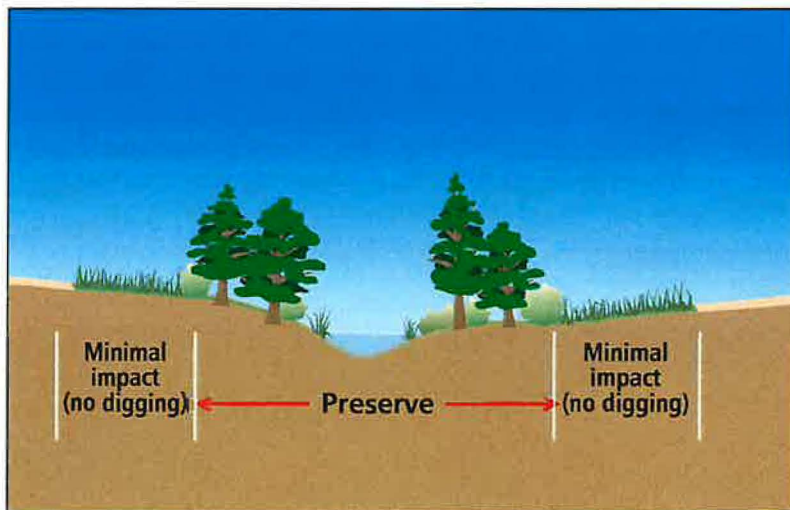
Condition	Common Solution
Excessive sediment accumulation.	Remove accumulated sediment before it reaches halfway up the fence. Apply erosion controls upstream to reduce sediment in runoff.
Flow undermining fence. Bottom of fence is not properly keyed in.	Trench, place fabric, and backfill.
Lack of sufficient ponding area.	Fence should be installed with at least a 3 foot setback from the toe of slope where possible. Divert flow at top of slope.
Erosion occurs around barrier ends or runoff escaping around end.	Extend fence and turn ends up-slope.
Slope draining to fence is too steep.	Shorten slope length using fiber rolls or equivalent. Increase setback of silt fence from the toe of slope.
Fence is installed in concentrated flow area.	Replace fence with check dams.
Stakes are too far apart.	Add stakes a maximum of 10 feet apart.



### ***BUFFER STRIP***

A buffer strip is an undisturbed area or strip of natural vegetation or a newly established suitable planting adjacent to a disturbed area for the purpose of reducing erosion and runoff. It is used between disturbed areas and streams or other water bodies, along natural swales and wetlands, between a construction site and any impermeable surface, and any place an extra measure of erosion reduction and runoff control is desired.

Preserve grass, shrubs, trees, and other vegetation located above or below excavated areas, if possible. Vegetation above construction sites prevents high volume sheet runoff flows from moving across cut or fill areas. Vegetation below the construction site helps filter and trap sediment before it can move into ditches, channels, and streams.



Vegetated waterways help move upland water through or past your site while keeping it clear of mud. Do not disturb existing vegetation along banks, and leave a buffer of tall grass and shrubs between stream bank trees and disturbed areas.



## Channels

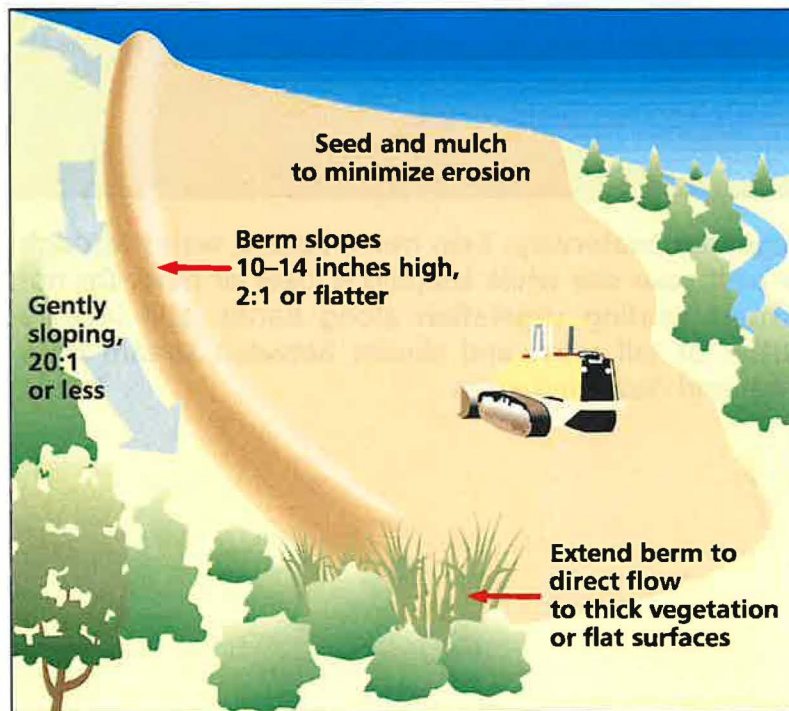
### Berms, Ditches, and Vegetated Swales

Earth berms, ditches and vegetated swales are structures that intercept, divert, and convey water around or through the project site. They are used to convey water down sloping land, along paved surfaces to intercept runoff, along the top of slopes to divert surface flow from slopes, towards stabilized drainage systems and below steep grades where runoff begins to concentrate.

It may be necessary to use other practices such as check dams, plastic sheeting, or blankets to prevent scour and erosion in the swales and ditches.

