Stormwater Management Plan (SWMP)

For Construction Activities At:

Black Hills Colorado Gas Inc.– Mayberry Communities 6" Main Extension
El Paso County, Colorado

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Engineering Review
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EPC Planning & Community Development Department

SWMP Prepared for:

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STORMWATER MANAGEMENT PLAN SIGNATORY CERTIFICATION

Apex Companies, LLC prepared this Stormwater Management Plan (SWMP) on behalf of Black Hills Energy (BHE) for the associated construction activities of the Mayberry Communities 6" Main Extension (Project), in El Paso County, Colorado.

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

Signature _____ Date 12/7/2021

Name: Austin Belcher

Title: Sr. Environmental Professional
Black Hills Energy

SWMP MODIFICATIONS

Modifications to this SWMP will be made as required or at the request of the Colorado Department of Public Health and Environment (CDPHE). This SWMP can be modified at any time that it is judged appropriate to meet stormwater management objectives. Typically, modifications are made when:

- There is a change in construction plans, stormwater control measures, or pollution prevention measures which subsequently make changes to your construction plans.
- There is a change in the project schedule.
- Conditions occur or develop which con be reasonably expected to significantly impact stormwater discharges from the construction area(s).
- There is a change to the nature of pollutants discharged in stormwater.

Modifications will be made within 7 days of the occurrence or completion of the action warranting revision. Changes will be incorporated by appropriately dated modifications, additions, or attachments, and inserted into this plan with the date and revision number noted on the top of the applicable page(s). Documentation of modification shall be captured in the table below. Additional copies shall be made, as needed.

Rev. #	Description of Modification	Date of Modification	Modification Prepared by [Name(s) and Title(s)]
1	Modifications Section 4.1.12, and Section 5.4, per El Paso County review #1.	11/16/2021	David Cummings P.E. – Project Manager – Apex Companies, LLC

COMPLIANCE ACTION CHECKLIST

Pre-Construction

- ☐ Finalize Alignments & Engineering Drawings
- ☐ Install Stormwater Control Measures at Specific Locations. Update Control Measure / BMP list (Section 2.4 & 3) and add to Site Maps (Appendix B)
- ☐ Sign this SWMP/SWPPP (Page iv)
- ☐ Delegate SWMP/SWPPP Authority (Section 1)
- ☐ Place a hardcopy of SWMP/SWPPP onsite

During Construction

- ☐ Implement and maintain Erosion & Sediment Controls (Section 5)
- ☐ Inspections: Every 14 calendar days and after precipitation events (Section 7)
- ☐ Visual Stormwater Monitoring (Section 2.3.2), *if necessary*
- ☐ Corrective Action Documentation (Section 7)
- ☐ Notification of Spills (Section 4.1.14), *if necessary*
- ☐ Provide temporary or permanent stabilization to areas if work is complete or stopped for more than 14 days. (Section 5)

Post Construction

- ☐ Monthly Inspections until Final Stabilization (Section 2 & Section 6)
- ☐ Meet Final Stabilization Requirements (Section 6.3)
- ☐ Submit NOT (Section 7.1.3)
- ☐ Retain copy of SWMP/SWPPP for 3 year following submittal of NOT

INTRODUCTION

On behalf of Black Hills Energy, (BHE), Apex Companies, LLC (Apex) has prepared this stormwater management plan (SWMP) to be used during construction of the **Mayberry Communities 6" Main Extension (Project)in El Paso County, Colorado**. This SWMP was prepared in accordance with good engineering, hydrologic, and pollution control practices to ensure that stormwater control measures are selected, installed, implemented, and maintained to protect state waters. A review of this narrative, or additions to the SWMP, will be required anytime there are changes in stormwater control measure(s) implementation, pollution sources, implementation of a new or revised control measure, or if the SWMP proves to be ineffective in achieving the general objectives of controlling pollutants in stormwater discharges. As a condition of the Colorado Discharge Permit System (CDPS) permit, the provisions identified in the SWMP will be implemented as written, and updated as needed, from commencement of construction activity until final stabilization is complete.

This document contains the required elements of a SWMP associated with construction activities for the Project, as defined in the CDPS General Permit for Stormwater Discharges Associated with Construction Activity, Authorization to Discharge under the CDPS (General Permit No. COR400000, effective April 1, 2019). A copy of the permit certification issued by Colorado Department of Public Health and Environment (CDPHE) for this Project is provided in Appendix A.

1. QUALIFIED STORWMATER MANAGER & SWMP TEAM

The Qualified Stormwater Manager is responsible for implementing, maintaining, and revising the plan. The Qualified Stormwater Manager will be the contact for all stormwater-related issues, and is responsible for its accuracy, completeness, and implementation. Additionally, Black Hills Energy will assign each subcontractor the responsibility to implement, maintain, and manage stormwater control measures appropriate for/to the construction phasing of the Project. Onsite workers will be instructed to direct regulatory inspectors to the Operations Manager. The Qualified Stormwater Manager will accompany regulatory inspectors during any Project inspections.

The Operations Manager will ensure that the SWMP is followed and delegates responsibility for coordination of inspections and maintenance of stormwater records to the SMWP Administrator. The Operations Manager and Site Contact are responsible for implementation of the SWMP. The Qualified Stormwater Manager is responsible for SWMP inspections.

Both the Operations Manager and the SWMP Administrator will manage the SWMP Team and provide support to the Site Contact regarding stormwater compliance requirements. SWMP Team contact information and personnel identification is provided in the following table:

SWMP Team Contacts				
Operations Manager	Austin Belcher – Sr. Environmental Professional	Black Hills Energy	M: (719) 393-6639 O: (719) 666-1716	Austin.Belcher@blackhillscorp.com
Site Contact	Santiago Tijerina	Black Hills Energy	M: (719) 243-8329	Santiago.Tijerina@blackhillscorp.com
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Additional personnel may assist in stormwater inspections and maintenance of records, as delegated by the Operations Manager. Overall, the SWMP Team is responsible for:

- Implementing all spill clean-up procedures;
- Notifying local authorities and residents of reportable releases;
- Coordinating various stages of stormwater control measures implementation;
- Conducting / coordinating inspections;
- Maintaining all records; and,
- Coordinating a preventive maintenance program and housekeeping measures.

The inspector(s) shall be trained in accordance with SWMP requirements and under the supervision of the SWMP Administrator. The inspector(s) will maintain the site-specific information and revise the SWMP as

needed. Additionally, the inspector will coordinate stormwater control measure(s) installation and maintenance in accordance with good engineering, hydrologic, and pollution control practices.

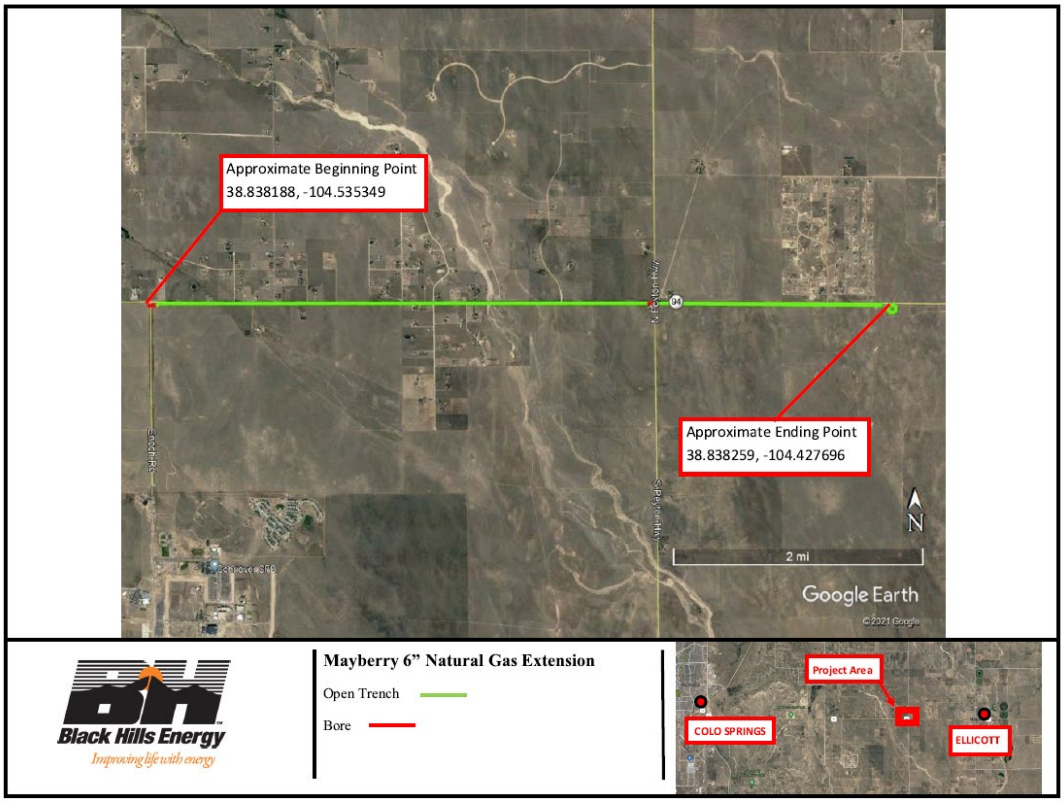
2. PROJECT INFORMATION

2.1 Site Description

The Project is located in semi-arid El Paso County, Colorado, west of Colorado Springs, Colorado, along State Highway 94. The Project shall consist of construction of an approximately 6-mile long 6" natural gas pipeline and related infrastructure. A laydown yard will be established for staging materials, equipment, and construction personnel. Primary access to the Project laydown is off HWY 94. Segment-specific site maps and plans are provided in Appendix B. A vicinity map is shown below as Figure 1.

- Approximate Latitude/Longitude for laydown yard: 38.837780, -104.428302°
- Total land disturbed for the purpose of construction and installation is approximately 32-acres, accounting for temporary workspace, Project easement, and a laydown yard.
- Erosion, and sediment control measures shall be installed and maintained throughout the life of the Project. Site-specific maps with proposed control measure(s) placement are stored electronically. Initial SWMP maps are provided in Appendix B, and shall be revised during each inspection, as needed, or as field conditions dictate, until construction is complete and final stabilization is achieved.

Figure 1. *Vicinity map*



2.2 Nature of Construction Activity

Construction and installation of the 6-mile pipeline will occur on private property, within a 40-ft easement.

Typical construction methods include:

- Delineation of construction easement boundaries (if applicable);
- Installation of stormwater control measures;
- Clearing, grading, excavation, horizontal directional boring under roadways or sensitive habitat, and general earthwork;
- Pipeline installation and backfill;
- Horizontal bore of pipeline; and
- Construction area housekeeping and disturbance reclamation.

2.3 Proposed Sequence of Major Activities

Construction of the Project will be completed in the following phases:

Activity[1]	Start Date	End Date
Overall Project		
Site Preparation – laydown yard construction, easement clearing, sediment control measure installation		
Construction -pipeline installation		
Final Stabilization – control measure removal, permanent seeding, backfilling to match pre-existing contours		

General construction of a pipeline is typically in sequence, and Project-wide disturbance will not all occur at the same time. The construction contractor will adhere to the following sequence of operations unless otherwise directed by the Operations Manager. Additional stormwater control measures or revisions to this sequence may be applied at the discretion of the Operations Manager and SWMP Administrator.

2.3.1 Preconstruction and Site Preparation

The preconstruction scope will focus on the installation of control measures to protect existing vegetation and surface waters, and include:

- Install erosion, and sediment control measures around designated staging areas, workspaces, laydowns, along right-of-way(s), to manage stormwater quality. Primary control measures will consist of sediment control log or similar controls at various pre-determined locations, and based upon field conditions, throughout the Project area;
- Identify and mark limits of construction and environmentally sensitive areas; and,

- Construct approved easements and/or install vehicle tracking controls at approved ingress/egress points for the Project.

2.3.2 Construction

During the construction phase, associated equipment and personnel will access the Project at approved ingress/egress points and along approved right-of-way corridors. In areas where uneven terrain limits access, temporary easement(s) may be graded to promote a flat surface for safe access. The primary ground disturbing activities associated with construction include:

- Clearing and grading for the laydown yard and access road(s);
- Stringing and welding of pipe along the right-of-way and/or construction easements;
- Excavation for pipeline install and segregation of topsoil from subsurface soils;
- Pipeline installation and backfilling; and,
- Horizontal direction drilling at roadway or environmentally sensitive crossings.

Stormwater control measures will be implemented during all phases of construction to control and minimize any runoff of sediment and erosion within the construction area boundary.

Sequencing of construction activities will progress quickly and as practicable to minimize the amount of disturbed soils and exposed surface. Areas of inactivity or where ground disturbing activities cease and stockpiles are idle for greater than 14 days shall be stabilized to reduce erosion potential, slow runoff velocity and/or temporarily stabilize until final stabilization measures are implemented. All control measures will be installed in phased approach as outlined in Section 5 of this plan.

Once constructed and installed, the pipeline will be turned over to operation. Should any portions of the pipeline require maintenance, operations personnel shall travel within the defined right-of-way. If maintenance is anticipated to generate surface disturbing activities, control measures will be installed and maintained until work is complete, and final stabilization measures are implemented.

2.3.3 Final Stabilization

Upon completion of construction, all temporary control measures will be removed, and disturbed areas reclaimed for final stabilization. Reclaimed areas shall be vegetated to 70-percent of pre-disturbance cover or returned to prior land use in accordance with surface use agreements and the associated landowner(s).

Final stabilization activities during this phase are accomplished by, replacing stockpiled topsoil, compaction alleviation / surface roughening with chisel and disk, or equivalent. Areas not returned to cropland will be seeded with a mix approved by BHE, the associated landowner(s) and El Paso County. All seeded areas shall be stabilized with straw mulch which is mechanically crimped into the surface. Seeding will be done when seasonal or weather conditions are most favorable, and typically timed to take advantage of available soil moisture such as early spring, or late fall.

2.4 Area of Disturbance

The total area of disturbance is anticipated to be approximately 32 acres along the 6-mile route; however, most disturbances will not occur at the same time. All construction will be done within temporary workspace and easement along the Project. All areas of construction and their appropriate phase,

stabilization progress, and inspection schedule will be tracked as part of the SWMP and on site-specific maps in Appendix B.

2.5 Soil Description

Soil varies within the Project area and is primarily classified as loam according to the U.S. Natural Resources Conservation Service (http://websoilsurvey.nrcs.usda.gov/app/). Soil descriptions and runoff potential are tracked on segment-specific erosion, and sediment control maps, and within the Soils Reports included in Appendix B.

2.6 Existing Vegetation

Areas of surface disturbance associated with the Project sit within grassland, and irrigated cropland. Pre-disturbance ground cover will be surveyed and documented during the initial inspection.

2.7 Receiving Waters and Discharge Information

Discharge information is included on the table below. This information was obtained using the United States Geologic Survey (USGS) National Hydrography Dataset (NHD) and Watershed Boundary Dataset (WBD) only Hydrography Viewer. Receiving waters are identified and tracked on the Project stormwater plans in Appendix B for the appropriate segment(s).

Stationing	Primary Receiving Water	Source Feature Identifier	Hydraulic Unit Code (HUC)	Distance to Receiving Water	First Named Water	Distance to First Named Water
Crossing on Map 1	Unnamed Stream	COARMA04c_00	110200040203	0 feet	Black Squirrel Creek	10.64 mi SE
Crossing on Map 2	Unnamed Stream	COARMA04c_00	110200040203	0 feet	Black Squirrel Creek	10.20 mi SE
Crossing on Map 7	Unnamed Stream	COARMA04c_00	110200040203	0 feet	Black Squirrel Creek	8.86 mi SE
Crossing on Map 8	Unnamed Stream	COARMA04c_00	110200040203	0 feet	Black Squirrel Creek	8.40 mi SE

Discharged stormwater will be received by several unnamed ditches/canals, arroyos, ephemeral streams and tributaries, as well as named creeks which ultimately drain into the Black Squirrel Creek, and the Arkansas River. At the time of completion of this SWMP, the nearest named water segment is not listed as impaired. This was confirmed through review of the CDPHE Water Quality Control Division (WQCD) 2012 3030(d) List of Impaired Waterbodies.

Receiving waters are identified and tracked on the stormwater maps for the appropriate segment. The Project does not encroach on wetland acreage. If encountered or required, all wetland impacts, both

temporary and permanent, will be permitted prior to construction and as necessary with the United States Army Corps of Engineers (USACE).

2.8 Non-Stormwater Discharges

The following is a summary list of non-stormwater discharges which are allowed under the stormwater permit:

- Discharges from emergency fire-fighting activities or a fire hydrant;
- Landscape irrigation or return flow;
- Uncontaminated springs which do not originate from an area of land disturbance; and,
- Construction dewatering.

In the event construction dewatering is required, the following conditions shall be followed:

- Erosion, and sediment control measures will be installed;
- The discharge will not leave the site as surface runoff, to surface waters, or to storm sewer systems;
- The groundwater being pumped will not be contaminated so as to exceed state groundwater standards; and,
- If the construction dewatering activity cannot meet these conditions, the appropriate permitting will be completed through the state. Additional dewatering information is provided in the Groundwater and Stormwater Dewatering section, below, as well as in Appendix C.