#### **BERMS**

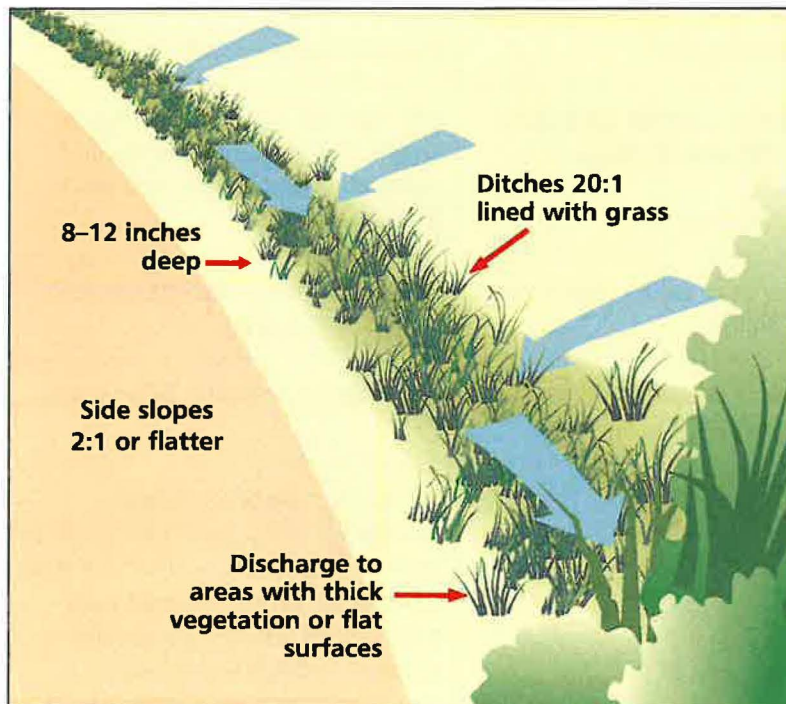
A berm is a long, mounded "collar" of compacted soil located uphill from the excavated area. The berm is created with soil excavated from an adjoining cut along the perimeter of the disturbed area. The berm is designed to intercept overland runoff and direct it around the construction site. Turf reinforcement mats, erosion control blankets, or rock protection might be needed for berms that channel water at a slope of 20:1 or greater.



### ***DIVERSION DITCHES***

Diversion ditches are similar to berms—they are designed to intercept and divert upland runoff around bare soil areas. Ditches are cut above cleared or fill areas and designed with a gentle slope to carry water away from work areas.

- Natural (i.e., not “man-made”) drainage channels and creeks or streams cannot be cleared, re-routed, or otherwise altered without one or more permits from the U.S. Army Corps of Engineers and the Idaho Department of Water Resources.
- Construct and line “pass-through” ditches before general clearing or grading work begins.
- The outlet must be installed, seeded, stabilized, and protected before the ditch receives incoming flows.
- Ditches with slopes of 20:1 or more require erosion control blankets, mats, or rock liner protection.



### ***VEGETATED SWALE***

A swale is a vegetated channel that is used to convey and dispose of concentrated runoff without damage from erosion, deposition, or flooding.

- Ensure that the grass swale outlet is stable.
- Ensure that side drainage into the grass swale is not blocked.

*—continued next page*

- Stabilize the grass swale with vegetation prior to large runoff events. Newly seeded areas need to be inspected frequently to ensure the grass is growing.
- Inspect every 7 days or every 14 days and within 24 hours of a storm event until the tributary drainage area has been stabilized.
- Repair or replace lost riprap, linings, or soil stabilization as needed.

### ***Berms, Ditches, and Vegetative Swales Troubleshooting tips***

<b>Condition</b>	<b>Common Solution</b>
Berms washed out.	Compact the soil used to build the berm.
Area behind berm eroded.	Stabilize the uphill side of the berm.
Outlet eroded.	Stabilize outlets; replace lost riprap.
Ditches or swales eroded due to high velocity flows.	Line channels with permanent stabilization. Place riprap or line channel with blankets or plastics. Add check dams upstream.
Ditches or swales filled up with sediment.	Remove sediment. Stabilize upstream contributing areas.
Ditches or swales are overtaken by flows.	Resize ditches to handle larger flows.
Ponding within ditch or swale. Poor vegetative cover.	Verify design slope and regrade. Re-establish grass. Spot seeding can be done on small areas to fill in bare spots where grass did not grow properly. If the seeded area is damaged due to runoff, additional storm water measures such as check dams or matting may be needed.
Accumulated debris. Scour and erosion occurring.	Remove and dispose of properly. Immediately make repairs and revegetate.



## Channels

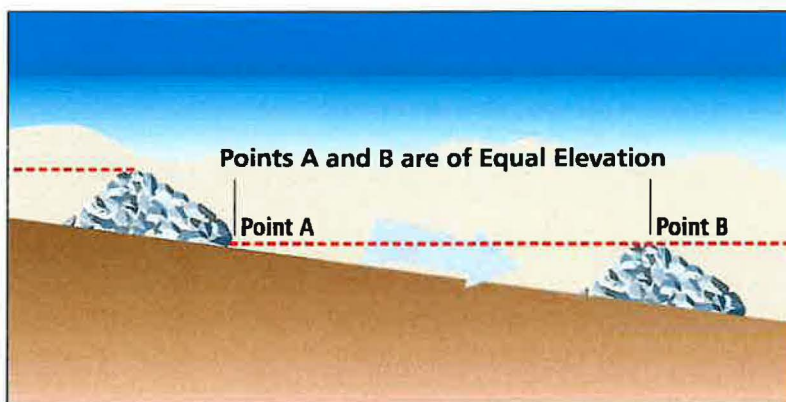
### Check Dams

Drainage ditches may need temporary check dams to capture sediment and reduce ditch bottom downcutting.

- Dams can be made of rock, stone-filled bags, or brush and should be sized according to site-specific characteristics.
- Some types of fiber rolls may be used in situations with minimal slope and flow.
- Silt fencing and straw bales are not approved for use as silt check dams, and must not be used in drainage ditches that carry flowing water.

#### **INSTALLATION**

- Install check dams before uphill excavation or fill activities begin. Tied end of bag goes on downstream side.
- Space check dams according to the slope of the ditch bottom (see table).
- Extend the ends of the check dam to the top of the bank to prevent bypassing and sidecutting. Keep the middle part lower and relatively flat so overflows aren't too concentrated and bypasses are prevented.
- Placing filter fabric under the dam during installation will make removal much easier.
- Stone bag check dams are easiest to remove, and can be re-used.
- Intercept sediment before it reaches streams, lakes, rivers, or wetlands.
- Inspect every 7 days, or every 14 days and within 24 hours of a storm event.
- Check dams require extensive maintenance after storm events or high velocity flows to repair damage.
- Remove temporary dams after the site is stabilized and vegetation is established.



## **Check Dams**

### **Troubleshooting tips**

Condition	Common Solution
There is too much sediment.	Remove accumulated sediment to recover holding capacity. Remove sediment when it reaches 1/3 the check dam height.
There is insufficient ponding area.	Space check dams farther apart. Increase height of dam.
Flow travels around check dam.	Lower center of check dam so that it is 6 inches lower than the channel side.
Check dams wash away.	Replace check dams. Consider adding more dams upstream.
Wrong type of materials is used to construct barrier.	Use heavier materials such as larger rocks. Do not use straw bales or silt fence.
Check dams undercut.	Stabilize ditch with erosion control blanket, vegetation or other controls.
Rills and erosion channels between check dams.	Check dams are too far apart. Add more and stabilize bottom of ditch.

## Channels

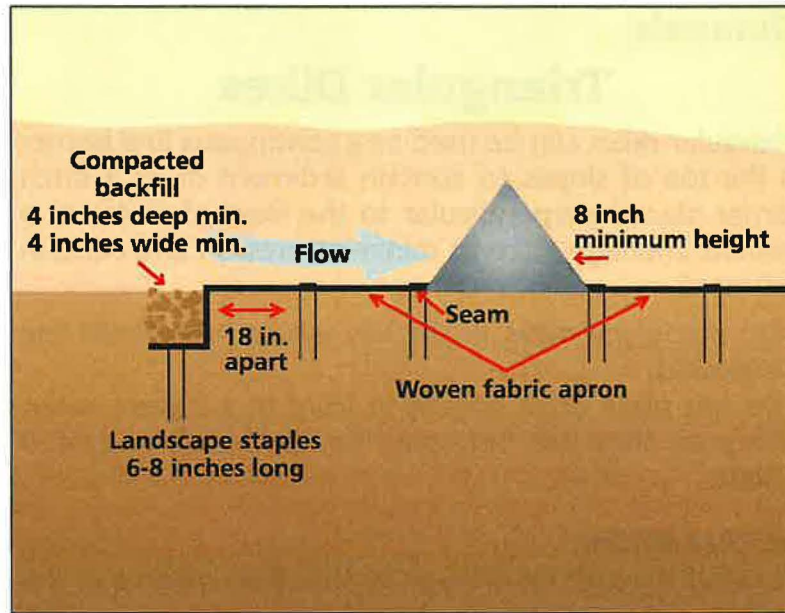
### Triangular Dikes

Triangular dikes can be used as a continuous line barrier at the toe of slopes to contain sediment or as a ditch barrier placed perpendicular to the flow of water in a defined drainage ditch to minimize erosion and contain sediment.

- Do not place dikes in ditches where high flows are expected.
- Do not place dikes directly in front of a culvert outlet because they will not stand up to the concentrated flow.

#### **INSTALLATION**

- Extend the dike far enough so that the bottoms of the ends are higher than the top of the lowest center. This prevents water from flowing around the dike.
- Conform the dike to the geometry of the ditch so that no space exists between the dike and the ditch bottom.
- Place the first 6 inches of the upstream apron into the trench and anchor it with one row of 6 inch to 8-inch landscape staples at 18-inch centers.
- Place 6 inch to 8-inch landscape staples on 18-inch centers between the trench and seam, along the seam on the upstream side, where the downstream apron meets the dike, and on the edge of the downstream apron.
- Each dike has an open sleeve at either end. Connect adjoining dikes with these sleeves and then repeat the anchoring procedure.
- Once all the dikes have been joined and anchored, fill in the upstream trench with soil and compact it.
- Spacing of dikes is dependent on drainage area and grades.



### **Triangular Dikes** **Troubleshooting tips**

Condition	Common Solution
Runoff escaping around the dike.	Lengthen the dike.
Water flowing under the dike.	Re-anchor, add more as needed.
Sediment level at one half the dike height.	Clean out.



## Bare Ground

Minimize the amount of bare ground exposed at one time and phase construction activity. The following practices can be used once ground has been disturbed.

### Dust Control

Dust control consists of applying water or other dust-control substances. Care should be taken when applying water or liquid substances to prevent the washing of sediment offsite or into storm drains or water bodies.

- Provide stabilized roadway to minimize amount of dust generated by construction vehicles.
- Apply protective materials such as stone, mulch or binders to exposed areas.
- Install barriers to prevent dust from blowing off site. A board fence, wind fence, sediment fence, or similar barrier can control air currents and blowing soil.
- Establish vegetation at the earliest possible opportunity.
- Keep haul roads, detours, and other bare areas moist by sprinkling them with water or other dust control methods
- Perform street sweeping, as needed.
- Cover small stockpiles as an alternative to applying water or other substances.

Check site during windy conditions to monitor measure effectiveness. Reapply dust control measures as needed to maintain level of control required.

### **Dust Control Troubleshooting tips**

Condition	Common Solution
Excessive dust leaves the site.	Increase frequency of water application or other controls.
Vehicles kick up dust.	Water more frequently. Limit vehicle speeds. Stabilize the roadway.
Watering for dust control causes erosion.	Reduce water pressure on the water truck. Check watering equipment to ensure that it has a positive shutoff. Water less frequently.
Sprayed areas are ineffective at limiting dust.	Re-spray areas and ensure that the application rate is proper or stabilize site using other practices.