The construction contractor may encounter unanticipated groundwater and/or stormwater in excavations. Dewatering locations, erosion, and sediment control measures will be indicated on site maps and will follow the conditions outlined above.

2.9 Groundwater and Stormwater Dewatering

Construction dewatering may take place on a limited basis. The general permit for stormwater discharges associated with construction activities allows for conditional discharge of construction dewatering to the ground (to infiltrate), however, no groundwater from construction dewatering can be discharged as surface runoff or to surface waters. If dewatering occurs, it will be identified in site-specific SWMP maps, and will follow the Colorado Water Quality Control Commission (WQCC) Low Risk Discharge Guidance for Uncontaminated Groundwater to Land (WQP27), provided in Appendix C, or a separate permit shall be obtained.

3. SITE MAPS

Stormwater, erosion, and sediment control maps for the Project are provided in Appendix B. Maps will be stored and maintained by the Operations Manager and SWMP Administrator. Site maps are reviewed at every inspection interval and updated when there are changes in erosion, and sediment control measure(s), pollution sources, or disturbed areas. These maps are dated and archived separately to document changes over time. The management of site maps adheres to the approach of maintaining the SWMP as a living document, reflecting all changes to field conditions, as construction and subsequent stabilization progresses.

Site-specific maps will include, at a minimum, the following:

- Construction site boundaries and route alignment;
- Flow arrows that depict stormwater flow direction(s) on-site, and runoff direction(s);
- Project ingress/egress and dedicated access routes;
- All areas of ground surface disturbance, including cut and fill;
- Areas used for storage of building materials, equipment, soil, or waste;
- Locations of all waste accumulation areas, including areas for liquid, concrete, masonry and asphalt (if applicable);
- Locations of dedicated asphalt or concrete batch plants (if applicable);
- Locations of all structural control measures;
- Locations of all non-structural control measures, as applicable;
- Locations of all stream crossings located within the Project area and construction boundary;
- Location of springs, streams, wetlands, diversions and other state waters, including areas that require pre-existing vegetation be maintained within 50 feet of a receiving water, where determined feasible; and,
- Locations where alternative temporary stabilization schedules apply.

4. POLLUTION PREVENTION STANDARDS AND MATERIALS HANDLING

4.1 Identification of Potential Sources of Pollution

To identify, evaluate, and assess potential sources of stormwater runoff pollutants that may exist, the following activities and pollutant sources were evaluated, and if present, will be displayed on site-specific maps:

4.1.1 Disturbed and Stored Soils

Disturbed soils and any excavated materials will always be stored within the construction area boundary. Topsoil may be used to create windrows on the downgradient side of the work areas, as needed. Excavation in sensitive areas may be conducted using special techniques as specified by the landowner/agency representative, and as permitted.

All excavated materials will be utilized as backfill when practical, and in accordance with the engineering specifications. Disturbances made in steep or rolling terrain during construction will be re-graded and contoured to blend into the adjoining landscape. Natural drainage patterns will be reestablished to as near pre-disturbance levels as possible.

Temporary workspace areas will be restored to as near pre-construction conditions as possible, following completion of construction.

4.1.2 Vehicle Tracking of Sediments

Access to the Project laydown yard will be off State HWY 94. An aggregate vehicle tracking control will be installed at the laydown yard ingress/egress point to manage and maintain sediment transport by vehicle tracking. Vehicle tracking control specifications can be found in Appendix D.

Additional access for pipeline construction will be along temporary easement through private land, as well as along existing roadways within the Project area. Additional control measures will be installed to manage vehicle and/or equipment tracking from paved and unpaved surfaces where the potential for tracking exists, as needed.

4.1.3 Management of Contaminated Soils

If contaminated soils, staining, debris, strong odor or similar are encountered or identified, proper control measures will be deployed to contain the area and minimize additional impacts. Contaminated material will be excavated and disposed of at an approved facility as soon as possible. Following completion of excavation and disposal, and if determined necessary, soil sampling will be conducted to confirm all impacts have been removed, and excavated areas backfilled.

4.1.4 Loading and Unloading Operations

Loading and unloading operations are generally associated with potential spills during delivery and unloading of materials within the Project area. If a spill occurs, protocol outlined in Section 4.1.13 and Section 4.1.14 will be followed.

4.1.5 Outdoor Storage Activities

Materials stored at the Project laydown yard present the potential for spills and leaks. Generally sized secondary containment for fuels and chemicals, keeping containers closed and sealed, and use of designated storage areas (covered where applicable) shall be implemented at the laydown yard to minimize the impact of construction activities on stormwater. Safety Data Sheets (SDS) for materials used will be available upon request.

4.1.6 Vehicle and Equipment Maintenance and Fueling

Limited vehicle and equipment maintenance and fueling is expected to occur throughout the Project area. All fueling, re-fueling, and maintenance shall occur at the Project laydown yard, and within designated areas along the right-of-way. Fuel tanks or trucks stored within the Project area shall be protected by secondary containment or within double-walled, self-containing vessels. An operator with adequate spill response materials shall always be present during fueling operations to minimize the chance of leaks, spills, overtopping or similar.

4.1.7 Significant Dust or Particulate Generating Processes

Dust and/or particulates generated from vehicle and equipment traffic exists throughout the life of construction in the form of fugitive emissions. Dust and particulate generation are highest during dry and hot times of the year. If dust from vehicle or equipment traffic becomes significant, dust suppression measures such as water application or limiting construction activities will be enforced. Stockpiles and disturbed soils shall be stabilized appropriately after completion of construction to minimize silt suspension and sediment transport by wind.

4.1.8 Routine Maintenance Activities Involving Fertilizers, Pesticides, Detergents, Fuels, Solvents, Oil, etc.

Secondary containment shall be used during maintenance activities (e.g. pigging of pipelines, transformer maintenance, etc.), if applicable. Fertilizers, pesticides, detergents, solvents, and oil are not anticipated for this Project.

4.1.9 On-site Waste Management Practices

Construction and domestic waste, including packaging materials, scrap construction materials, masonry products, timber, pipe and electrical cuttings, plastics, polystyrene foam, concrete, and other trash or building materials will be stored and managed at the laydown yard. All waste generated on-site shall be placed in designated waste containers (e.g. dumpster, trash receptacle, trash bag) of sufficient size and number to contain all anticipated wastes. Waste containers shall be covered and/or lids closed when not in use. The Project area and laydown yard shall be inspected and cleaned/picked throughout, and at the end of, each business day. Waste containers will be emptied, and materials disposed of, proactively and as needed to eliminate overflow.

4.1.10 Concrete Truck Washing

Concrete truck/equipment washing, including the concrete truck chute and associated fixtures and equipment, is not typically used for this type of construction. If concrete is used, a designated concrete

washout will be installed and used. Alternatively, trucks will be sent back their supply facility, where permanent washout equipment exists.

4.1.11 Dedicated Concrete and Asphalt Batch Plants

Concrete and asphalt batch plants will not be used for the Project.

4.1.12 Non-Industrial Waste Sources

All waste from materials imported to the construction site will be placed in appropriate containment and then removed for disposal / recycling at a licensed facility. This also includes sanitary sewage facilities (typically portable), which will be placed, anchored, and maintained with proper care. Portable toilets will be located a minimum of 10ft from stormwater inlets and 50ft from state waters. They will be secured at all four corners to prevent overturning, cleaned on a weekly basis., will be inspected daily for spills.

4.1.13 Potential Spills

The potential for minor spills or leaks exists on the Project and will typically be handled by the associated contractor(s). The Operations Manager shall be notified of all spills associated with the Project. Contractor personnel must conduct spill prevention training, including procedures for routine handling of products, loading, and unloading operations.

As part of the preventive maintenance program, contractor's personnel will conduct routine inspections for good housekeeping, operation and maintenance concerns, and the condition of structural control measures such as generally sized secondary containment, specifically around tanks and containers.

The Operations Manager or the duly authorized representative will manage spills and other environmental emergencies. If a spill occurs, protocol outlined Section 4.1.14 of this SWMP shall be followed.

4.1.14 Spill Prevention, Response and Notification

Discharge(s) of hazardous substances or oil resulting from spills or construction operations are not authorized under the Construction General Permit or the plan. Inadvertent spills shall be cleaned up immediately upon discovery, and the materials disposed of in accordance with local, state, and federal requirements. Vehicles and equipment shall be properly maintained to prevent leaks. The operator should have spill kits available on site and in the laydown yard for rapid deployment to contain and cleanup spills and leaks.

In the event of a spill, notify the Operations Manager immediately. Depending on the nature of the spill and material involved, the Operations Manager or their duly authorized representative will:

- Notify the Colorado Department of Public Health and Environment at the 24-hour spill reporting line: 877-518-5608; and,
- Notify downstream water users, as necessary.

5. EROSION AND SEDIMENT CONTROLS

Erosion and sediment management will be accomplished through a combination of construction techniques, vegetation and re-vegetation, administrative controls, and structural and non-structural control measures. Selection of control measures varies and is dependent on area and site-specific conditions (e.g. construction, existing vegetation, and precipitation). Specifications and fact sheets for structural control measures, discussed below, are provided in the Stormwater Management Plans (Appendix B) and the Stormwater Control Measure / BMP Manual (Appendix D).

5.1 Structural Erosion Control Measures

Pipeline construction and installation requires the removal of vegetative cover and topsoil, thereby increasing the potential for erosion. Existing vegetation shall be protected to the greatest extent practicable, and vegetation removal shall occur only as deemed necessary for the operation of equipment and construction activities. Erosion control will be accomplished by using all or combinations of various erosion control methods. These methods generally include:

- Diversion of stormwater run-on / runoff;
- Check dams to reduce velocity of stormwater flow in channelized areas;
- Surface roughening to temporarily stabilize disturbances during construction;
- Wind erosion and dust control, such as water application, to minimize sediment suspension and migration during seasonal hot and dry periods of construction;
- Rolled erosion control products, such as erosion control blanketing (ECB) and turf reinforcement mats (TRM);
- Permanent or temporary seeding / vegetation establishment; and,
- Application and maintenance of mulches, tackifiers, or rolled erosion products.

5.2 Structural Sediment Control Measures

The reduction and control of sediment-laden runoff will be accomplished by sediment control measures. Sediment control measures typically facilitate the detention of suspended particles and remove sediment by settling, filtering, or entrapment. Sediment controls used to mitigate and manage offsite sediment transport during this Project include the following:

- Sediment control logs (SCL) / straw wattles;
- Earthen dikes and drainage swales;
- Brush barrier and windrow to contain areas of disturbance;
- Vehicle tracking controls at ingress/egress points;
- Vegetated buffers;
- Culverts; and,
- Inlet and outlet protection.

5.3 Non-Structural Controls and Site Management Practices

Non-structural control measures are intended to reduce the generation and accumulation of pollutants from construction activities associated with the Project. Site management practices, such as planning, implementation, and training shall be assigned to all parties associated with the Project. General non-structural control measures will be deployed, as needed, and generally include:

- Construction phasing to minimize disturbance area(s) to the greatest extent practicable to limit the amount of soil exposure throughout the Project area; thus, temporary workspaces and permitted easement(s) may not be utilized entirely;
- Sweeping of paved roads which may intersect or abut Project ingress/egress access points;
- Maintenance of pre-existing vegetation within 50 horizontal feet of receiving waters or equivalent control measures will be utilized throughout the Project, unless infeasible;
- Grading and excavating, including cut and fill techniques, will be kept to a minimum to protect local resources while providing a safe and stable plane for equipment;
- During reclamation, any cut and fill slopes in steep terrain will be re-graded and contoured to blend into the adjoining landscape. Natural drainage patterns will be reestablished;
- Disturbed areas will be revegetated with the installation of an approved seed mix and straw mulch; and,
- Good housekeeping practices will take place when handling and storing materials and waste.

5.4 Phased Implementation of Control Measures

Control measures for the Project will be in accordance with the phases of construction and installed prior to the start of surface disturbing activities. Clearing, grubbing, excavation, drilling/augering, backfilling, and reclamation will be occurring concurrently along various segments of the Project. Open excavations will be minimized and backfilled as soon as practicable.

Stormwater management during construction generally focuses on sediment control measures associated with disturbed areas. During this phase, stormwater runoff is managed to prevent erosion or sediment transport from leaving the construction area boundary. Sediment control measure examples include:

- Equipment storage within the designated laydown yard and staging area;
- Windrow topsoil on both the upgradient and downgradient side of workspaces to serve as a run-on and run-off control measure, as well as ensure topsoil preservation;
- Compactions of, or containment for, all stockpiles associated with the Project;
- Sediment control logs, or equivalent, on the downgradient side of temporary work spaces, drainage crossings, and sediment control, as needed;
- Additional sediment control measures when near waterways or environmentally sensitive areas to segregate operations for protected spaces; and,
- Temporary stabilization control measures for areas where construction or surface disturbance has ceased for 14 calendar days or greater, and until reclamation occurs.

Depending upon the type of site, the site terrain, and the phase of construction, different stormwater control measures will be utilized. Various structural control measure options are listed in Appendix D.

This Project does not rely upon, nor will it implement, stormwater control measures owned or operated by separate entities. All control measures installed and maintained during the Mayberry Communities 6" Main Extension, will be installed, maintained, and removed, by Black Hills Energy, or their designee.

6. FINAL STABILIZATION AND LONG-TERM STORMWATER MANAGEMENT

6.1. Reclamation

Unless otherwise directed by the landowner or a jurisdictional authority, rocks, cut vegetation, and other surface material temporarily stockpiled during construction will be redistributed as backfill on the Project area. During reclamation, sediment control measures may remain in use until final stabilization is achieved.

Disturbed areas will be seeded using seed mixes appropriate to the location as indicated in contractor communications with Black Hills Energy and the associated surface owner, unless the surface owner wishes to return the land to agricultural production. Local soil conservation authorities with the U.S. Natural Resources Conservation Service, surface owners, and/or reclamation contractors familiar with the area may be consulted regarding other seed mixes to be utilized.

Reclamation will be accomplished by contouring disturbed soils to conform to the surrounding terrain, replacing any stockpiled topsoil, seeding, and mulching of disturbed soil areas in order to re-establish vegetative cover. In some cases, the disturbance will be furrowed and returned to the surface owner's land use and control if the pre-disturbance vegetation was cropland or similar.

Seeding will be done when seasonal or weather conditions are most favorable according to schedules identified by the jurisdictional authority, reclamation contractor, or landowner. Whenever possible, seeding will be timed to take advantage of moisture, such as early spring or late fall (to benefit from subsequent winter precipitation).

Seed mixes will be planted in the amount specified by manufacturer and contractor bid agreements. Straw mulch will be applied during re-vegetation, as appropriate. Where straw or hay mulch is applied, the mulch will be crimped into the soil.

The need for fertilizers and amendments will be determined in conjunction with reclamation contractor(s), or land use agreements. If fertilization is necessary, the rates of application will be based on site-specific requirements of the soil.

When final stabilization is complete, or when reclamation is achieved along a specific segment of the Project, inspections will be discontinued, and that portion of the Project will be removed from the stormwater inspection program.

6.2. Post Construction Control Measures

The Project will generally not require post-construction stormwater control measures other than permanent seeding or re-vegetation.

6.3. Final Stabilization

The WQCD General Permit for Stormwater Discharges Associated with Construction Activity describes final stabilization as the point "*when all ground disturbing activities at the site have been completed and all disturbed areas have been either built on, paved, or a uniform vegetative cover has been established with an individual plant and density of at least 70 percent of pre-disturbance levels, and the vegetation cover is capable of providing erosion control equivalent to pre-existing conditions, or equivalent permanent, physical erosion reduction methods have been employed.*"

7. INSPECTION AND MAINTENANCE PROCEDURES

7.1 Inspections

Routine inspections will be conducted to document the status of stormwater control measures, construction status, evaluate pollution sources, and document reclamation / final stabilization progress. Inspections will be managed by the Operations Manager and SWMP Administrator and conducted by their designated representative(s). Inspection forms will document non-compliance conditions, including any uncontrolled releases of sediment or other contaminants, additional control measures that are needed, or repair and maintenance issues. Required actions or modifications will be implemented as soon as possible, immediately in most cases, to minimize the discharge of pollutants. Routine inspections will be conducted along access roads and workspaces during all phases of construction. Inspection records will be provided in a standardized format that will include a signature line for the inspector to ensure Project / site compliance.

For management of inspection schedules, construction sites have been divided into three stormwater inspection stages: active construction, completed construction, and final stabilization. Each of these stormwater inspection stages is discussed below. Once a completed site meets the definition of final stabilization or has been returned to the surface owner for agricultural uses, it will no longer be inspected, and all site-specific temporary control measures will be removed.

Personnel responsible for inspections will be trained to evaluate stormwater management concerns, stormwater control measures, and to quantitatively evaluate final stabilization / revegetation success. A final inspection will be performed prior to removing the site from the inspection schedule.