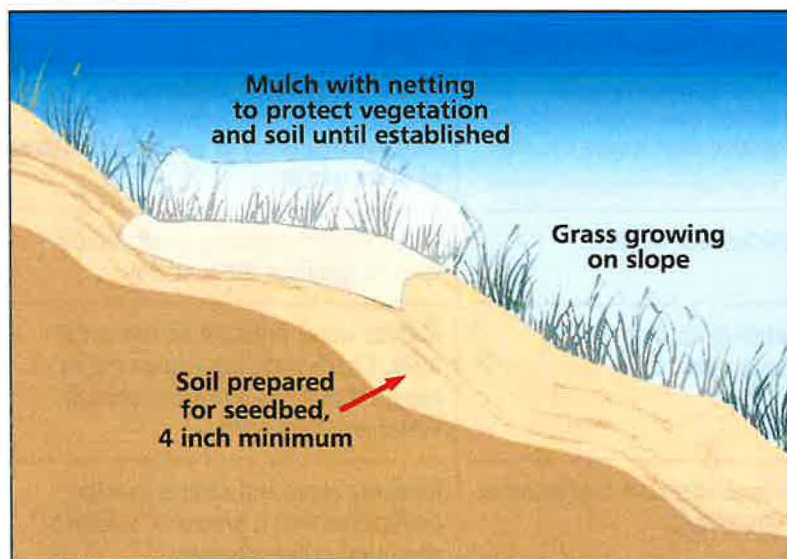
## Bare Ground

### Seeding, Mulches, and Binders

Bare soil in excavated or fill areas must be seeded, mulched, or covered immediately after final grading work is completed.

#### TEMPORARY SEEDING

- Stockpile topsoil and spread over site prior to seeding.
- Stabilize bare soil/disturbed areas with erosion controls within 14 days of these areas being inactive. These areas may be seeded, or other erosion controls may be used if they are more appropriate.
- Prepare bare soil for planting by disking across slopes, scarifying, or tilling if soil has been sealed or crusted over by rain. Seedbed should be dry with loose soil to a depth of 4 to 6 inches.
- For slopes steeper than 4:1, walk bulldozer or other tracked vehicle up and down slopes before seeding to create tread-track depressions for catching and holding seed. Mulch slopes after seeding if possible.
- Cover seed with erosion control blankets or turf mats if slopes are 2:1 or greater.
- Water seeded areas during dry conditions to ensure seed germination and early growth. Re-seed areas that do not show growth within 14 days after rain or watering.
- Protect bare areas during the cold season by sowing winter rye, winter wheat, and mulching. Sow permanent seed when weather permits.



## **MULCHES**

Mulch by itself or applied over seed provides excellent erosion protection. Use binder on slopes greater than 3:1.

- In general, apply mulch so that at least 80 to 90 percent of the ground is covered.
- Straw mulch can be applied mechanically or by hand. Mechanical application involves a straw blower and may require an access road or driving surface capable of supporting the equipment. Manual application is time and labor intensive and should be used only on small areas or where equipment access is not feasible.
- Wood hydromulch or hydroseed will decrease sheet erosion.
- The preferred method for anchoring straw mulch in place is to use a binder. Other methods for anchoring the mulch include crimping, punching, or track walking. Track walking should be used only where crimping or punching is impractical.

Mulch Product	Typical Application Rate
Straw or hay	1½ to 2½ tons per acre
Wood chips, bark, sawdust	5 – 8 tons per acre
Rock	200 – 500 tons or more per acre
Hydraulic mulches and soil binders	1½ to 2 tons per acre
Compost	2 – 3 tons per acre

## **SOIL BINDERS**

- Soil binders are materials applied to the soil surface to temporarily reduce erosion.
- Prepare soil before applying the binder so that the binder adheres to and penetrates the soil surface. The untreated surface must be roughened and must contain sufficient moisture for the binder to achieve uniform penetration.
- Binding agents can be sprayed over the slope with water or mixed with hydromulch or hydroseed.
- Soil binders require a minimum curing time before becoming fully effective, therefore binders should not be applied during or immediately before rainfall.



## **Seeding, Mulches, and Binders**

### **Troubleshooting tips**

<b>Condition</b>	<b>Common Solution</b>
Slope was improperly dressed before application.	Roughen embankment and fill areas first by rolling with crimping or punching type roller or by track walking.
Coverage is inadequate.	Follow recommended application rates. Reapply where necessary.
Soil binder allowed inadequate drying time or washed off slope.	Allow at least 24 hours for the material to dry before a rain event. Reapply where necessary.
Portions of the mulch have been disturbed.	Keep workers and equipment off the mulched areas and repair damaged areas. Use fencing, if needed.
Slope was improperly dressed before application.	Roughen slopes. Furrow along the contour of areas to be seeded.
Seeds fail to germinate.	Apply straw mulch to keep seeds in place and to moderate soil moisture and temperature. Temporary irrigation may be necessary.
Seeded slope fails.	Fill in rills and re-seed. Combine with erosion control blankets or mats.
Seeding is washed off slope.	Reapply where necessary and mulch.
Excessive water flows across stabilized surface.	Use other BMPs to limit flow on stabilized area and to reduce slope lengths.
Sprayed areas degrade or become ineffective.	Consider other or additional BMPs. Reapply binder as necessary.
Sprayed slope has spot failures.	Repair slopes and re-spray damaged areas.
Binder fails to penetrate soil.	Roughen soil and pre-wet to manufacturer's recommendations. Reapply to areas where necessary.
Mulch blows away.	Anchor straw mulch in place by applying a tackifier, crimping, punching, or track walking. May need to use a different BMP.