7.1.1 Active Construction

The construction phase of work is classified as the "active stage". The inspection frequency shall be at least every 7 calendar days during active construction, or once every 14 calendar days and after a runoff event causing surface erosion, as required for permit compliance. The construction boundary, disturbed areas, and any stored materials that are exposed to precipitation will be inspected for evidence of, or the potential for, pollutants to possibly enter the drainage system. Stormwater control measures identified in inspections and site maps will be inspected to ensure they are in good condition and operating properly.

7.1.2 Completed Construction

For portions of the Project that meet the following criteria, but final stabilization is not achieved due to a vegetative cover that has not become established, an inspection will be conducted at least once every 30 days. This reduced inspection schedule is ***only*** allowed if:

- All construction activities that will result in surface disturbance are completed;
- All activities required for final stabilization, in accordance with the SWMP, have been completed, with the exception of the application of seed that has not occurred due to seasonal conditions or the necessity for additional seed application to augment previous efforts; and,
- The SWMP has been amended to indicate those areas that will be inspected in accordance with the reduced schedule. However, because slopes and other disturbed areas are often not vegetated, erosion in these areas can still occur which requires maintenance activities such as regrading, erosion control blankets, and seeding of problem areas. As such, inspections must

continue to maintain and address these situations. The SWMP must be amended to indicate those areas that will be inspected at this reduced frequency, Project-wide.

- Completed inspections are typically scheduled on a 28-day rotation to accommodate for inspection delays and variations in the number of days each month. For sake of clarity, completed inspections are performed *monthly*.

7.1.3 Final Stabilization and Notice of Termination

Final stabilization is typically achieved by a combination of grading, soil amendments, and seeding. When the Project, or a portion of the Project, has reached final stabilization, the area(s) will be removed from the inspection schedule. Documentation of vegetative type and cover shall be generated, inspection records archived, and Project tracking updated to indicate the area(s) finally stabilized.

When all portions of the Project are complete and final stabilization has been achieved in all reclaimed areas, a Notice of Termination (NOT) will be filed with CDPHE and local authorities, to terminate stormwater permit coverage. Inspections will cease for the Project upon completion of final stabilization and permit termination.

7.1.4 Winter Conditions

Inspections will not be required where construction activities are temporarily halted when snow cover exists on the Project for an extended period, as long as melting conditions do not exist. The following information must be documented in the inspection record for use of this exclusion: dates when snow cover occurred, date when construction activities ceased, and date melting conditions began.

7.2 Preventive Maintenance

A key element of preventive maintenance is the routine inspection and repair of erosion, and sediment control measures. Regular cleaning of structural stormwater control measures to keep them free of debris and sediment will be practiced. If applicable to the Project, spillways and culvert systems will also be routinely inspected and maintained, as needed. These maintenance procedures will help to ensure that the stormwater does not leave disturbed areas by unintended, concentrated flow.

The following preventive maintenance procedures will be implemented to reduce or eliminate potential stormwater contamination sources that may exist at a construction site:

- Storage containers, fuel tanks, and equipment used during construction activities shall be visually inspected routinely for obvious leaks. These inspections should be conducted by Project staff and contractor personnel as they perform their routine duties;
- Fuels and chemicals will be properly labeled so an enclosed substance can be quickly identified. OSHA-approved labeling and sign systems will be followed for all secondary containers;
- Damage to erosion, and sediment controls will be repaired as soon as practical, immediately in most cases;
- Areas of stained soil will be inspected to identify the source(s) of the staining. If the soil is determined to be contaminated, removal and disposal at a licensed facility will be performed; and,
- Energy dissipating material, such as riprap or sediment control logs, will be utilized to prevent erosion.

7.2.1 Good Housekeeping

Housekeeping practices include regular cleaning, organization and maintenance of equipment, and erosion, and sediment control structures throughout the Project. Areas where chemicals are stored and used at the Project should be stored in buildings or containers where there is limited potential for stormwater contact.

The following items will be addressed in order to maintain a clean and orderly construction site during the various phases of work:

Inspect the laydown yard and staging areas routinely;

- Routine trash collection and proper disposal;
- Familiarize employees and contractors with spill clean-up equipment, and spill kit locations; and,
- Familiarize employees and contractors with good housekeeping procedures and pollution prevention procedures.

7.2.2 Material Storage

The following good housekeeping practices will be utilized at laydown and storage areas:

- Storage containers will be stored away from direct traffic to prevent accidents. Containers will also have proper labels;
- Dumpsters and trash receptacles will be used to dispose of onsite trash and will be serviced by a licensed company. Dumpsters and trash receptacles will be covered at all times when not in use;
- Storage areas will be kept free of refuse;
- Chemical substances and petroleum products will be properly labeled, and generally sized secondary containment for bulk storage (55 gallons or greater) will be utilized; and
- Chemical substance containers will be clearly labeled, and an SDS will be available upon request.

7.2.3 Waste Removal

All waste from materials imported to the construction site will be removed for disposal / recycling at an appropriate licensed disposal and/or recycling facility, including sanitary sewage facilities (typically portable). No wastes of imported materials will be buried, dumped, or purposely discharged to waters of the state.

8. EMPLOYEE TRAINING

The Operations Manager, SWMP Administrator, or their designee(s) will train employees who are involved with stormwater-related activities, such as inspections or stormwater control measure maintenance. Training will cover information and procedures contained in the SWMP and will be conducted on an as-needed basis. Personnel work responsibilities will be used to identify the appropriate attendees. A training log will be kept and updated following each formal training event.

The following topics are generally discussed during SWMP training:

- Introduction to CDPHE WQCD stormwater permits;
- Stormwater regulations;
- Purpose of stormwater permits;
- Requirements of stormwater permits;
- Components of the SWMP;
- Identification of potential pollutant sources;
- Control measures and types;
- Preventative maintenance;
- Good housekeeping practices;
- Inspections and maintenance procedures; and,
- Record keeping.

9. RECORD KEEPING

The following record keeping procedures will be implemented to provide accurate and complete documentation of events associated with the stormwater management program:

- Routine inspections will include all required 7-day, or 14 day, and 30-day frequencies; and,
- Stormwater related inspection records, site maps, and SWMP modifications will be kept for a minimum of 3 years after the Project has achieved final stabilization.

APPENDIX A

STORMWATER GENERAL PERMIT CERTIFICATION

COLORADO
Department of Public Health & Environment

CERTIFICATION TO DISCHARGE
UNDER
CDPS GENERAL PERMIT COR400000
STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES

Certification Number: **COR414278**

This Certification to Discharge specifically authorizes:

Owner Black Hills Colorado Gas, Inc.
Operator Black Hills Energy
to discharge stormwater from the facility identified as

Mayberry 6 Inch

To the waters of the State of Colorado, including, but not limited to:

Black Squirrel Creek

Facility Activity :	Pipeline and Utilities (including natural gas, electricity, water and communications)
Disturbed Acres:	31.2 acres
Facility Located at:	Hwy 94 and Antelope Drive Ellicott CO 80808 El Paso County Latitude 38.838234 Longitude -104.427534
Specific Information (if applicable):	

Certification is issued and effective: 9/24/2021
Expiration date of general permit: 3/31/2024

This certification under the permit requires that specific actions be performed at designated times. The certification holder is legally obligated to comply with all terms and conditions of the permit.

This certification was approved by:
Meg Parish, Section Manager
Permits Section
Water Quality Control Division

STATE OF COLORADO

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Water Quality Control Division

CDPS GENERAL PERMIT STORMWATER DISCHARGES ASSOCIATED WITH

CONSTRUCTION ACTIVITY AUTHORIZATION TO DISCHARGE UNDER THE COLORADO DISCHARGE PERMIT SYSTEM (CDPS)

COR400000

In compliance with the provisions of the Colorado Water Quality Control Act, (25-8-101 et seq., CRS, 1973 as amended) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq.; the "Act"), this permit authorizes the discharge of stormwater associated with construction activities (and specific allowable non-stormwater discharges in accordance with Part I.A.1. of the permit) certified under this permit, from those locations specified throughout the State of Colorado to specified waters of the State.

Such discharges shall be in accordance with the conditions of this permit. This permit specifically authorizes the facility listed on the certification to discharge in accordance with permit requirements and conditions set forth in Parts I and II hereof. All discharges authorized herein shall be consistent with the terms and conditions of this permit.

This permit becomes effective on April 1, 2019, and shall expire at midnight March 31, 2024.

Issued and signed this 28th day of January, 2021.

Meg Parish

Meg Parish, Permits Section Manager Water Quality Control Division

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Permit History
Minor Modification Issued January 28, 2021 Effective February 1, 2021
Modification Issued December 31, 2020 Effective February 1, 2021
Originally signed and issued October 31, 2018; effective April 1, 2019

Table of Contents

Part I

Note: At the first mention of terminology that has a specific connotation for the purposes of this permit, the terminology is electronically linked to the definitions section of the permit in Part I.E.

A. COVERAGE UNDER THIS PERMIT

1. Authorized Discharges

This general permit authorizes permittee(s) to discharge the following to state waters: stormwater associated with construction activity and specified non-stormwater associated with construction activity. The following types of stormwater and non-stormwater discharges are authorized under this permit:

a. Allowable Stormwater Discharges

i. Stormwater discharges associated with construction activity.

ii. Stormwater discharges associated with producing earthen materials, such as soils, sand, and gravel dedicated to providing material to a single contiguous site, or within ¼ mile of a construction site (e.g. borrow or fill areas).

iii. Stormwater discharges associated with dedicated asphalt, concrete batch plants and masonry mixing stations (Coverage under this permit is not required if alternative coverage has been obtained.)

b. Allowable Non-Stormwater Discharges

The following non-stormwater discharges are allowable under this permit if the discharges are identified in the stormwater management plan in accordance with Part I.C and if they have appropriate control measures in accordance with Part I.B.1.

i. Discharges from uncontaminated springs that do not originate from an area of land disturbance.

ii. Discharges to the ground of concrete washout water associated with the washing of concrete tools and concrete mixer chutes. Discharges of concrete washout water must not leave the site as surface runoff or reach receiving waters as defined by this permit. Concrete on-site waste disposal is not authorized by this permit except in accordance with Part I.B.1.a.ii(b).

iii. Discharges of landscape irrigation return flow.

iv. Discharges from diversions of state waters within the permitted site.

c. Emergency Fire Fighting

Discharges resulting from emergency firefighting activities during the active emergency response are authorized by this permit.

2. Limitations on Coverage

Discharges not authorized by this permit include, but are not limited to, the discharges and activities listed below. Permittees may seek individual or alternate general permit coverage for the discharges, as appropriate and available.

a. Discharges of Non-Stormwater

Discharges of non-stormwater, except the authorized non-stormwater discharges listed in Part

I.A.1.b., are not eligible for coverage under this permit.

b. Discharges Currently Covered by another Individual or General Permit

c. Discharges Currently Covered by a Water Quality Control Division (division) Low Risk Guidance Document

3. Permit Certification and Submittal Procedures

a. Duty to Apply

The following activities shall apply for coverage under this permit:

i. Construction activity that will disturb one acre or more; or

ii. Construction activity that is part of a common plan of development or sale; or

iii. Stormwater discharges that are designated by the division as needing a stormwater permit because the discharge:

(a) Contributes to a violation of a water quality standard; or

(b) Is a significant contributor of pollutants to state waters.

b. Application Requirements

To obtain authorization to discharge under this permit, applicants applying for coverage following the effective date of the renewal permit shall meet the following requirements:

i. Owners and operators submitting an application for permit coverage will be co- permittees subject to the same benefits, duties, and obligations under this permit.

ii. Signature requirements: Both the owner and operator (permittee) of the construction site, as defined in Part I.E., must agree to the terms and conditions of the permit and submit a completed application that includes the signature of both the owner and the operator. In cases where the duties of the owner and operator are managed by the owner, both application signatures may be completed by the owner. Both the owner and operator are responsible for ensuring compliance with all terms and conditions of the permit, including implementation of the stormwater management plan.

iii. The applicant(s) must develop a stormwater management plan (SWMP) in accordance with the requirements of Part I.C. The applicant(s) must also certify that the SWMP is complete, or will be complete, prior to commencement of any construction activity.

iv. In order to apply for certification under this general permit, the applicant(s) must submit a complete, accurate, and signed permit application form as provided by the division by electronic delivery at least 10 days prior to the commencement of construction activity, except those construction activities that are in response to a public emergency related site; public emergency related sites shall apply for coverage no later than 14 days after the commencement of construction activities. The provisions of this part in no way remove a violation of the Colorado Water Quality Control Act if a point source discharge occurs prior to the issuance of a CDPS permit.

v. The application in its entirety must be submitted via the division's online permitting system unless a waiver is granted by the division. If a waiver is granted, the application in its entirety, including signatures by both the owner and operator, must be submitted to:

Colorado Department of Public Health and Environment
Water Quality Control Division
Permits Section, WQCD-PS-B2
4300 Cherry Creek Drive South
Denver, CO 80246

vi. The applicant(s) must receive written notification that the division granted permit coverage prior to conducting construction activities except for construction activities that are in response to a public emergency related site.

c. Division Review of Permit Application

Within 10 days of receipt of the application, and following review of the application, the division may:

i. Issue a certification of coverage;

ii. Request additional information necessary to evaluate the discharge;

iii. Delay the authorization to discharge pending further review;

iv. Notify the applicant that additional terms and conditions are necessary; or

v. Deny the authorization to discharge under this general permit.

d. Alternative Permit Coverage

i. Division Required Alternative Permit Coverage:

The division may require an applicant or permittee to apply for an individual permit or an alternative general permit if it determines the discharge does not fall under the scope of this general permit, including if any additional terms and conditions are necessary in order to ensure that discharges authorized by this permit shall not cause, have the reasonable potential to cause, or measurably contribute to an exceedance of any applicable water quality standard, including narrative standards for water quality. In this case, the division will notify the applicant or permittee that an individual permit application is required.

ii. Permittee Request for Alternative Permit Coverage:

A permittee authorized to discharge stormwater under this permit may request to be excluded from coverage under this general permit by applying for an individual permit. In this case, the permittee must submit an individual application, with reasons supporting the request, to the division at least 180 days prior to any discharge. When an individual permit is issued, the permittee's authorization to discharge under this permit is terminated on the effective date of the individual permit.

e. Submittal Signature Requirements

Documents required for submittal to the division in accordance with this permit, including applications for permit coverage and other documents as requested by the division, must include signatures by **both** the owner and the operator, except for instances where the duties of the owner and operator are managed by the owner.

Signatures on all documents submitted to the division as required by this permit must meet the Standard Signatory Requirements in Part II.K of this permit in accordance with 40 C.F.R. 122.41(k).

i. Signature Certification

Any person(s) signing documents required for submittal to the division must make the following

certification:

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

f. Compliance Document Signature Requirements

Documents which are required for compliance with the permit, but for which submittal to the division is not required unless specifically requested by the division, must be signed by the individual(s) designated as the Qualified Stormwater Manager, as defined in Part I.E.

i. Any person(s) signing inspection documents required for compliance with the permit per Part I.D.5.c.xiii must make the following statement and provide the date of the statement:

"I verify that, to the best of my knowledge and belief, that if any corrective action items were identified during the inspection, those corrective actions are complete, and the site is currently in compliance with the permit."

g. Field Wide Permit Coverage for Oil and Gas Construction

At the discretion of the division, a single permit certification may be issued to a single oil and gas permittee to cover construction activity related discharges from an oil and gas field at multiple locations that are not necessarily contiguous.

h. Permit Coverage without Application

Qualifying Local Program: When a small construction site is within the jurisdiction of a qualifying local program, the owner and operator of the construction activity are authorized to discharge stormwater associated with small construction activity under this general permit without the submittal of an application to the division. Sites covered by a qualifying local program are exempt from the following sections of this general permit: Part I.A.3.a.; Part I.A.3.b.; Part I.A.3.c.; Part I.A.3.d.; Part I.A.3.g.; Part I.A.3.i.; Part I.A.3.j.; Part I.A.3.k.

Sites covered by a qualifying local program are subject to the following requirements:

i. Local Agency Authority: This permit does not pre-empt or supersede the authority of local agencies to prohibit, restrict, or control discharges of stormwater to storm drain systems or other water courses within their jurisdiction.

ii. Permit Coverage Termination: When a site under a Qualifying Local Program is finally stabilized, coverage under this permit is automatically terminated.

iii. Compliance with Qualifying Local Program: Qualifying Local Program requirements that are equivalent to the requirements of this permit are incorporated by reference. Permittees authorized to discharge under this permit, must comply with the equivalent requirements of the Qualifying Local Program that has jurisdiction over the site as a condition of this permit.

iv. Compliance with Remaining Permit Conditions. Requirements of this permit that are in addition to or more stringent than the requirements of the Qualifying Local Program apply in addition to the requirements of the Qualifying Local Program.

v. Written Authorization of Coverage: The division or local municipality may require any permittee within the jurisdiction of a Qualifying Local Program covered under this permit to

apply for, and obtain written authorization of coverage under this permit. The permittee must be notified in writing that an application for written authorization of coverage is required.

i. Permittee Initiated Permit Actions

Permittee initiated permit actions, including but not limited to modifications, contact changes, transfers, and terminations, shall be conducted following Part II.L, division guidance and using appropriate division-provided forms.

j. Sale of Residence to Homeowner

Residential construction sites only: The permittee may remove residential lots from permit coverage once the lot meets the following criteria:

i. The residential lot has been sold to the homeowner(s) for private residential use;

ii. A certificate of occupancy, or equivalent, is maintained on-site and is available during division inspections;

iii. The lot is less than one acre of disturbance;

iv. All construction activity conducted on the lot by the permittee is complete;

v. The permittee is not responsible for final stabilization of the lot; and

vi. The SWMP was modified to indicate the lot is no longer part of the construction activity.