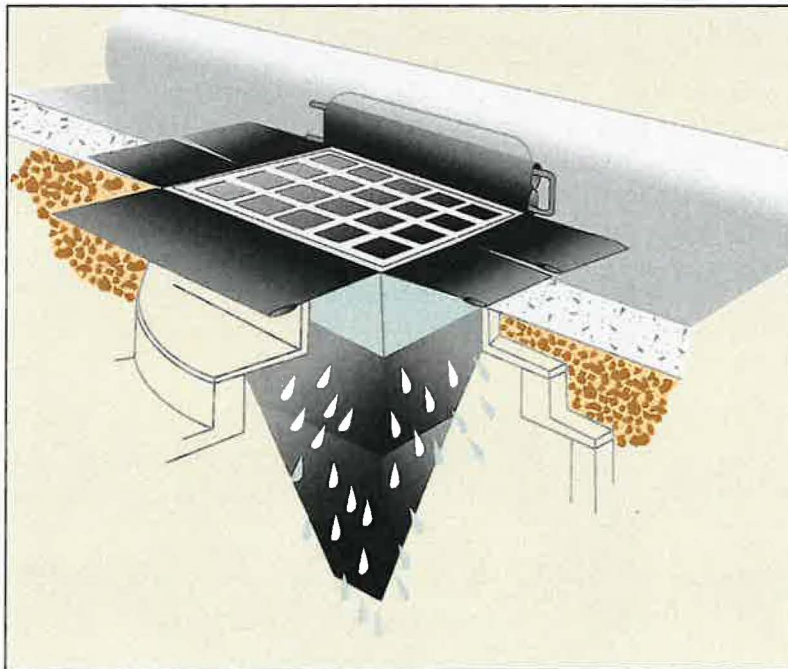
## Inlets and Outlets

### Inlet Protection

Turbid (muddy) runoff that flows toward a culvert, ditch, dry well, or storm drain inlet must be slowed down and pooled to settle out and remove sediment. Inlets can be protected with compost socks, concrete blocks with a gravel filter, reinforced silt fences, manufactured catch basin insert products, or other sediment control devices. Straw bales should not be used for inlet protection. Other controls should also be used upstream to minimize erosion and sediment delivery.

- Place materials to form a small dam around the inlet.
- Build larger dams farther away from inlets with heavy incoming flows.
- When using rock, mix rock of various sizes so flows can seep through the dam slowly. If spaces between rocks are too large, runoff will move through the dam without adequate settling time.
- Ensure that inlet protection devices do not cause a safety hazard for pedestrians or vehicle traffic.

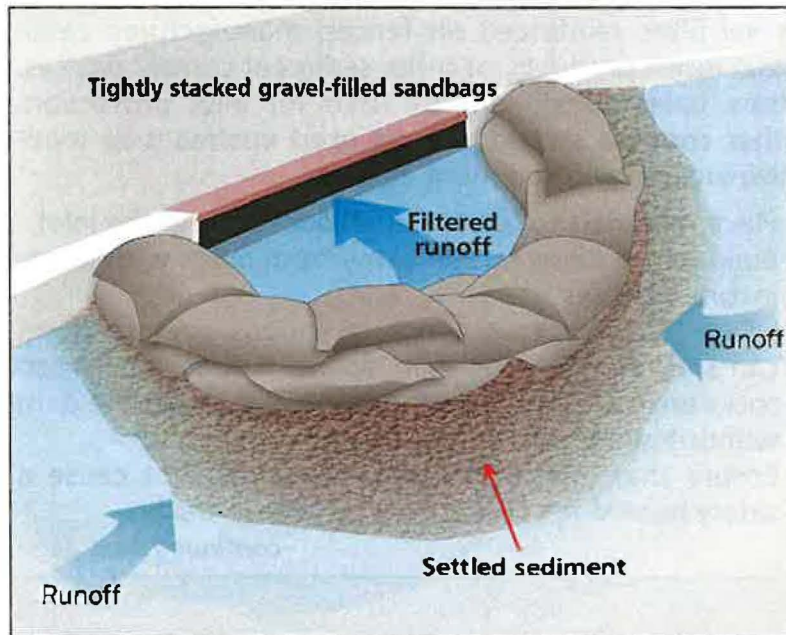
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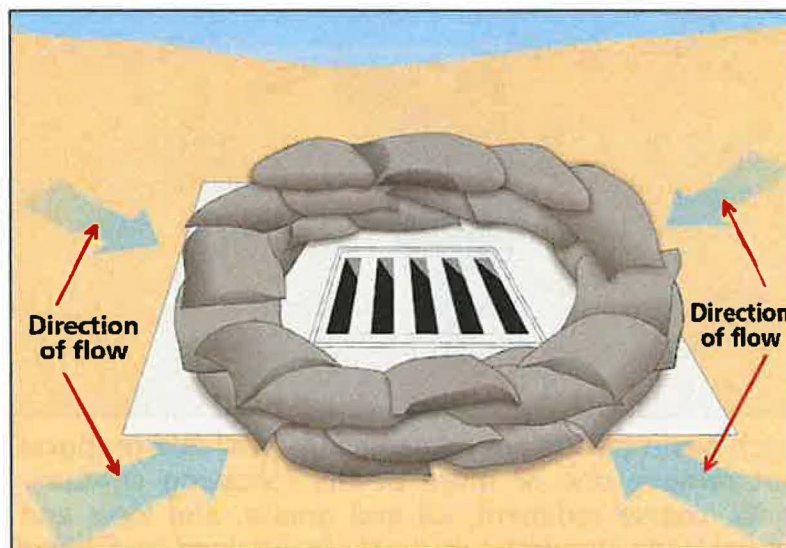
Catch basin inserts are commercially available products that remove one or more of the following contaminants: coarse sediment, oil and grease, and litter and debris. Units should be routinely maintained to achieve maximum removal efficiency.



- Accumulated sediment must be removed after each rain to ensure effectiveness.
- Place removed sediment in areas where it will not wash into inlets, ditches, channels, or streams. Do not wash sediment or any other material down curb, channel, or drain inlets.



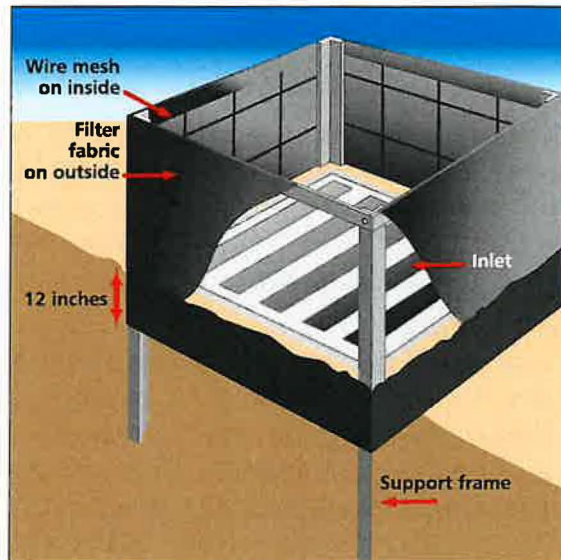
A stone-filled barrier is the most common type of protection due to the flexibility of its use. Bag barriers are constructed by placing the bags around the inlet to create a holding area that allows suspended sediment to settle. Bags need to be tightly abutted.



Gravel bags used to protect a drop inlet.

A filter fabric fence is effective in open areas where sheet flows are low and are not expected to exceed 1/2 cubic feet per second. Filter fabric fences are installed like silt fences but are constructed to surround the inlet to create an enclosure.

Use diagonal bracing on sides and/or top to protect against incoming flow pressures. Trench in the fence and securely fasten to posts.



### ***Inlet Protection Troubleshooting tips***

Condition	Common Solution
Excessive sediment accumulation behind protection device.	Remove accumulated sediment when it reaches 1/3 the barrier height or 1/3 the holding capacity. Repair bypasses and undercuts promptly.
Excessive sediment is entering the inlet.	Ensure that soil stabilization and sediment control devices are installed upstream of inlets. Ensure that the barriers around the inlet are installed correctly. Ensure that disturbed soil inside the protective device is prevented from entering drain by covering with plastic.
Sediment is bypassing silt fence.	Repair/replace fencing material and re-stake fences that are damaged. Filter fence needs to be keyed in so that water goes through filter fabric and not under it.
Material from broken bags is entering inlet.	Clean out inlet. Remove broken bags and replace as necessary.
Ponded water causes a traffic concern.	Use alternative BMPs upstream. Install below grade filter inlet.

## Inlets and Outlets

### Outlet Protection

Line outlets for storm drains, culverts, and paved channels that discharge into natural or constructed channels with rock or other armoring to prevent downstream bank and channel erosion when flow velocities are high. Dense angular rock works best.

#### Installation

- The rock-lined "apron" at the outlet must be straight (lined up with the discharging pipe or channel) and laid in flat. Bring the sides up around outlet to prevent erosion and up the banks a little to prevent scouring.
- The apron is shaped like a long triangle, with the narrow end located at the outlet and sized about 4 times the diameter of the outlet pipe.
- The width of the downstream end of the apron will be wider, tied into the channel, and vary according to the shape of the channel it empties into.
- The table below provides general information for sizing rock and outlet aprons for various sized pipes. Follow the maximum suggested sizing criteria for outlets that discharge high flows.

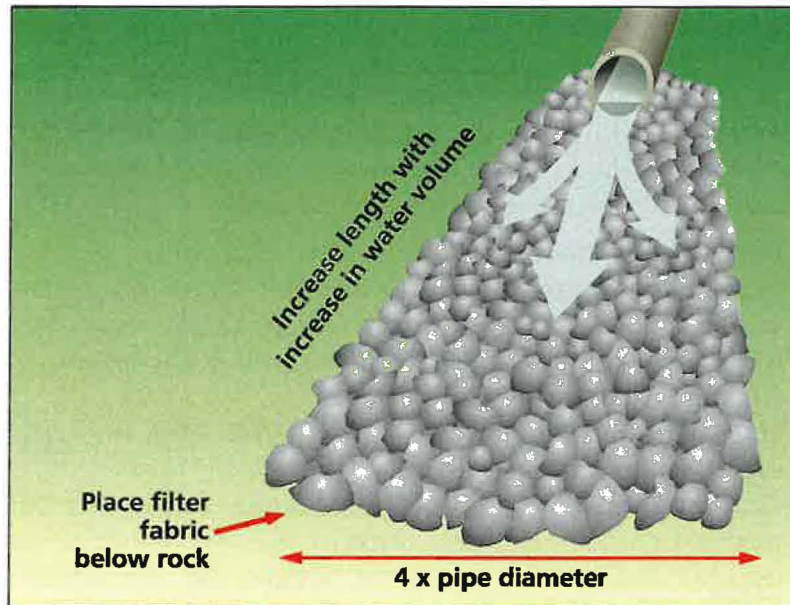
#### Sizing for culvert outlet

Culvert size	Avg. rock diameter	Apron width*	Apron length (Slow flow culverts)	Apron Length (High flow culverts)
8 in	3 in	2-3 ft	3-5 ft	5-7 ft
12 in	5 in	3-4 ft	4-6 ft	8-12 ft
18 in	8 in	4-6 ft	6-8 ft	12-18 ft
24 in	10 in	6-8 ft	8-12 ft	18-22 ft
30 in	12 in	8-10 ft	12-14 ft	22-28 ft
36 in	14 in	10-12 ft	14-16 ft	28-32 ft
42 in	16 in	12-14 ft	16-18 ft	32-38 ft
48 in	20 in	14-16 ft	18-25 ft	38-44 ft

\* Apron width at the narrow end (pipe or channel outlet)

If the culvert outlet and receiving channel do not line up straight, the channel bank receiving the brunt of the outlet flow must be lined or it will erode quickly. If rock will be used, double the average diameter when sizing the rock needed. Gabion baskets – galvanized wire mesh boxes filled with rock – are often used in this situation, and can be stacked to form a wall if necessary.