If the residential lot meets the criteria listed above then activities occurring on the lot are no longer considered to be construction activities with a duty to apply and maintain permit coverage. Therefore, the permittee is not required to meet the final stabilization requirements and may terminate permit coverage for the lot.

k. Permit Expiration and Continuation of Permit Coverage

Authorization to discharge under this general permit shall expire at midnight on March 31, 2024. While Regulation 61.4 requires a permittee to submit an application for continuing permit coverage 180 days before the permit expires, the division is requiring that permittees desiring continued coverage under this general permit must reapply at least 90 days in advance of this permit expiration. The division will determine if the permittee may continue to discharge stormwater under the terms of the general permit. An individual permit may be required for any facility not reauthorized to discharge under the reissued general permit.

If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued and remain in force and effect. For permittees that have applied for continued permit coverage, discharges authorized under this permit prior to the expiration date will automatically remain covered by this permit until the earliest of:

i. An authorization to discharge under a reissued permit, or a replacement of this permit, following the timely and appropriate submittal of a complete application requesting authorization to discharge under the new permit and compliance with the requirements of the new permit; or

ii. The issuance and effect of a termination issued by the division; or

iii. The issuance or denial of an individual permit for the facility's discharges; or

iv. A formal permit decision by the division not to reissue this general permit, at which time the division will identify a reasonable time period for covered dischargers to seek coverage under

an alternative general permit or an individual permit. Coverage under this permit will cease when coverage under another permit is granted/authorized; or

v. The division has informed the permittee that discharges previously authorized under this permit are no longer covered under this permit.

B. EFFLUENT LIMITATIONS

1. Requirements for Control Measures Used to Meet Effluent Limitations

The permittee must implement control measures to minimize the discharge of pollutants from all potential pollutant sources at the site. Control measures must be installed prior to commencement of construction activities. Control measures must be selected, designed, installed and maintained in accordance with good engineering, hydrologic and pollution control practices. Control measures implemented at the site must be designed to prevent pollution or degradation of state waters.

a. Stormwater Pollution Prevention

The permittee must implement structural and/or nonstructural control measures that effectively minimize erosion, sediment transport, and the release of other pollutants related to construction activity.

i. Control Measures for Erosion and Sediment Control

Control measures for erosion and sediment control may include, but are not limited to, wattles/sediment control logs, silt fences, earthen dikes, drainage swales, sediment traps, subsurface drains, pipe slope drains, inlet protection, outlet protection, gabions, sediment basins, temporary vegetation, permanent vegetation, mulching, geotextiles, sod stabilization, slope roughening, maintaining existing vegetation, protection of trees, and preservation of mature vegetation.

Specific control measures must meet the requirements listed below.

(a) Structural and nonstructural vehicle tracking controls shall be implemented to minimize vehicle tracking of sediment from disturbed areas and may include tracking pads, minimizing site access, wash racks, graveled parking areas, maintaining vehicle traffic to paved areas, street sweeping and sediment control measures.

(b) Stormwater runoff from all disturbed areas and soil storage areas must utilize or flow to one or more control measures to minimize erosion or sediment in the discharge. The control measure(s) must be selected, designed, installed and adequately sized in accordance with good engineering, hydrologic and pollution control practices for the intended application. The control measure(s) must contain or filter flows in order to prevent the bypass of flows without treatment and must be appropriate for stormwater runoff from disturbed areas and for the expected flow rate, duration, and flow conditions (e.g. sheet or concentrated flow).

(c) Selection of control measures should prioritize the use of structural and nonstructural control measures that minimize the potential for erosion (i.e. covering materials). Selection should also prioritize phasing construction activities to minimize the amount of soil disturbance at any point in time throughout the duration of construction.

(d) Outlets that withdraw water from or near the surface shall be installed when discharging from basins and impoundments, unless infeasible.

(e) Maintain pre-existing vegetation or equivalent control measures for areas within 50 horizontal feet of receiving waters as defined by this permit, unless infeasible.

(f) Soil compaction must be minimized for areas where infiltration control measures will occur or where final stabilization will be achieved through vegetative cover.

(g) Unless infeasible, topsoil shall be preserved for those areas of a site that will utilize vegetative final stabilization.

(h) Minimize the amount of soil exposed during construction activity, including the disturbance of steep slopes.

(i) Diversion control measures must minimize soil transport and erosion within the entire diversion, minimize erosion during discharge, and minimize run-on into the diversion. The permittee must minimize the discharge of pollutants throughout the installation, implementation and removal of the diversion. Diversions must meet one or more of the following conditions:

(1) Lined or piped structures that result in no erosion in all flow conditions.

(2) Diversion channels, berms, and coffer dams must be lined or composed of a material that minimizes potential for soil loss in the entire wetted perimeter during anticipated flow conditions (e.g. vegetated swale, non-erosive soil substrate). The entire length of the diversion channel must be designed with all of the following considerations: maximum flow velocity for the type of material(s) exposed to the anticipated flows to ensure that the calculated maximum shear stress of flows in the channel is not expected to result in physical damage to the channel or liner and result in discharge of pollutants. Additionally, the conditions relied on to minimize soil loss must be maintained for the projected life of the diversion (i.e. a vegetated swale must be limited to a period of time that ensures vegetative growth, minimizes erosion and maintains stable conditions).

(3) An alternative diversion criteria, approved by the division prior to implementation. The diversion method must be designed to minimize the discharge of pollutants and to prevent the potential for pollution or degradation to state waters as a result of the diverted flow through the diversion structure. In addition, the alternative diversion method must minimize the discharge of pollutants throughout the installation, implementation and removal of the diversion.

ii. Practices for Other Common Pollutants

(a) Bulk storage, individual containers of 55 gallons or greater, for petroleum products and other liquid chemicals must have secondary containment, or equivalent protection, in order to contain spills and to prevent spilled material from entering state waters.

(b) Control measures designed for concrete washout waste must be implemented. This includes washout waste discharged to the ground as authorized under this permit and washout waste from concrete trucks and masonry operations contained on site. The permittee must ensure the washing activities do not contribute pollutants to stormwater runoff, or receiving waters in accordance Part I.A.1.b.ii. Discharges that may reach groundwater must flow through soil that has buffering capacity prior to reaching groundwater, as necessary to meet the effluent limits in this permit, including Part I.B.3.a. The concrete washout location must not be located in an area where shallow groundwater may be present and would result in buffering capacity not being adequate, such as near natural drainages, springs, or wetlands. This permit authorizes discharges to the ground of concrete washout waste, but does not authorize on-site waste disposal per Part I.B.3.d.

(c) In the event that water remains onsite and contains pollutants either from the

firefighting activities or picked up from the site (i.e. in a gutter, sediment basin, etc.) after active emergency response is complete, the permittee must ensure the remaining water containing pollutants is properly removed and disposed of in order to minimize pollutants from discharging from the site, unless infeasible.

iii. Stabilization Requirements

The following requirements must be implemented for each site.

(a) Temporary stabilization must be implemented for earth disturbing activities on any portion of the site where ground disturbing construction activity has permanently ceased, or temporarily ceased for more than 14 calendar days. Temporary stabilization methods may include, but are not limited to, tarps, soil tackifier, and hydroseed. The permittee may exceed the 14-day schedule when either the function of the specific area of the site requires it to remain disturbed or physical characteristics of the terrain and climate prevent stabilization. The SWMP must document the constraints necessitating the alternative schedule, provide the alternate stabilization schedule, and identify all locations where the alternative schedule is applicable on the site map. Minimum inspection frequency and scope, as directed in Part I.D., must be followed for temporarily stabilized areas.

(b) Final stabilization must be implemented for all construction sites covered under this permit. Final stabilization is reached when (1), (2), and (3) below are complete:

(1) All construction activities are complete.

(2) Permanent stabilization methods are complete. Permanent stabilization methods include, but are not limited to, permanent pavement or concrete, hardscape, xeriscape, stabilized driving surfaces, vegetative cover, or equivalent permanent alternative stabilization methods. The division may approve alternative final stabilization criteria for specific operations. Vegetative cover must meet the following criteria:

a. Evenly distributed perennial vegetation, and

b. Coverage, at a minimum, equal to 70 percent of what would have been provided by native vegetation in a local, undisturbed area or adequate reference site, and

(3) The permittee must ensure all temporary control measures are removed from the construction site once final stabilization is achieved, except when the control measure specifications allow the control measure to be left in place (i.e. bio-degradable control measures).

(c) Final stabilization must be designed and installed as a permanent feature. Final stabilization measures for obtaining a vegetative cover or alternative stabilization methods include, but are not limited to, the following as appropriate:

(1) Seed mix selection and application methods;

(2) Soil preparation and amendments;

(3) Soil stabilization methods to provide adequate protection to minimize erosion (e.g. crimped straw, hydro mulch or rolled erosion control products);

(4) Appropriate sediment control measures as needed until final stabilization is achieved;

(5) Permanent pavement, hardscape, xeriscape, stabilized driving surfaces;

(d) Other alternative stabilization practices as applicable.

b. Maintenance

The permittee must ensure that all control measures remain in effective operating condition and are protected from activities that would reduce their effectiveness. Control measures must be maintained in accordance with good engineering, hydrologic and pollution control practices. Observations leading to the required maintenance of control measures can be made during a site inspection, or during general observations of site conditions. The necessary repairs or modifications to a control measure requiring routine maintenance, as defined in Part I.E., must be conducted to maintain an effective operating condition. This section is not subject to the requirements in Part I.B.1.c below.

c. Corrective Actions

The permittee must assess the adequacy of control measures at the site, and the need for changes to those control measures, to ensure continued effective performance.

When an inadequate control measure, as defined in Part I.E., is identified (i.e., new or replacement control measures become necessary), the following corrective action requirements apply. The permittee is in noncompliance with the permit until the inadequate control measure is replaced or corrected and returned to effective operating condition in compliance with Part I.B.1 and the general requirements in Part I.B.3. If the inadequate control measure results in noncompliance that meets the conditions of Part II.L., the permittee must also meet the requirements of that section.

i. The permittee must take all necessary steps to minimize or prevent the discharge of pollutants from the permitted area and manage any stormwater run-on onto the site until a control measure is implemented and made operational and/or an inadequate control measure is replaced or corrected and returned to effective operating condition. If it is infeasible to install or repair the control measure immediately after discovering the deficiency, the following must be documented in the SWMP in Part I.D.5.c and kept on record in accordance with the recordkeeping requirements in Part II.

(a) Describe why it is infeasible to initiate the installation or repair immediately; and

(b) Provide a schedule for installing or repairing the control measure and returning it to an effective operating condition as soon as possible.

ii. If applicable, the permittee must remove and properly dispose of any unauthorized release or discharge within and from the permitted area (e.g., discharge of non-stormwater, untreated stormwater containing pollutants, spill, or leak not authorized by this permit.) The permittee must also clean up any contaminated surfaces, if feasible, to minimize discharges of the material in subsequent storm events, including water remaining from the response that contains pollutants after active emergency firefighting response is complete.

2. Discharges to an Impaired Waterbody

a. Total Maximum Daily Load (TMDL)

If the discharge from the site of permit coverage flows to or could reasonably be expected to flow to any water body for which a TMDL has been approved, and stormwater discharges associated with construction activity were assigned a pollutant-specific Wasteload Allocation (WLA) under the TMDL, the division may:

i. Ensure the WLA is implemented properly through alternative local requirements, such as by a

municipal stormwater permit; or

ii. Notify the permittee of the WLA and amend the permittee's certification to add specific effluent limits and other requirements, as appropriate. The permittee may be required to do the following:

(a) Under the permittee's SWMP, implement specific control measures based on requirements of the WLA, and evaluate whether the requirements are met through implementation of existing stormwater control measures or if additional control measures are necessary. Document the calculations or other evidence demonstrating that the requirements are expected to be met; and

(b) If the evaluation shows that additional or modified control measures are necessary, describe the type and schedule for the control measure additions or modifications.

iii. Discharge monitoring may also be required. The permittee may maintain coverage under the general permit provided they comply with the applicable requirements outlined above. The division reserves the right to require individual or alternate general permit coverage.

3. General Requirements

a. Discharges authorized by this permit shall not cause, have the reasonable potential to cause, or measurably contribute to an exceedance of any applicable water quality standard, including narrative standards for water quality.

b. The division may require sampling and testing, on a case-by-case basis, in the event that there is reason to suspect that the SWMP is not adequately minimizing pollutants in stormwater or in order to measure the effectiveness of the control measures in removing pollutants in the effluent. Such monitoring may include Whole Effluent Toxicity testing.

c. The permittee must comply with the lawful requirements of federal agencies, municipalities, counties, drainage districts and other local agencies including applicable requirements in Municipal Stormwater Management Programs developed to comply with CDPS permits. The permittee must comply with local stormwater management requirements, policies and guidelines including those for erosion and sediment control.

d. All construction site wastes must be properly managed to prevent potential pollution of state waters. This permit does not authorize on-site waste disposal.

e. This permit does not relieve the permittee of the reporting requirements in 40 CFR 110, 40 CFR 117 or 40 CFR 302. Any discharge of hazardous material must be handled in accordance with the division's Noncompliance Notification Requirements (see Part II.L of the permit).

C. STORMWATER MANAGEMENT PLAN (SWMP) REQUIREMENTS

1. SWMP General Requirements

a. A SWMP shall be developed for each construction site listed under Part I.A.3.a, including but not limited to, construction activity that will disturb one acre or more and/or are part of a common plan of development or sale covered by this permit. The SWMP must be prepared in accordance with good engineering, hydrologic and pollution control practices.

i. For public emergency related sites, a SWMP shall be created no later than 14 days after the commencement of construction activities.

b. The permittee must implement the provisions of the SWMP as written and updated, from commencement of construction activity until final stabilization is complete. The division may review the SWMP.

c. A copy of the SWMP must be retained onsite or be onsite when construction activities are occurring at the site unless the permittee specifies another location and obtains approval from the division.

2. SWMP Content

a. The SWMP, at a minimum, must include the following elements.

i. Qualified Stormwater Manager. The SWMP must list individual(s) by title and name who are designated as responsible for implementing the SWMP in its entirety and meet the definition of a Qualified Stormwater Manager. This role may be filled by more than one individual.

ii. Spill Prevention and Response Plan. The SWMP must have a spill prevention and response plan. The plan may incorporate by reference any part of a Spill Prevention Control and Countermeasure (SPCC) plan under section 311 of the Clean Water Act (CWA) or a Spill Prevention Plan required by a separate CDPS permit. The relevant sections of any referenced plans must be available as part of the SWMP consistent with Part I.C.4.

iii. Other CDPS Permits. The SWMP must list the applicable CDPS permits associated with the permitted site and the activities occurring on the permitted site (e.g. a CDPS Dewatering Permit).

iv. Materials Handling. The SWMP must describe handling procedures of all control measures implemented at the site to minimize impacts from handling significant materials that could contribute pollutants to runoff. These handling procedures can include control measures for pollutants and activities such as, exposed storage of building materials, paints and solvents, landscape materials, fertilizers or chemicals, sanitary waste material, trash and equipment maintenance or fueling procedures.

v. Potential Sources of Pollution. The SWMP must list all potential sources of pollution which may reasonably be expected to affect the quality of stormwater discharges associated with construction activity from the site. This may include, but is not limited to, the following pollutant sources:

(a) Disturbed and stored soils;

(b) Vehicle tracking of sediments;

(c) Management of contaminated soils, if known to be present, or if contaminated soils are found during construction;

(d) Loading and unloading operations;

(e) Outdoor storage activities (erodible building materials, fertilizers, chemicals, etc.);

(f) Vehicle and equipment maintenance and fueling;

(g) Significant dust or particulate generating processes (e.g., saw cutting material, including dust);

(h) Routine maintenance activities involving fertilizers, pesticides, herbicides, detergents, fuels, solvents, oils, etc.;

(i) On-site waste management practices (waste piles, liquid wastes, dumpsters);

(j) Concrete truck/equipment washing, including washing of the concrete truck chute and associated fixtures and equipment;

(k) Dedicated asphalt, concrete batch plants and masonry mixing stations;

(l) Non-industrial waste sources such as worker trash and portable toilets.

vi. Implementation of Control Measures. The SWMP must include design specifications that contain information on the implementation of all the structural and nonstructural control measures in use on the site in accordance with good engineering, hydrologic and pollution control practices; including, as applicable, drawings, dimensions, installation information, materials, implementation processes, control measure-specific inspection expectations, and maintenance requirements.