### **Outlet Protection** **Troubleshooting tips**

Condition	Common Solution
Riprap washes away.	Replace riprap with a larger diameter rock based on the pipe diameter and discharge velocity.
Apron is displaced.	Align apron with receiving water and keep it straight throughout its length. Repair fabric and replace riprap that has washed away.
Scour occurs around apron or riprap.	Repair damage to slopes or underlying filter fabric.
Outlet erodes.	Stabilize outlets; replace lost riprap; grout riprap.

## **Inlets and Outlets**

### **Saw Cutting Operations**

Prevent or reduce the discharge of pollutants from saw cutting operations using measures to prevent runoff and runoff, and properly disposing of wastes.

- Reschedule activities if rain is likely to occur.
- Do not allow saw-cut slurry to enter storm drains or watercourses. Cover all storm drain inlets near the work with mats to prevent any slurry from entering the inlets.
- Use as little cooling water as possible and turn off water when not cutting.
- Gravel bags can be placed perpendicular to the curb to create an area to capture slurry.
- Residue from the operations should be vacuumed up in conjunction with the cutting and then properly disposed. There should not be any residue left on the site to become blowing dust after it has dried. Do not clean the cutting area by hosing it down.
- If saw cutting slurry enters a storm drain/natural outlet, clean it up immediately.
- Stockpile materials and wastes away from the drain inlets.

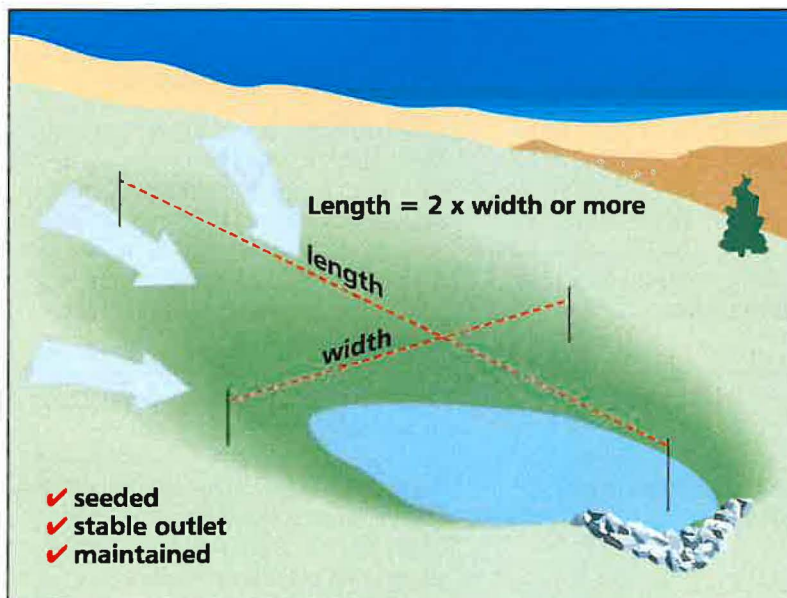


## Water Collection and Discharge Areas

### Temporary Sediment Trap

The purpose of a sediment trap is to provide an area where muddy runoff is allowed to pool, so heavier sediment will settle out.

- Any depression, swale, or low-lying place that receives muddy flows from exposed soil areas outside of a natural waterway can serve as a sediment trap.
- Sediment basins are somewhat larger than traps and are often designed to serve later as storm water treatment ponds. Sediment basins should be designed by a professional.
- Installing several small traps at strategic locations is often better than building one large basin.
- Sediment traps are installed before excavation or fill work begins.
- **Do not** depend on sediment traps alone to control sediment loss from your construction site. Use erosion controls as a first defense.
- Straw bales and silt fencing **should not** be used as containment structures for concentrated runoff flows.
- **Do not** put sediment traps in or next to flowing streams or other waterways.



### **Installation**

- The simplest approach is to dig a hole or build a berm of earth or stone where concentrated flows are present. This will help to detain runoff so sediment can settle out.
- Side slopes for the excavation or earthen containment berms are 2:1 or flatter.
- Berms are made of well-compacted clayey soil, with a height of 5 feet or less.
- Place soil fill for the berm or dam in 6 inch layers and compact.
- Seed and mulch the entire trap including the ponding area, berms, outlet, and discharge area immediately after construction.
- An overflow outlet can be made by making a notch in the containment berm and lining it with rock. Rock in the notch must be large enough to handle overflows. Stabilize downhill outlet with rock or other flow dissipaters similar to a culvert outlet.
- The overflow outlet should be at an elevation so dam will not overtop. Allow at least one foot of freeboard. Outlets must be designed to promote sheet flow of discharges onto vegetated areas if possible. If the discharge will enter a ditch or channel stabilize it with vegetation or line it.
- Inspect inlets, berms, spillway, and outlet area for erosion after each rain exceeding 1/2 inch.

### **Temporary Sediment Trap Troubleshooting tips**

Condition	Common Solution
Outlet pipe is clogged with debris.	Clean out pipe. Wrap outlet pipe with filter fabric or install fencing or trash rack around pipe to hold back larger debris particles.
Spillway erodes due to high velocity flows.	Stabilize outlet with riprap or line spillway with plastic sheeting or filter blankets.
Slope sides erode.	Stabilize slopes with rock, vegetation or equivalent method.
Accumulated sediment has built up.	Remove sediment before it fills half the trap or basin volume. Repair gullied areas and any upslope areas contributing large volumes of sediment.
Drainage area is too large.	Ensure that the trap is designed to accommodate the inflow for the designed storm. Limit drainage contributing area. Consider additional controls.