The SWMP must include a documented use agreement between the permittee and the owner or operator of any control measures located outside of the permitted area, that are utilized by the permittee's construction site for compliance with this permit, but not under the direct control of the permittee. The permittee is responsible for ensuring that all control measures located outside of their permitted area, that are being utilized by the permittee's construction site, are properly maintained and in compliance with all terms and conditions of the permit. The SWMP must include all information required of and relevant to any such control measures located outside the permitted area, including location, installation specifications, design specifications and maintenance requirements.

vii. Site Description. The SWMP must include a site description which includes, at a minimum, the following:

(a) The nature of the construction activity at the site;

(b) The proposed schedule for the sequence for major construction activities and the planned implementation of control measures for each phase. (e.g. clearing, grading, utilities, vertical, etc.);

(c) Estimates of the total acreage of the site, and the acreage expected to be disturbed by clearing, excavation, grading, or any other construction activities;

(d) A summary of any existing data and sources used in the development of the construction site plans or SWMP that describe the soil types found in the permitted area and the erodibility of the identified soil types;

(e) A description of the percent cover of native vegetation on the site if the site is undisturbed, or the percent cover of native vegetation in a similar, local undisturbed area or adequate reference area if the site is disturbed. Include the source or methodology for determining the percentage. If a percent cover is not appropriate for the site location (i.e. arid), describe the technique and justification for the identified cover of native vegetation;

(f) A description of any allowable non-stormwater discharges at the site, including those being discharged under a separate CDPS permit or a division low risk discharge guidance policy, and applicable control measures installed;

(g) A description of the drainage patterns from the site, including a description of the immediate source receiving the discharge and the receiving water(s) of the discharge, if different than the immediate source. If the stormwater discharge is to a municipal separate storm sewer system, include the name of the entity owning that system, the location(s) of the stormwater discharge, and the receiving water(s);

(h) A description of all stream crossings located within the construction site boundary; and

(i) A description of the alternate temporary stabilization schedule, if applicable (Part I.B.1.a.iii(a)).

(j) A description of the alternative diversion criteria as approved by the division, if applicable (Part I.B.1.a.i(i)(3)).

viii. Site Map. The SWMP must include a site map which includes, at a minimum, the following:

(a) Construction site boundaries;

(b) Flow arrows that depict stormwater flow directions on-site and runoff direction;

(c) All areas of ground disturbance including areas of borrow and fill;

(d) Areas used for storage of soil;

(e) Locations of all waste accumulation areas, including areas for liquid, concrete, masonry, and asphalt;

(f) Locations of dedicated asphalt, concrete batch plants and masonry mixing stations;

(g) Locations of all structural control measures;

(h) Locations of all non-structural control measures (e.g. temporary stabilization);

(i) Locations of springs, streams, wetlands, diversions and other state waters, including areas that require pre-existing vegetation be maintained within 50 feet of a receiving water, where determined feasible in accordance with Part I.B.1.a.i(e);

(j) Locations of all stream crossings located within the construction site boundary; and

(k) Locations where alternative temporary stabilization schedules apply.

ix. Temporary Stabilization, Final Stabilization and Long Term Stormwater Management.

(a) The SWMP must document the constraints necessitating an alternative temporary stabilization schedule, as referenced in Part I.B.1.a.iii(a), provide the alternate stabilization schedule, and identify all locations where the alternative schedule is applicable on the site map.

(b) The SWMP must describe and locate the methods used to achieve final stabilization of all disturbed areas at the site, as listed in Part I.B.1.a.iii(b).

(c) The SWMP must describe the measures used to establish final stabilization through vegetative cover or alternative stabilization method, as referenced in Part I.B.1.a.iii(c), and describe and locate any temporary control measures in place during the process of final stabilization.

(d) The SWMP must describe and locate any planned permanent control measures to control pollutants in stormwater discharges that will occur after construction operations are completed, including but not limited to, detention/retention ponds, rain gardens, stormwater vaults, etc.

x. Inspection Reports. The SWMP must include documented inspection reports in accordance with Part I.D.5.c.

3. SWMP Review and Revisions

Permittees must keep a record of SWMP changes made that includes the date and identification of the changes. The SWMP must be amended when the following occurs:

a. A change in design, construction, operation, or maintenance of the site requiring implementation

of new or revised control measures;

b. The SWMP proves ineffective in controlling pollutants in stormwater runoff in compliance with the permit conditions;

c. Control measures identified in the SWMP are no longer necessary and are removed; and

d. Corrective actions are taken onsite that result in a change to the SWMP.

e. The site or areas of the site qualifying for reduced frequency inspections under Part I.D.4.

For SWMP revisions made prior to or following a change(s) onsite, including revisions to sections addressing site conditions and control measures, a notation must be included in the SWMP that identifies the date of the site change, the control measure removed, or modified, the location(s) of those control measures, and any changes to the control measure(s). The permittee must ensure the site changes are reflected in the SWMP. The permittee is noncompliant with the permit until the SWMP revisions have been made.

4. SWMP Availability

A copy of the SWMP must be provided upon request to the division, EPA, and any local agency with authority for approving sediment and erosion plans, grading plans or stormwater management plans within the time frame specified in the request. If the SWMP is required to be submitted to any of these entities, the submission must include a signed certification in accordance with Part I.A.3.e, certifying that the SWMP is complete and compliant with all terms and conditions of the permit.

All SWMPs required under this permit are considered reports that must be available to the public under Section 308(b) of the CWA and Section 61.5(4) of the CDPS regulations. The permittee must make plans available to members of the public upon request. However, the permittee may claim any portion of a SWMP as confidential in accordance with 40 CFR Part 2.

D. SITE INSPECTIONS

Site inspections must be conducted in accordance with the following requirements. The required inspection schedules are a minimum frequency and do not affect the permittee's responsibility to implement control measures in effective operating condition as prescribed in the SWMP, Part I.C.2.a.vi, as proper maintenance of control measures may require more frequent inspections. Site inspections shall start within 7 calendar days of the commencement of construction activities on site.

1. Person Responsible for Conducting Inspections

The person(s) inspecting the site may be on the permittee's staff or a third party hired to conduct stormwater inspections under the direction of the permittee(s). The permittee is responsible for ensuring that the inspector meets the definition of a Qualified Stormwater Manager. The inspector may be different than the individual(s) listed in Part I.C.2.a.i.

2. Inspection Frequency

Permittees must conduct site inspections in accordance with on the following minimum frequencies, unless the site meets the requirements of Part I.D.3. All inspections must be recorded per Part I.D.5.c.

a. At least one inspection every 7 calendar days; or

b. At least one inspection every 14 calendar days, if post-storm event inspections are conducted within 24 hours after the end of any precipitation or snowmelt event that causes surface erosion. Post-storm inspections may be used to fulfill the 14-day routine inspection requirement.

c. When site conditions make the schedule required in this section impractical, the permittee may

petition the division to grant an alternate inspection schedule. The alternative inspection schedule must not be implemented prior to written approval by the division and incorporation into the SWMP.

3. Inspection Frequency for Discharges to Outstanding Waters

Permittees must conduct site inspections at least once every 7 calendar days for sites that discharge to a water body designated as an Outstanding Water by the Water Quality Control Commission.

4. Reduced Inspection Frequency

The permittee may perform site inspections at the following reduced frequencies when one of the following conditions exists:

a. Post-Storm Inspections at Temporarily Idle Sites

For permittees choosing an inspection frequency pursuant to Part I.D.2.b and if no construction activities will occur following a storm event, post-storm event inspections must be conducted prior to re-commencing construction activities, and no later than 72 hours following the storm event. If the post-storm event inspection qualifies under this section, the inspection delay must be documented in the inspection record per Part I.D.5.c. Routine inspections must still be conducted at least every 14 calendar days.

b. Inspections at Completed Sites/Areas

When the site, or portions of a site, are awaiting establishment of a vegetative ground cover and final stabilization, the permittee must conduct a thorough inspection of the stormwater management system at least once every 30 days. Post-storm event inspections are not required under this schedule. This reduced inspection schedule is allowed if all of the following criteria are met:

i. All construction activities resulting in ground disturbance are complete;

ii. All activities required for final stabilization, in accordance with Part I.B.1.a.iii(b) & (c) and with the SWMP, have been completed, with the exception of the application of seed that has not occurred due to seasonal conditions or the necessity for additional seed application to augment previous efforts; and

iii. The SWMP has been amended to locate those areas to be inspected in accordance with the reduced schedule allowed for in this paragraph.

c. Winter Conditions Inspections Exclusion

Inspections are not required for sites that meet all of the following conditions: construction activities are temporarily halted, snow cover exists over the entire site for an extended period, and melting conditions posing a risk of surface erosion do not exist. This inspection exception is applicable only during the period where melting conditions do not exist, and applies to the routine 7-day, 14-day and monthly inspections, as well as the post-storm-event inspections. When this inspection exclusion is implemented, the following information must be documented in accordance with the requirements in Part I.C.3 and Part I.D.5.c:

i. Dates when snow cover existed;

ii. Date when construction activities ceased; and

iii. Date melting conditions began.

5. Inspection Scope

a. Areas to Be Inspected

When conducting a site inspection the following areas, if applicable, must be inspected for evidence of, or the potential for, pollutants leaving the construction site boundaries, entering the stormwater drainage system or discharging to state waters:

i. Construction site perimeter;

ii. All disturbed areas;

iii. Locations of installed control measures;

iv. Designated haul routes;

v. Material and waste storage areas exposed to precipitation;

vi. Locations where stormwater has the potential to discharge offsite; and

vii. Locations where vehicles exit the site.

b. Inspection Requirements

i. Visually verify whether all implemented control measures are in effective operational condition and are working as designed in their specifications to minimize pollutant discharges.

ii. Determine if there are new potential sources of pollutants.

iii. Assess the adequacy of control measures at the site to identify areas requiring new or modified control measures to minimize pollutant discharges.

iv. Identify all areas of non-compliance with the permit requirements and, if necessary, implement corrective action(s) in accordance with Part I.B.1.c.

c. Inspection Reports

The permittee must keep a record of all inspections conducted for each permitted site. Inspection reports must identify any incidents of noncompliance with the terms and conditions of this permit. All inspection reports must be signed and dated in accordance with Part I.A.3.f. Inspection records must be retained in accordance with Part II.O. At a minimum, the inspection report must include:

i. The inspection date;

ii. Name(s) and title(s) of personnel conducting the inspection;

iii. Weather conditions at the time of inspection;

iv. Phase of construction at the time of inspection;

v. Estimated acreage of disturbance at the time of inspection;

vi. Location(s) and identification of control measures requiring routine maintenance;

vii. Location(s) and identification of discharges of sediment or other pollutants from the site;

viii. Location(s) and identification of inadequate control measures;

ix. Location(s) and identification of additional control measures needed that were not in place at the time of inspection;

x. Description of corrective action(s) for items vii, viii, ix, above, dates corrective action(s) were completed, including requisite changes to the SWMP, as necessary;

xi. Description of the minimum inspection frequency (either in accordance with Part I.D.2, Part I.D.3 or Part I.D.4.) utilized when conducting each inspection.

xii. Deviations from the minimum inspection schedule as required in Part I.D.2. This would include documentation of division approval for an alternate inspection schedule outlined in Part I.D.2.c;

xiii. After adequate corrective action(s) have been taken, or where a report does not identify any incidents requiring corrective action, the report shall contain a statement as required in Part I.A.3.f.

E. DEFINITIONS

For the purposes of this permit:

(1) Bypass the intentional diversion of waste streams from any portion of a treatment facility in accordance with 40 CFR 122.41(m)(1)(i) and Regulation 61.2(12).

(2) Common Plan of Development or Sale - A contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules, but remain related. The division has determined that "contiguous" means construction activities located in close proximity to each other (within ¼ mile). Construction activities are considered to be "related" if they share the same development plan, builder or contractor, equipment, storage areas, etc. "Common plan of development or sale" includes construction activities that are associated with the construction of field wide oil and gas permits for facilities that are related.

(3) Construction Activity - Ground surface disturbing and associated activities (land disturbance), which include, but are not limited to, clearing, grading, excavation, demolition, installation of new or improved haul roads and access roads, staging areas, stockpiling of fill materials, and borrow areas. Construction does not include routine maintenance to maintain the original line and grade, hydraulic capacity, or original purpose of the facility. Activities to conduct repairs that are not part of routine maintenance or for replacement are construction activities and are not routine maintenance. Repaving activities where underlying and/or surrounding soil is exposed as part of the repaving operation are considered construction activities. Construction activity is from initial ground breaking to final stabilization regardless of ownership of the construction activities.

(4) Control Measure - Any best management practice or other method used to prevent or reduce the discharge of pollutants to state waters. Control measures include, but are not limited to, best management practices. Control measures can include other methods such as the installation, operation, and maintenance of structural controls and treatment devices.

(5) Control Measure Requiring Routine Maintenance - Any control measure that is still operating in accordance with its design and the requirements of this permit, but requires maintenance to prevent a breach of the control measure. See also inadequate control measure.

(6) Dedicated Asphalt, Concrete Batch Plants and Masonry Mixing Stations – Are batch plants or mixing stations located on, or within ¼ mile of, a construction site and that provide materials only to that specific construction site.

(7) Diversion – Discharges of state waters that are temporarily routed through channels or structures (e.g. in-stream, uncontaminated springs, non-pumped groundwater, temporary rerouting of surface waters).

(8) Final Stabilization - The condition reached when construction activities at the site have been

completed, permanent stabilization methods are complete, and temporary control measures are removed. Areas being stabilized with a vegetative cover must have evenly distributed perennial vegetation. The vegetation coverage must be, at a minimum, equal to 70 percent of what would have been provided by native vegetation in a local, undisturbed area or adequate reference site.

(9) Good Engineering, Hydrologic and Pollution Control Practices: are methods, procedures, and practices that:

a. Are based on basic scientific fact(s).

b. Reflect best industry practices and standards.

c. Are appropriate for the conditions and pollutant sources.

d. Provide appropriate solutions to meet the associated permit requirements, including practice based effluent limits.

(10) Inadequate Control Measure - Any control measure that is not designed or implemented in accordance with the requirements of the permit and/or any control measure that is not implemented to operate in accordance with its design. See also Control Measure Requiring Routine Maintenance.

(11) Infeasible – Not technologically possible, or not economically practicable and achievable in light of best industry practices.

(12) Minimize - reduce or eliminate to the extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice.

(13) Municipality - A city, town, county, district, association, or other public body created by, or under, State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or a designated and approved management agency under section 208 of CWA (1987).

(14) Municipal Separate Storm Sewer System (MS4) - A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

a. Owned or operated by a State, city, town, county, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or a designated and approved management agency under section 208 of the CWA that discharges to state waters;

i. Designed or used for collecting or conveying stormwater;

ii. Are not a combined sewer; and

iii. Are not part of a Publicly Owned Treatment Works (POTW). See 5 CCR 1002-61.2(62).

(15) Municipal Stormwater Management Program - A stormwater program operated by a municipality, typically to meet the requirements of the municipalities MS4 discharge certification.

(16) Operator - The party that has operational control over day-to-day activities at a project site which are necessary to ensure compliance with the permit. This party is authorized to direct individuals at a site to carry out activities required by the permit (i.e. the general contractor).

(17) Outstanding Waters - Waters designated as outstanding waters pursuant to Regulation 31, Section 31.8(2)(a). The highest level of water quality protection applies to certain waters that constitute an outstanding state or national resource.

(18) Owner - The party that has overall control of the activities and that has funded the implementation of the construction plans and specifications. This is the party that may have ownership of, a long term lease of, or easements on the property on which the construction activity is occurring (e.g. the developer).

(19) Permittee(s) - The owner and operator named in the discharge certification issued under this permit for the construction site specified in the certification.

(20) Point Source - Any discernible, confined, and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. Point source does not include irrigation return flow. See 5 CCR 102-61.2(75).

(21) Pollutant - Dredged spoil, dirt, slurry, solid waste, incinerator residue, sewage, sewage sludge, garbage, trash, chemical waste, biological nutrient, biological material, radioactive material, heat, wrecked or discarded equipment, rock, sand, or any industrial, municipal or agricultural waste. See 5 CCR 1002-61.2(76).

(22) Presentation of credentials – a government issued form of identification, if in person; or (ii) providing name, position and purpose of inspection if request to enter is made via telephone, email or other form of electronic communication. A Permittee's non-response to a request to enter upon presentation of credentials constitutes a denial to such request, and may result in violation of the Permit.

(23) Process Water - Any water which, during manufacturing or processing, comes into contact with or results from the production of any raw material, intermediate product, finished product, by product or waste product.

(24) Public Emergency Related Site - a project initiated in response to an unanticipated emergency (e.g., mud slides, earthquake, extreme flooding conditions, disruption in essential public services), for which the related work requires immediate authorization to avoid imminent endangerment to human health or the environment, or to reestablish essential public services.

(25) Qualified Stormwater Manager - An individual knowledgeable in the principles and practices of erosion and sediment control and pollution prevention, and with the skills to assess conditions at construction sites that could impact stormwater quality and to assess the effectiveness of stormwater controls implemented to meet the requirements of this permit.

(26) Qualifying Local Program - A municipal program for stormwater discharges associated with small construction activity that was formally approved by the division as a qualifying local program.

(27) Receiving Water - Any classified or unclassified surface water segment (including tributaries) in the State of Colorado into which stormwater associated with construction activities discharges. This definition includes all water courses, even if they are usually dry, such as borrow ditches, arroyos, and other unnamed waterways.

(28) Severe Property Damage - substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. See 40 CFR 122.41(m)(1)(ii).

(29) Significant Materials - Include, but not limited to, raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in

food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the permittee is required to report under section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA); fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with stormwater discharges.

(30) Small Construction Activity - The discharge of stormwater from construction activities that result in land disturbance of equal to, or greater than, one acre and less than five acres. Small construction activity also includes the disturbance of less than one acre of total land area that is part of a larger common plan of development or sale, if the larger common plan ultimately disturbs equal to, or greater than, one acre and less than five acres.

(31) Spill - An unintentional release of solid or liquid material which may pollute state waters.

(32) State Waters - means any and all surface and subsurface waters which are contained in or flow in or through this state, but does not include waters in sewage systems, waters in treatment works of disposal systems, waters in potable water distribution systems, and all water withdrawn for use until use and treatment have been completed.

(33) Steep Slopes: where a local government, or industry technical manual (e.g. stormwater BMP manual) has defined what is to be considered a "steep slope", this permit's definition automatically adopts that definition. Where no such definition exists, steep slopes are automatically defined as those that are 3:1 or greater.

(34) Stormwater - Precipitation runoff, snow melt runoff, and surface runoff and drainage. See 5 CCR 1002-61.2(103).

(35) Total Maximum Daily Loads (TMDLs) -The sum of the individual wasteload allocations (WLA) for point sources and load allocations (LA) for nonpoint sources and natural background. For the purposes of this permit, a TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. A TMDL includes WLAs, LAs, and must include a margin of safety (MOS), and account for seasonal variations. See section 303(d) of the CWA and 40 C.F.R. 130.2 and 130.7.

(36) Upset - an exceptional incident in which there is unintentional and temporary noncompliance with permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation in accordance with 40 CFR 122.41(n) and Regulation 61.2(114).

F. MONITORING

The division may require sampling and testing, on a case-by-case basis. If the division requires sampling and testing, the division will send a notification to the permittee. Reporting procedures for any monitoring data collected will be included in the notification.

If monitoring is required, the following applies:

1. The thirty (30) day average must be determined by the arithmetic mean of all samples collected during a thirty (30) consecutive-day period; and

2. A grab sample, for monitoring requirements, is a single "dip and take" sample.

G. OIL AND GAS CONSTRUCTION

Stormwater discharges associated with construction activities directly related to oil and gas exploration, production, processing, and treatment operations or transmission facilities are regulated under the Colorado Discharge Permit System Regulations (5 CCR 1002-61), and require coverage under this permit in accordance with that regulation. However, references in this permit to specific authority under the CWA do not apply to

stormwater discharges associated with these oil and gas related construction activities, to the extent that the references are limited by the federal Energy Policy Act of 2005.

Part II: Standard Permit Conditions

A. DUTY TO COMPLY

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Water Quality Control Act and is grounds for:

1. Enforcement action;

2. Permit termination, revocation and reissuance, or modification; or

3. Denial of a permit renewal application.

B. DUTY TO REAPPLY

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain authorization as required by Part I.A.3.k. of the permit.

C. NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE

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

D. DUTY TO MITIGATE

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

E. PROPER OPERATION AND MAINTENANCE

A permittee must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by the permittee only when the operation is necessary to achieve compliance with the conditions of this permit. This requirement can be met by meeting the requirements for Part I.B., I.C., and I.D. above. See also 40 C.F.R. § 122.41(e).

F. PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated for cause. The permittee request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition. Any request for modification, revocation, reissuance, or termination under this permit must comply with all terms and conditions of Regulation 61.8(8).

G. PROPERTY RIGHTS

In accordance with 40 CFR 122.41(g) and 5 CCR 1002-61, 61.8(9):

1. The issuance of a permit does not convey any property or water rights in either real or personal property, or stream flows or any exclusive privilege.

2. The issuance of a permit does not authorize any injury to person or property or any invasion of personal rights, nor does it authorize the infringement of federal, state, or local laws or regulations.

3. Except for any toxic effluent standard or prohibition imposed under Section 307 of the Federal act or any standard for sewage sludge use or disposal under Section 405(d) of the Federal act, compliance with a permit during its term constitutes compliance, for purposes of enforcement, with Sections 301,

302, 306, 318, 403, and 405(a) and (b) of the Federal act. However, a permit may be modified, revoked and reissued, or terminated during its term for cause as set forth in Section 61.8(8) of the Colorado Discharge Permit System Regulations.

H. DUTY TO PROVIDE INFORMATION

The permittee shall furnish to the division, within a reasonable time, any information which the division may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the division, upon request, copies of records required to be kept by this permit in accordance with 40 CFR 122.41(h) and/or Regulation 61.8(3)(q).

I. INSPECTION AND ENTRY

The permittee shall allow the division and the authorized representative, upon the presentation of credentials as required by law, to allow for inspections to be conducted in accordance with 40 CFR 122.41(i), Regulation 61.8(3), and Regulation 61.8(4):

1. To enter upon the permittee's premises where a regulated facility or activity is located or in which any records are required to be kept under the terms and conditions of this permit;

2. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit;

3. At reasonable times, inspect any monitoring equipment or monitoring method required in the permit; and

4. To enter upon the permittee's premises in a reasonable manner and at a reasonable time to inspect or investigate, any actual, suspected, or potential source of water pollution, or any violation of the Colorado Water Quality Control Act. The investigation may include: sampling of any discharges, stormwater or process water, taking of photographs, interviewing site staff on alleged violations and other matters related to the permit, and assessing any and all facilities or areas within the site that may affect discharges, the permit, or an alleged violation.

   The permittee shall provide access to the division or other authorized representatives upon presentation of proper credentials. A permittee's non-response to a request to enter upon presentation of credentials constitutes a denial of such request, and may result in a violation of the permit.

J. MONITORING AND RECORDS

1. Samples and measurements taken for the purpose of monitoring must be representative of the volume and nature of the monitored activity.

2. The permittee must retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date the permit expires or the date the permittee's authorization is terminated. This period may be extended by request of the division at any time.

3. Records of monitoring information must include:

   a. The date, exact place, and time of sampling or measurements;

   b. The individual(s) who performed the sampling or measurements;

   c. The date(s) analyses were performed

d. The individual(s) who performed the analyses;

e. The analytical techniques or methods used; and

f. The results of such analyses.

4. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in the permit.

K. SIGNATORY REQUIREMENTS

1. Authorization to Sign:

All documents required to be submitted to the division by the permit must be signed in accordance with the following criteria:

a. For a corporation: by a responsible corporate officer. For the purpose of this subsection, a responsible corporate officer means:

i. A president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or

ii. The manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

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

c. For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this subsection, a principal executive officer of a federal agency includes

i. The chief executive officer of the agency, or

ii. A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency. (e.g. Regional Administrator of EPA)

2. Electronic Signatures

For persons signing applications for coverage under this permit electronically, in addition to meeting other applicable requirements stated above, such signatures must meet the same signature, authentication, and identity-proofing standards set forth at 40 CFR § 3.2000(b) for electronic reports (including robust second-factor authentication). Compliance with this requirement can be achieved by submitting the application using the Colorado Environmental Online Service (CEOS) system.

3. Change in Authorization to Sign

If an authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization must be submitted to the division, prior to the re-authorization, or together with any reports, information, or applications to be signed by an authorized representative.

L. REPORTING REQUIREMENTS

1. Planned Changes

The permittee shall give advance notice to the division, in writing, of any planned physical alterations or additions to the permitted facility in accordance with 40 CFR 122.41(l) and Regulation 61.8(5)(a). Notice is required only when:

a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or

b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.41(a)(1).

2. Anticipated Non-Compliance

The permittee shall give advance notice to the division, in writing, of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements. The timing of notification requirements differs based on the type of non-compliance as described in subparagraphs 5, 6, 7, and 8 below.

3. Transfer of Ownership or Control

The permittee shall notify the division, in writing, ten (10) calendar days in advance of a proposed transfer of the permit. This permit is not transferable to any person except after notice is given to the division.

a. Where a facility wants to change the name of the permittee, the original permittee (the first owner or operators) must submit a Notice of Termination.

b. The new owner or operator must submit an application. See also signature requirements in Part II.K, above.

c. A permit may be automatically transferred to a new permittee if:

i. The current permittee notifies the division in writing 30 calendar days in advance of the proposed transfer date; and

ii. The notice includes a written agreement between the existing and new permittee(s) containing a specific date for transfer of permit responsibility, coverage and liability between them; and

iii. The division does not notify the existing permittee and the proposed new permittee of its intent to modify, or revoke and reissue the permit.

iv. Fee requirements of the Colorado Discharge Permit System Regulations, Section 61.15, have been met.

4. Monitoring reports

Monitoring results must be reported at the intervals specified in this permit per the requirements of 40 CFR 122.41(l)(4).

5. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule in the permit, shall be submitted on the date listed

in the compliance schedule section. The fourteen (14) calendar day provision in Regulation 61.8(4)(n)(i) has been incorporated into the due date.

6. Twenty-four Hour Reporting

In addition to the reports required elsewhere in this permit, the permittee shall report the following circumstances orally within twenty-four (24) hours from the time the permittee becomes aware of the circumstances, and shall mail to the division a written report containing the information requested within five (5) working days after becoming aware of the following circumstances:

a. Circumstances leading to any noncompliance which may endanger health or the environment regardless of the cause of the incident;

b. Circumstances leading to any unanticipated bypass which exceeds any effluent limitations in the permit;

c. Circumstances leading to any upset which causes an exceedance of any effluent limitation in the permit;

d. Daily maximum violations for any of the pollutants limited by Part I of this permit. This includes any toxic pollutant or hazardous substance or any pollutant specifically identified as the method to control any toxic pollutant or hazardous substance.

e. The division may waive the written report required under subparagraph 6 of this section if the oral report has been received within 24 hours.

7. Other Non-Compliance

A permittee must report all instances of noncompliance at the time monitoring reports are due. If no monitoring reports are required, these reports are due at least annually in accordance with Regulation 61.8(4)(p). The annual report must contain all instances of non-compliance required under either subparagraph 5 or subparagraph 6 of this subsection.

8. Other Information

Where a permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application, or in any report to the Permitting Authority, it has a duty to promptly submit such facts or information.

M. BYPASS

1. Bypass Not Exceeding Limitations

The permittees may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Part II.M.2 of this permit. See 40 CFR 122.41(m)(2).

2. Notice of Bypass

a. Anticipated bypass. If the permittee knows in advance of the need for a bypass, the permittee must submit prior notice, if possible at least ten days before the date of the bypass. ee 40 CFR §122.41(m)(3)(i) and/or Regulation 61.9(5)(c).

b. Unanticipated bypass. The permittee must submit notice of an unanticipated bypass in accordance with Part II.L.6. See 40 CFR §122.41(m)(3)(ii).

3. Prohibition of Bypass

Bypasses are prohibited and the division may take enforcement action against the permittee for bypass, unless:

a. The bypass is unavoidable to prevent loss of life, personal injury, or severe property damage;

b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

c. Proper notices were submitted to the division.

N. UPSET

1. Effect of an upset

An upset constitutes an affirmative defense to an action brought for noncompliance with permit effluent limitations if the requirements of Part II.N.2. of this permit are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review in accordance with Regulation 61.8(3)(j).

2. Conditions Necessary for Demonstration of an Upset

A permittee who wishes to establish the affirmative defense of upset shall demonstrate through properly signed contemporaneous operating logs, or other relevant evidence that:

a. An upset occurred and the permittee can identify the specific cause(s) of the upset;

b. The permitted facility was at the time being properly operated and maintained; and

c. The permittee submitted proper notice of the upset as required in Part II.L.6.(24- hour notice); and

d. The permittee complied with any remedial measure necessary to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. In addition to the demonstration required above, a permittee who wishes to establish the affirmative defense of upset for a violation of effluent limitations based upon water quality standards shall also demonstrate through monitoring, modeling or other methods that the relevant standards were achieved in the receiving water.

3. Burden of Proof

In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

O. RETENTION OF RECORDS

1. Post-Expiration or Termination Retention

Copies of documentation required by this permit, including records of all data used to complete the application for permit coverage to be covered by this permit, must be retained for at least three years from the date that permit coverage expires or is terminated. This period may be extended by request of EPA at any time.

2. On-site Retention

The permittee must retain an electronic version or hardcopy of the SWMP at the construction site from

the date of the initiation of construction activities to the date of expiration or inactivation of permit coverage; unless another location, specified by the permittee, is approved by the division.

P. REOPENER CLAUSE

1. Procedures for Modification or Revocation

   Permit modification or revocation of this permit or coverage under this permit will be conducted according to Regulation 61.8(8).

2. Water Quality Protection

   If there is evidence indicating that the stormwater discharges authorized by this permit cause, have the reasonable potential to cause or contribute to an excursion above any applicable water quality standard, the permittee may be required to obtain an individual permit, or the permit may be modified to include different limitations and/or requirements.

Q. SEVERABILITY

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

R. NOTIFICATION REQUIREMENTS

1. Notification to Parties

   All notification requirements, excluding information submitted using the CEOS portal, shall be directed as follows:

   a. Oral Notifications, during normal business hours shall be to:
      Clean Water Compliance Section
      Water Quality Control Division
      Telephone: (303) 692-3500

   b. Written notification shall be to:
      Clean Water Compliance Section
      Water Quality Control Division
      Colorado Department of Public Health and Environment
      WQCD-WQP-B2
      4300 Cherry Creek Drive South
      Denver, CO 80246-1530

S. RESPONSIBILITIES

1. Reduction, Loss, or Failure of Treatment Facility

   The permittee has the duty to halt or reduce any activity if necessary to maintain compliance with the effluent limitations of the permit. It shall not be a defense for a permittee in an enforcement action that it would be necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

T. OIL AND HAZARDOUS SUBSTANCE LIABILITY

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under Section 311 (Oil and Hazardous Substance Liability) of the CWA.

U. EMERGENCY POWERS

Nothing in this permit shall be construed to prevent or limit application of any emergency power of the division.

V. CONFIDENTIALITY

Any information relating to any secret process, method of manufacture or production, or sales or marketing data which has been declared confidential by the permittee, and which may be acquired, ascertained, or discovered, whether in any sampling investigation, emergency investigation, or otherwise, shall not be publicly disclosed by any member, officer, or employee of the Water Quality Control Commission or the division, but shall be kept confidential. Any person seeking to invoke the protection of this section shall bear the burden of proving its applicability. This section shall never be interpreted as preventing full disclosure of effluent data.

W. FEES

The permittee is required to submit payment of an annual fee as set forth in the 2016 amendments to the Water Quality Control Act. Section 25-8-502 (1.1) (b), and the Colorado Discharge Permit System Regulations 5 CCR 1002-61, Section 61.15 as amended. Failure to submit the required fee when due and payable is a violation of the permit and will result in enforcement action pursuant to Section 25-8-601 et. seq., C.R.S.1973 as amended.

X. DURATION OF PERMIT

The duration of a permit shall be for a fixed term and shall not exceed five (5) years. If the permittee desires to continue to discharge, a permit renewal application shall be submitted at least ninety (90) calendar days before this permit expires. Filing of a timely and complete application shall cause the expired permit to continue in force to the effective date of the new permit. The permit's duration may be extended only through administrative extensions and not through interim modifications. If the permittee anticipates there will be no discharge after the expiration date of this permit, the division should be promptly notified so that it can terminate the permit in accordance with Part I.A.3.i.

Y. SECTION 307 TOXICS

If a toxic effluent standard or prohibition, including any applicable schedule of compliance specified, is established by regulation pursuant to Section 307 of the Federal Act for a toxic pollutant which is present in the permittee's discharge and such standard or prohibition is more stringent than any limitation upon such pollutant in the discharge permit, the division shall institute proceedings to modify or revoke and reissue the permit to conform to the toxic effluent standard or prohibition

APPENDIX B

SWMP MAPS AND NRCS SOILS REPORTS

Conservation Planning

This report provides those soil attributes for the conservation plan for the map units in the selected area. The report includes the map unit symbol, the component name, and the percent of the component in the map unit. It provides the soil description along with the slope, runoff, T Factor, WEI, WEG, Erosion class, Drainage class, Land Capability Classification, and the engineering Hydrologic Group and the erosion factors Kf, the representative percentage of fragments, sand, silt, and clay in the mineral surface horizon. Missing surface data may indicate the presence of an organic surface layer. Further information on these factors can be found in the National Soil Survey Handbook section 618 found at the url http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ref/?cid=nrcs142p2_054223#00 .

Report—Conservation Planning

Soil properties and interpretations for conservation planning. The surface mineral horizon properties are displayed. Organic surface horizons are not displayed.