## Water Collection and Discharge Areas

### Dewatering

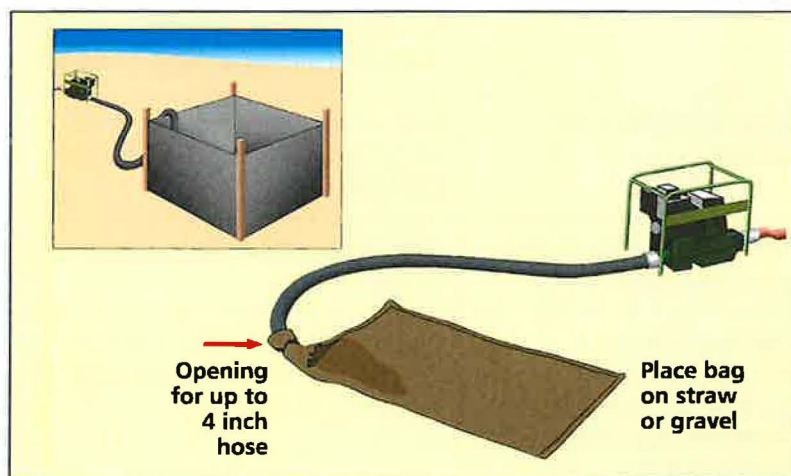
Muddy (turbid) water pumped from collection basins or other areas cannot be discharged into storm drains, bare ditches, streams, lakes, or wetlands unless sediment is removed prior to discharge. Options include:

- Retaining the water on site for construction use or allowing water to evaporate/infiltrate.
- Discharging to the sanitary sewer with permission from the local agency,
- Discharging to adjacent land or drainage facility with permission of the owner,
- Having the water transported and disposed of offsite.

Filter or settle water to remove sediment before discharge. Polluted water **should not** be discharged. Options include the following:

- Containment in a sediment basin or trap for a minimum of 4 hours or until water is clear.
- Pumping to a settling tank with sampling ports.
- Filtering through a sieve or other filter media (swimming pool filter). Simple on-site filter systems can be constructed by wrapping the ends of the suction and discharge pipes with filter fabric; discharging through a series of drums filled with successively finer gravel and sand; and other filtering techniques like those described in the inlet protection section.
- Manufactured bags. The sediment bags are placed on a stabilized area over dense vegetation, straw, or gravel and water is pumped into an opening in the bag using a low volume pump. The water flows from

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inside of the bag, through the filter cloth, and out onto the ground. These systems do not always work on fine clay soils.

Line or otherwise protect the flow path in some way to prevent mobilization of additional sediment. Dry and reuse filtered material on site in a mixture with other site soils or dispose of appropriately based on nature and levels of any contaminants present.

A permit or letter of authorization with discharge restrictions may be required for discharge to the storm drain system. Consider managing dewatering without discharge to a storm drain or receiving water.

### ***Dewatering Troubleshooting tips***

Condition	Common Solution
Sediment laden discharge is escaping around the hose insert of sediment bag.	Cease pumping and insert discharge hose further into bag. Re-tie bag around the discharge hose to create a tight seal. Periodically check this connection.
Sediment bag is not dewatering efficiently.	Remove and replace bag and dispose of bag properly.
Discharge from outlet is becoming sediment laden once it discharges on the ground.	Relocate tank to a stabilized area or place on plastic sheeting to convey discharge to stabilized area.
Discharge of treated water causes erosion.	Install outlet protection.
Filter is clogged.	Check filtering devices frequently to make sure they are unclogged and operating correctly. Adjustments may be needed depending on the amount of sediment in the water being pumping.
Treatment unit fills with sediment.	Remove sediment when unit reaches 1/3 its capacity to preserve settling efficiency.
Dewatering discharge flow is higher than expected.	Alter the treatment unit to handle increased flow.
Water spread on the construction site is not infiltrating fast enough and is entering the storm drain system or receiving water.	Stop dewatering. Install a sediment treatment system and test discharge as necessary.

## Top 10 Compliance Problems

Condition	Common Solution
Too much soil exposed at one time	<ul style="list-style-type: none"> <li>• Limit the amount of disturbed area to what is absolutely necessary to meet schedule</li> <li>• Stabilize disturbed area or stockpiles not worked within 14 days</li> </ul>
Missing or misunderstood sediment controls	<ul style="list-style-type: none"> <li>• Use with erosion controls</li> <li>• Place properly</li> </ul>
Poor management of temporary stockpiles	<ul style="list-style-type: none"> <li>• Stabilize with seed or other cover when not worked within 14 days</li> <li>• Surround by sediment controls</li> <li>• Place stockpiles in appropriate areas</li> </ul>
No inlet protection	<ul style="list-style-type: none"> <li>• Install and maintain controls to protect catch basins and dry wells</li> </ul>
Vehicle tracking onto roads	<ul style="list-style-type: none"> <li>• Use gravel pads, wash racks, and wheel or truck washes</li> </ul>
Improper solid or hazardous waste management	<ul style="list-style-type: none"> <li>• Use good housekeeping practices</li> <li>• Provide containment for liquid/hazardous materials and waste</li> </ul>
Dewatering and other pollutant discharges	<ul style="list-style-type: none"> <li>• Dirty water should be filtered or allowed to settle</li> </ul>
Poorly managed washouts (concrete, paint, stucco)	<ul style="list-style-type: none"> <li>• Highlight use of washouts during weekly construction meetings</li> <li>• Clearly mark and size washouts adequately</li> <li>• Be sure to clean out in a timely fashion</li> <li>• For large pours, supply multiple washouts</li> </ul>
Inadequate BMP maintenance	<ul style="list-style-type: none"> <li>• Inspect BMPs frequently</li> <li>• Maintain BMPs when not working or when damaged</li> </ul>
Inadequate records or training	<ul style="list-style-type: none"> <li>• Keep copies of NOI, SWPPP and SWPPP updates, and inspection records onsite</li> <li>• Provide BMP installation and maintenance training</li> </ul>



## Resources

**IDEQ Storm Water Site:**

<https://www.deq.idaho.gov/water-quality/wastewater/storm-water/>

**IDEQ E-Permitting Site:**

<https://www2.deq.idaho.gov/water/IPDES/>

**IDEQ Storm Water Protection Site:**

<https://www2.deq.idaho.gov/water/swpag/?type=source&id=114>

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