Conservation Planning–El Paso County Area, Colorado																	
Map symbol and soil name	Pct. of map unit	Slope RV	USLE Slope Length ft.	Runoff	T Factor	WEI	WEG	Erosion	Drainage	NIRR LCC	Hydrologic Group	Surface					
												Depths in.	Kf Factor	Frag-ments RV	Sand RV	Silt RV	Clay RV
8—Blakeland loamy sand, 1 to 9 percent slopes																	
Blakeland	98	5.0	—	Low	5	134	2	—	Somewhat excessively drained	6e	A	0 - 11	.10	5	85	9	5
10—Blendon sandy loam, 0 to 3 percent slopes																	
Blendon	98	2.0	—	Low	5	86	3	—	Well drained	3e	B	0 - 9	.20	3	66	19	14
11—Bresser sandy loam, cool, 0 to 3 percent slopes																	
Bresser, cool	85	2.0	200	Low	3	86	3	—	Well drained	4c	B	0 - 5	.15	—	66	19	14
12—Bresser sandy loam, cool, 3 to 5 percent slopes																	
Bresser, cool	85	4.0	180	Low	3	86	3	—	Well drained	4s	B	0 - 5	.15	—	66	19	14
28—Ellicott loamy coarse sand, 0 to 5 percent slopes																	
Ellicott	97	3.0	—	Very low	5	134	2	—	Somewhat excessively drained	7w	A	0 - 3	.17	11	84	11	5

Conservation Planning–El Paso County Area, Colorado																	
Map symbol and soil name	Pct. of map unit	Slope RV	USLE Slope Length ft.	Runoff	T Factor	WEI	WEG	Erosion	Drainage	NIRR LCC	Hydrologic Group	Surface					
												Depths in.	Kf Factor	Frag-ments RV	Sand RV	Silt RV	Clay RV
96—Truckton sandy loam, 0 to 3 percent slopes																	
Truckton	85	2.0	200	Very low	5	86	3	—	Well drained	4e	A	0 - 3	.28	—	68	24	8
97—Truckton sandy loam, 3 to 9 percent slopes																	
Truckton	85	5.0	160	Low	5	86	3	—	Well drained	6e	A	0 - 3	.28	—	68	24	8

Data Source Information

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 18, Jun 5, 2020

Reference the approved Grading and Erosion Control (GEC) Plan. El Paso County Project No. CDR2117 for SWMP map.

Qualified Stormwater Manager shall update the SWMP map to reflect current project conditions and pollutant source mapping throughout the project lifecycle.

APPENDIX C

CDPHE GUIDANCE MEMOS (COR400000 FACT SHEET, SPILL RESPONSE GUIDANCE, LOW-RISK DISCHARGE GUIDANCE)

Colorado Discharge Permit System (CDPS)
Fact Sheet to Permit Number COR400000
Master General Permit for Stormwater Discharges Associated with Construction Activities

Permit Writer: Kendra Kelly
November 1, 2018

TABLE OF CONTENTS

I. TYPE OF PERMIT

A. Permit Type:

This is a renewal of the master general permit for stormwater discharges associated with construction activities and specific non-stormwater discharges associated with construction activities. The types of discharges authorized under the permit are described in Part I.A.1. and I.A.2. of the master general permit.

B. Discharge To:

Waters of the State of Colorado.

II. GENERAL DISCHARGER INFORMATION

A. SIC Code:

1521 (General Contractors-Single Family Houses), 1522 (General Contractors–Residential Buildings, other than Single-Family), 1531 (Operative Builders), 1541(General Contractors-Industrial Buildings and Warehouses), 1542 (General Contractors-Nonresidential Buildings, other than Industrial Buildings and Warehouses), 1611 (Highway and Street Construction, except Elevated Highways), 1622 (Bridge, Tunnel, and Elevated Highway Construction), 1623 (Water, Sewer, Pipeline, and Communications and Power Line Construction), 1629 (Heavy Construction, Not Elsewhere Classified) and various other construction related SIC codes.

B. Discharge Location:

4300 Cherry Creek Drive S., Denver, CO 80246-1530 P 303-692-2000 www.colorado.gov/cdphe/wqcd
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Discharges from specific permitted construction projects statewide.

III. BACKGROUND

As required under the Clean Water Act amendments of 1987, the Environmental Protection Agency (EPA) has established a framework for permitting municipal and industrial stormwater discharges. This framework is under the National Pollutant Discharge Elimination System (NPDES) program (Note: The Colorado program is referred to as the Colorado Discharge Permit System, or CDPS, instead of NPDES.) The Water Quality Control Division ("the division") has permit regulations (5CCR 1002-61) in place. These regulations require specific types of industrial facilities that discharge stormwater associated with industrial activity (industrial stormwater), to obtain a CDPS permit for such discharge. The regulations for these industrial facilities specifically include construction activities that disturb one acre of land or more. Construction activities that are part of a larger common plan of development which disturb one acre of land or more over a period of time are also included.

The permit also discusses necessary compliance with water quality standards. Water quality standards are promulgated through the Water Quality Control Commission's rulemaking process and established regulations, which are available to the public. The rule making process includes extensive public notice and public participation components. Compliance with some water quality standards is generally confirmed with laboratory analysis. However, compliance with narrative water quality standards found in Regulation 31.11, may be confirmed without laboratory sampling in some instances. For example 31.11(1)(a)(iii) addresses "…color, odor, or other conditions in such a degree as to create a nuisance or harm existing beneficial uses…"

A. General Permits:

The Division has determined that the use of general permits is the appropriate procedure for handling most of the thousands of industrial stormwater applications within the State.

B. Industry Information:

The types of industrial activities covered under this general permit include construction related activities that meet the definition of construction activity in the general permit (Part I.E.3.) and that discharge to state waters.

C. Violations/Penalties:

Dischargers of stormwater associated with industrial activity, as defined in the CDPS regulations (5CCR 1002-61), that do not obtain coverage under this or other Colorado general permits, or under an individual CDPS permit regulating industrial stormwater, will be in violation of the Clean Water Act (CWA) and the Colorado Water Quality Control Act, 25-8-101. For facilities covered under a CDPS permit, failure to comply with any CDPS permit requirement constitutes a violation.

D. Performance History:

In 2014 the division conducted approximately 90 construction stormwater inspections. There were approximately 360 inspection findings in total. Of the 360 inspection findings 202, or 77%, were findings related to control measure violations. Of the remaining 158 findings, 95 were related to errors in the Stormwater Management Plan (SWMP). As part of the renewal process for

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this permit, the division's compliance inspection findings were reviewed and considered when making changes to this permit.

IV. SUMMARY OF MAJOR CHANGES SINCE LAST RENEWAL

When determining changes to include in the permit, the division considered feedback from internal and external stakeholders.

On November 2, 2015, the division hosted two stakeholder meetings to share the division's plans for the permit renewal, to hear what challenges were being faced by those who had to implement the permit requirements, and to hear stakeholder suggestions for improvements to the permit. The invitation to the November 2015 stakeholder meetings was extended to all active permittees at the time, as well as several industry groups, municipalities, consultants, and others who had expressed an interest in the permit to the division. Several stakeholders followed up the stakeholder meeting with informal written comments including: Colorado Contractor's Association, Douglas County, Colorado Department of Transportation, CMS Environmental Solutions, and Altitude Training. All comments received were considered by the division during the development of the permit.

On October 24, 2016 the renewal permit was put on public notice and comments were accepted until December 16, 2016. Appendix I of this fact sheet provides the division's response to comments received for the first public notice period.

On January 31, 2018 the renewal permit was public re-noticed with the limited scope of the following parts: Parts I.A.1.b.ii., I.B.1.a.ii.b., I.C.2.a.vii.i., I.C.4. I.E 1., I.E.20., I.E.25., I.E.26., I.E.33., and Part II. Public comments were accepted on the parts of the permit listed above until March 5, 2018. Appendix II of this fact sheet provides the division's response to comments for the second special public notice period.

The following is a summary of the proposed major changes from the 2007 general permit that appear throughout the entire renewal permit. Discussion of changes to specific sections of the permit follow in the next section of this fact sheet.

A. Restructuring and Reorganization:

The renewal permit has had an overall restructuring and reorganization. This was done in order to add clarity by placing each type of requirement (e.g. Stormwater Management Plan, Control measures, etc.) in its respective section. The second special public notice also included restructuring and reorganization of Part II.

B. General Permit Number Change:

The renewal permit number changed from COR030000 to COR400000. This has been done to allow for additional certification issuance numbers, as the 2007 general permit number only had enough certification issuance numbers for approximately one year after the issuance of the renewal permit.

C. Removal of Obsolete/Duplicative Requirements:

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The renewal permit removed obsolete/duplicative requirements. An example of this would be the paragraph in the 2007 general permit that allowed for uncontaminated groundwater discharges to land. The Division now has a Low Risk Discharge Guidance Policy that addresses discharges of uncontaminated groundwater to land without permit coverage.

D. Incorporation of Effluent Limitation Guidelines

The renewal permit incorporates the latest construction stormwater effluent limitation guidelines issued by the EPA and placed in the Code of Federal Regulation 40 Part 450, Construction and Development Point Source Category.

E. Terminology Change:

The renewal permit replaced the term Best Management Practice (BMP) with the term Control Measure. Regulation 61.2(9) defines best management practices as "schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of 'state waters.' BMPs also include treatment requirements, operating procedures and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage." Subsequent to the last construction stormwater general permit renewal process the EPA has been using the term "control measure" in stormwater permits. The permit uses the term "control measure" to be consistent with EPA and State terminology. The term "control measure" has a broader range of meaning than "BMP" since it includes both BMPs and "other methods." The term "control measure" better describes the range of pollutant reduction practices a permittee may implement. For example, control measures may include the following, not all of which may be encompassed within the definition of BMP:

- Specific pollution prevention practices for minimizing or eliminating the pollutants or constituents of concern in the discharge;
- Specific behavioral practices for minimizing or eliminating the pollutants or constituents of concern in the discharge;
- Narrative requirements to minimize pollutants or constituents of concern in discharges or the discharges themselves;
- Structural controls including physical structures that provide treatment in place, such as regional detention facilities, silt fence, etc.

Please note: From this point forward, the organization of the fact sheet follows the order of the renewal permit to provide clarity to the reader. The changes to specific sections of the general permit have been explained below.

Part I

A. COVERAGE UNDER THIS PERMIT

1. Authorized Discharges

a. Allowable Stormwater Discharges

i. Stormwater discharges associated with construction activity. The renewal permit, as with the 2007 permit, authorizes the discharge of stormwater associated with construction related activity that occurs at a wide variety of

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facilities and locations. The following types of construction activity and/or discharges have been a source of confusion to permittees in the past, so they are further explained here.

- Construction activity at mining facilities: Where construction activities occur that exceed the one-acre threshold and where the discharges do not commingle with process water from the facility, discharges associated with construction activities at mining facilities need permit coverage and continue to be eligible for coverage under this permit. Construction of staging areas, access roads, pads for storage of auxiliary vehicles and equipment, and structures are examples of construction activities that occur at mining facilities.

- Construction activity related to oil and gas operations: Discharges associated with construction activities related to oil and gas operations continue to need permit coverage and continue to be eligible for coverage under this general permit. The federal Energy Policy Act of 2005 exempts nearly all oil and gas construction activities from federal requirements under the Clean Water Act's NPDES stormwater discharge permit program. In January 2006, the Colorado Water Quality Control Commission held a hearing to determine what effects, if any, the change in federal law would have upon Colorado's stormwater regulations. The Commission determined that the evidence presented in the hearing demonstrated that oil and gas construction sites are not significantly different from other construction sites, especially with potential sediment yield from disturbed areas. Oil and gas construction sites in Colorado that disturb one or more acres are still required to be covered under Colorado's stormwater permitting regulations (Colorado Discharge Permit System (CDPS) regulation (5 CCR 1002-61.58)) In practice, oil and gas construction sites have the same requirements under this permit as do other types of construction. However, this permit contains some references to the federal Clean Water Act; generally, these references are not applicable to oil and gas construction sites to the extent that the references are limited by the federal Energy Policy Act of 2005. See Part I.G. of the permit.

- Discharges to Outstanding Waters: As in the past, discharges to outstanding waters are eligible for coverage under this permit. In accordance with Regulation (5 CCR 1002-31.8(1)(a)) outstanding waters "shall be maintained and protected at their existing quality." In 1988, the Water Quality Control Commission adopted the "shall be maintained and protected at their existing quality" language and deleted previous "no degradation" language. These changes were made to clarify, as EPA had done through a change to the federal water quality standards rule, that activities affecting outstanding waters which results in only temporary or short-term changes in water quality may be allowed.

  In 2016 the commission retained the requirement for outstanding waters to be maintained and protected at their existing quality, while adding an

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additional flexibility in Regulation 31 (5 CCR 1002-31.8(1)(a)) that allows "short-term degradation of existing quality … for activities that result in long-term or ecological or water quality benefit or clear public interest." As noted in the Statement of Basis and Purpose, the commission did not intend this to change the division's policy or procedures regarding determining the meaning of whether outstanding waters are being "maintained and protected at their existing quality."

The division expects that compliance with the conditions of this permit will result in stormwater discharges being controlled to the extent that all receiving waters (including outstanding waters) will be maintained and protected at their existing quality as required by Regulation (5 CCR 1002-31.8(1)(a)). This means that all applicable water quality standards and antidegradation requirements, including the outstanding waters requirement, will be met. The division has increased the site inspection frequency requirement for discharges to outstanding waters to provide additional assurance that sites will be maintained in a compliant condition.

Historically, nonfederal discharges to outstanding waters have been likely to result in a long term ecological or water quality benefit or have otherwise had a clear public interest. Throughout this permit term, the division will evaluate whether this remains the case. Furthermore, the division will evaluate whether an explicit requirement is necessary in a future permit term that covered activities result in long term ecological or water quality benefit or otherwise have a clear public interest. The division will also consider if the terms of a future permit can ensure that there is no short or long term degradation of existing quality in outstanding waters from any covered activity.

The increased requirements for discharges to outstanding waters, including the increased site inspection frequency requirement would not apply to sites that have a receiving water that flows to an outstanding water.

A map of Colorado's outstanding waters is available online at:

https://www.colorado.gov/pacific/cdphe/clean-water-gis-maps

- Construction support activities. The permit authorizes stormwater discharges from construction support activities that are dedicated to a single contiguous construction site.

- The renewal permit also adds masonry mixing stations to the currently allowable stormwater discharges from dedicated asphalt and concrete batch plants.

  This includes concrete and asphalt batch plants and borrow or fill areas that produce earthen materials, such as soils, sand, and gravel. These batch plants and borrow areas can also be covered under the division's sand

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and gravel mining processing (and other nonmetallic minerals except fuel) general permit (COR340000). However, the division has determined that discharges from facilities that meet the criteria described in the renewal permit are appropriately covered under this general permit because they are dedicated to a single construction site. The division has also determined that benchmark sampling is not required for these types of sand and gravel facilities because they more closely meet the definition of construction activities than mining activities.

b. Allowable Non-Stormwater Discharges

- The renewal permit includes irrigation return flow as an allowable non-stormwater discharge because these types of discharges are exempt from being considered point source discharges under the CWA.

- Discharges of uncontaminated groundwater to land, which were previously considered allowable non-stormwater discharges, are no longer covered in the renewal permit. These discharges were removed because the division now has a Low Risk Discharge Guidance Policy, *Water Quality Policy 27 – Uncontaminated Groundwater to Land*. This policy requires the same conditions as the 2007 general permit and therefore removes the need for this condition in the general permit. This revision does not affect a permittee's ability to dewater stormwater not comingled with groundwater discharges through appropriate control measures.

- The general permit conditionally authorizes discharges to the ground of concrete washout waste from washing of tools and concrete mixer chutes when appropriate control measures have been implemented. The permit prohibits the discharge of concrete washout waste from reaching a storm sewer system, leaving the site as surface runoff, or reaching a receiving water. Please note that the term receiving water has been defined by the general permit. The permit requires that a control measure for concrete washout waste be in place to prevent discharges of concrete washout waste from the site. The use of unlined pits to contain concrete washout waste continues to be a common practice in Colorado. The Division has further evaluated the need for a permit for discharge of concrete washout waste to the ground. The Division has determined that the use of appropriate Control Measures for on-site washing of tools and concrete mixer chutes would prevent any significant discharge to groundwater. Because pH is a pollutant of concern for washout activities, the soil must have adequate buffering capacity to result in protection of the groundwater standard, or a liner/containment shall be used. The following management practices are recommended to prevent an impact from unlined pits to groundwater:

  (1) the use of the washout site should be temporary (less than 1 year), and
  (2) the washout site should not be located in an area where shallow groundwater may be present, such as near natural drainages, springs, or wetlands

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Where adequate management practices are not followed to protect groundwater quality, the Department may require discharges to unlined pits to cease, or require the entity to obtain alternate regulatory approval through notice from either the Water Quality Control Division or the Hazardous Materials and Waste Management Division.

2. Limitations on Coverage

   This section has been added to the renewal permit for clarity. It has also been added to update the permitting with the most current stormwater permitting structure.

3. Permit Certification and Submittal Procedures

   a. Duty to apply

   This section has been added to the renewal permit for clarity. It has also been added to update the permitting with the most current stormwater permitting structure.

   Common Plan of Development or Sale: The definition of "Common Plan of Development or Sale" in this version of the permit intentionally incorporates proximity boundaries. Specifically, Part I.E. of the general permit defines "Common plan of Development or Sale" as follows: "A contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules, but remain related. The Division has determined that "contiguous" means construction activities located in close proximity to each other (within ¼ mile). Construction activities are considered to be "related" if they share the same development plan, builder or contractor, equipment, storage areas, etc. "Common plan of development or sale" includes construction activities that are associated with the construction of field wide oil and gas permits for facilities that are related."

   The division recognizes that multiple construction sites may be part of a common plan of development or sale. Specifically, Part I.A.3.a of the general permit provides a duty to apply for permit coverage for "Construction sites that are part of a common plan of development or sale;"

   The renewal permit adds a requirement for public emergency related sites to apply for coverage under the general permit no later than 14 days after the commencement of construction activities. This requirement was added in order to provide flexibility for those sites that must immediately start construction for matters of public safety. The EPA's 2017 construction stormwater general permit has a requirement similar to the requirement in the renewal permit. Please note that any discharge that occurs prior to the issuance of a permit certification is still in violation of the water quality control act regardless of the application and stormwater management plan provisions of this permit.

   b. Application Requirements

   This section contains new requirements regarding who must sign a completed permit application. The new signature requirements do not apply to those permittees that hold a discharge certification under the 2007 general permit in effect as of the time the renewal permit becomes effective.

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Co-permittee Signature Requirements: Under the Water Quality Control Act and implementing regulations, both the owner and operator must apply for permit coverage as co-permittees, unless the Division waives the requirement. In some industries the owner and operator are the same person or organization, however, this is often not the case for construction sites. The division recognizes that in some cases, the owner of the activity will not be the owner of the land.

The division does not intend to require individual homeowners within a subdivision to obtain permit coverage when the conditions of I.A.3.j., sale of residence to a homeowner have been met. Once the conditions of part I.A.3.j. of the permit are met, permit coverage will no longer be required for the lot. In those cases where the lot is greater than one acre of construction activity related disturbance, as defined by the permit, the permittee will be required to maintain permit coverage through final stabilization of the lot. In those cases where the operator is building a single home that is either part of a larger common plan of development or the lot is one acre or more of disturbance, the operator may assume the responsibility of both the owner and the operator. In those cases where the homeowner is assuming the role of both the owner and the operator, the homeowner would have to obtain or maintain permit coverage.

The Water Quality Control Act and implementing regulations do not include definitions of owner or operator. The 2007 construction stormwater permit defines the operator as the entity that has day-to-day supervision and control of activities occurring at the construction site. The 2007 permit states that this can be the owner, the developer, the general contractor or the agent of one of these parties, in some circumstances. The 2007 permit states that it is anticipated that at different phases of a construction project, different types of parties may satisfy the definition of 'operator' and that the permit may be transferred as the roles change. In the 2007 construction stormwater general permit the division waived the requirement for owners to apply and only the operator is required to apply. For most construction sites in Colorado, the owner is not currently a permittee.

The division has had ongoing dialogue with construction owners and operators during this permit term regarding the site owner commitment to compliance with the requirement to obtain permit coverage and comply with permit requirements and the option of co-permittees as a potential solution to the problem. The issue of site owner commitment has been raised by operators during compliance oversight, and enforcement settlement discussions. It has also been brought to the division's attention through discussions with stakeholders.

In 2012, the division collaborated with the construction industry and other interested persons to develop a more responsive and streamlined process for preventing violations of the Water Quality Control Act in regards to construction permitting and of violations of the construction stormwater permit. This stakeholder process was conducted consistent with the requirements of HB12-1119 and the results are summarized in a report that was provided to the General Assembly of the State of Colorado on December 1, 2012. Site owner commitment was raised as a potential

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root cause for variable levels of compliance throughout the industry and a cause for creating inequities during the bidding process. Stakeholders explained that when the owner is not a permittee, the owner may require the contracted site operator to obtain the permit and be responsible for all aspects of permit compliance. In other cases, the owner may develop a stormwater management plan, incorporate it into the contract documents, and then require the operator to implement the day-to-day compliance responsibilities. An issue that was raised is situations where deficiencies with the plan are identified and situations where changes need to be made to the plan and other control measures on site. More specifically, it was discussed that some project owners may not want to pay for changes in the stormwater management plan and controls, exposing only the operator who holds the permit certification to liability including civil penalties. The owner may also accept bids from operators that do not include adequate costs for stormwater permit compliance, therefore discouraging such compliance and giving a competitive advantage to contractors who willingly or unintentionally fail to include adequate compliance costs in bids and may subsequently operate out of compliance. It was generally agreed upon by participants in the stakeholder process that when it is the operator that obtains the permit, the owner is likely to not be as engaged or concerned with permit compliance, which in some situations is contributing to non-compliance.

Issues associated with how the lack of real or perceived liability for owners affects noncompliance was discussed extensively during the HB12-1119 stakeholder process. However, there was no clear consensus on a solution or if State requirements or oversight was even the proper avenue for a solution. The division committed to ongoing dialogue on this issue with the regulated community and specifically to reevaluate the topic during the public process associated with the Construction Stormwater Permit renewal. Ideas discussed in this stakeholder process included requiring owners to obtain separate or dual permit coverage for their sites and requiring that applications identify the project owner. It was also discussed that more time should be spent evaluating EPA's recent renewal of the national general permit and other state permits to further inform the discussion.

The division further evaluated EPA's Construction Stormwater General Permit (CGP) to inform the decision. The CWA and federal implementing regulations differ from Colorado's in that when a facility or activity is owned by one person but is operated by another person, it is the operator's duty to obtain a permit. The question of who needs to obtain permit coverage, given all of the people involved on a construction site, was addressed in depth during development of the EPA's 1998 CGP. In that general permit renewal, the EPA included a definition of operator, as follows:

> "Operator for the purpose of this permit and in the context of storm water associated with construction activity, means any party associated with a construction project that meets either of the following two criteria:
> 1. The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or
> 2. The party has day-to-day operational control of those activities at a project which are necessary to ensure compliance with a storm water pollution

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prevention plan for the site or other permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the SWPPP or comply with other permit conditions)."

The EPA made it clear in the 1998 CGP definition of operator that any party that meets **either** of the two criteria must obtain permit coverage.

The Division evaluated other state permits to further inform the decision and found there is a trend nationally to require both owners and operators to be permittees and to sign and actively acknowledge their role in compliance with the construction general permit. The division found that at least one state, Oklahoma, implemented this requirement following an economic downturn to address a root cause problem of permitted operators "walking away" from construction and development projects and leaving disturbed land unstabilized. In that case a co-permittee approach was adopted as a tool to leverage site owner compliance with site stabilization requirements.

The division also evaluated whether MS4 practices in Colorado require both owners and operators to obtain permit coverage when implementing construction site program requirements. The division found that some MS4s require co-permittees and some do-not.

The division raised the possibility of including a co-permittee requirement in the renewal permit at the stakeholder meetings held November 2, 2015. The division solicited input on this decision at the meeting and in writing in follow up to the meeting.

- The majority of those who provided input agreed with the recommended approach to include a co-permittee requirement.
- One entity recommended against the requirement and another recommended that in cases where the owner is a permittee, the requirement for the operator to obtain permit coverage be waived.
- Several stakeholders expressed concern that a requirement to obtain signatures from both the owner and operator would extend application timelines and potential result in project delays, particularly in the absence of an on line application system.

The renewal permit adds a requirement for the owner and operator of a construction site to be co-permittees. Both the owner and operator must sign the application. The permit includes definitions of owner and operator. The definition of owner is consistent with EPA's first criterion of operator, and the definition of operator is consistent with EPA's second criterion for operator. These definitions are also consistent with those adopted by many other states. While the division did not adopt a stakeholder recommendation to waive the requirement that operators sign the application, the renewal permit does allow owners to sign as operators in cases where the owner is acting as both the owner and the operator.

The division has included a requirement that both the owner and the operator sign the permit application. The division has decided to apply the requirement only to

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new applications received after the renewal permit becomes effective. This was done to eliminate the need to administer an application supplement for the thousands of renewal applications already received to obtain co-permittee information and signatures.

Further, the division is actively working on development of an online permit application system, Colorado Environmental Online Services (CEOS) that negates the need to send paper copies of signed applications, and would allow owners and operators to sign the permit application in the same day. The division has delayed the effective date of the permit renewal to allow adequate time to finalize the CEOS application tool to address concerns about possible impacts in terms of increased time for the permit application process to obtain dual signatures when owners and operators are differing entities. The Division also intends to update its construction stormwater permitting guidance with detailed guidance and examples of what does and does not constitute an owner and operator.

c. Division Review of Permit Application

The renewal permit does not retain automatic coverage after ten calendar days of receipt of the application by the division. This is consistent with current division general permit renewal permits and the division has consistently met the 10 day goal for reviewing applications and authorizing coverage where received applications are complete. The renewal permit no longer authorizes automatic coverage solely based on the receipt of an application.

Please note that Regulation 61.4(3)(a)(i) requires at least 90 days before the date on which construction is to commence, unless the divisions determines that differential approval dates are required. For construction stormwater, the division recognizes that a 90 day application period is not always possible given the nature of construction projects and the construction industry. It has therefore has elected to allow permittees to apply 10 days in advance of construction activities commence.

d. Alternative Permit Coverage

This section has been added to the general permit for clarity. It has also been added to update the permitting with the most current stormwater permitting structure.

e. Submittal Signature Requirements

This section of the permit has been added to incorporate the certification required to be included with submittals to the division. The section acknowledges and provides requirements for field wide coverage. This section is only intended to cover oil and gas facilities at this time.

f. Permit Coverage without Application

Qualifying Local Programs

The renewal permit includes the language from the 2007 permit that allows permit coverage without an application for stormwater discharges associated with small construction activity (i.e., one to five acre disturbed area sites), for sites covered by a qualifying local erosion and sediment control program (Qualifying Local Program). A Qualifying Local Program is a municipal stormwater program for stormwater

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discharges associated with small construction activity that has been formally approved by the Division. The requirements for Qualifying Local Programs are outlined in Part CCR 1002 61.8(12) of the Colorado Discharger Permit System Regulations. At the time of development of this renewal permit, there are three approved Qualifying Local Programs in place in Colorado: the City of Golden, the City of Lakewood, and the City of Durango. These programs were developed and approved without consideration of requirements that have been incorporated through this renewal, including requirements associated with the federal effluent limitation guidelines. The division expects that the existing Qualifying Local Programs will update their requirements to become aligned with the updated requirements included in this permit, such as those associated with the federal effluent limitation guideline. However, those changes will take time. Therefore, the division has clarified in the renewal permit that if the requirements of the Qualifying Local Program are equivalent to the requirements of this renewal permit, the requirements of the Qualifying Local Program are incorporated by reference into the renewal permit. The division has also clarified that, if the requirements of the Qualifying Local Program are *less stringent* than the requirements of this renewal permit, the requirements of the renewal permit apply *in addition to* the requirements of the Qualifying Local Program. The division considered and determined that providing a compliance schedule for qualifying local programs to implement the renewal permit requirements into their construction sites programs was unnecessary.
The division intends to review and approve qualifying local programs requirements prior to the effective date of the renewal permit.

g. Reassignment of Permit Coverage

Permittees should submit the Notice of Reassignment Form when construction activity at the site is not complete, but the permittee no longer has operational control for a specific portion of the site. Permittees that do not have operational control over compliance with the permit conditions can therefore transfer permit coverage to the newly responsible owner or operator.

If the owner or operator cannot obtain a signature from the newly responsible owner or operator, then they must provide the division proof of due diligence attempts to obtain a signature along with a notice of termination request form. For example, due diligence could include a receipt from a certified mailed letter that contains a request to sign the applicable form.

h. Transfer of Permit Coverage

Permittees should utilize the division's transfer of permit coverage form in instances where the owner or operator no longer has operational control over the construction site. If the owner or operator cannot obtain a signature from the newly responsible owner or operator, then they must provide the division proof of due diligence attempts to obtain a signature along with a notice of termination request form.

If the operator is no longer responsible for a site they may transfer permit coverage to the owner, or to a newly responsible operator. The division generally considers a permittees presence onsite as well as whether or not they are conducting any work

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onsite to be significant when determining operational control. If a permittee is no longer on the site and is no longer conducting work at the site, then they no longer have operational control over the compliance with the permit conditions. It is important to note that this may only occur if the operator no longer is responsible for the site. If the operator is responsible for reaching final stabilization they may not transfer coverage to the owner. Instead, both the owner and operator may terminate once all permit conditions have been met for inactivation.

i. Termination of Permit Coverage

Under the renewal permit, permittees shall only submit a termination application when they have met all the requirements of the permit, including the final stabilization requirements.

j. Sale of Residence to Homeowner

The renewal permit does not include any changes to this section.

k. Permit Expiration and Continuation

Language has been added to this section for clarity. It has also been added to update the permitting with the most current stormwater permitting structure.

Additionally, changes have been made to this section to correct the internal inconsistency regarding reapplication requirements in the previous permit and Regulation 61.4. Comments were received requesting consistency between Part II.B.12. (now Part II.X.) and this section. The division elected to allow 90 days for reapplication at the time of expiration of the general permit.

B. EFFLUENT LIMITATIONS

This permit does not impose numeric effluent limits or require submission of effluent monitoring data in the permit application or in the permit itself. The permit instead imposes practice-based effluent limitations for stormwater discharges through the requirement to develop and implement a Stormwater Management Plan (SWMP). The narrative permit requirements include prohibitions against discharges of non-stormwater (e.g., process water). See Part I.A.1.b. of the permit.

1. Requirements for Control Measures Used to Meet Effluent Limitations

The division has added requirements for specific structural and nonstructural control measures. This was done primarily based on a desire to add clarity of requirements for those control measures that continually required corrective actions based on division inspection findings. In 2014 the division conducted approximately 90 construction stormwater inspections. There were approximately 360 inspection findings in total and of those 220, or 78%, were control measure findings.

The renewal permit also provides requirements for the permittee to select, implement and maintain control measures at a permitted construction site that adequately minimize pollutants in the discharges to assure compliance with the terms and conditions of the permit. Part I.B.1. (et. Seq.) of the permit includes basic design standards for control measures implemented at the site. Facilities must select, install,

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implement, and maintain appropriate control measures, following good engineering, hydrologic and pollution control practices. Control measures implemented at the site must be adequately designed to control all potential pollutant sources associated with construction activity to prevent pollution or degradation of state waters. Pollution is defined in CDPS regulations (5 CCR 1002-61) as man-made or man-induced, or natural alteration of the physical, chemical, biological, and radiological integrity of water. Utilizing industry-accepted standards for control measure selection that are appropriate for the conditions and pollutant sources present will typically be adequate to meet these criteria, since construction control measures are intended to prevent the discharge of all but minimal amounts of sediment or other pollutants. However, site-specific design, including ongoing assessment of control measures and pollutant sources, is necessary to ensure that control measures operate as intended.

The general permit did not incorporate the EPA effluent limitation guideline requirement to require vehicle washout waste to flow through a sediment basin or equivalent measure because this type of discharge is not authorized under the general permit. The division determined that because there is no allowable discharge, there is no need for an effluent limitation.

a. Stormwater Pollution Prevention

The renewal permit adds requirements for both structural and nonstructural control measures. The control measures that have been added are considered to meet industry standards and best management practices for both stormwater and non-stormwater discharges. Control measures can be implemented to control both run-on and run-off from construction sites.

Vehicle tracking – The division recognizes that fine grains (i.e., staining) may remain visible on the surfaces of off-site streets, other paved areas, and sidewalks after you have implemented sediment removal practices.

Maintaining pre-existing vegetation – The division added this requirement as part of the EPA effluent limitation guideline requirements.

Stabilization Requirements

Temporary Stabilization:
The renewal permit incorporates an EPA Effluent Limitation Guideline requirement that a timeline must be implemented for temporary stabilization on construction sites. The division determined that 14 days is an achievable amount of time to achieve temporary stabilization based on typical current industry practices as well as a review of other state construction stormwater general permit requirements. The other state general permits that were reviewed include, but are not limited to, Utah, Nevada and Arizona. These states have a similar climate type as Colorado and also require 14-day temporary stabilization.

Temporary stabilization measures include, but are not limited to, the following as appropriate: tracking, terracing, cross-contour ripping/grooving, mulching, or other

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similar practices. Where temporary stabilization measures are not appropriate, adequate sediment control measures must be implemented

The renewal permit also adds clarity to the requirement to remove temporary control measures once final stabilization has achieved. The 2007 permit states the following:

> Part I.C.4.b) "Final stabilization practices for obtaining a vegetative cover should include, as appropriate: seed mix selection and application methods; soil preparation and amendments; soil stabilization practices (e.g., crimped straw, hydro mulch or rolled erosion control products); *and appropriate sediment control BMPs as needed until final stabilization is achieve*d; etc." (emphasis added)

The division attempted to clarify that once final stabilization is achieved the temporary control measures shall be removed before the discharge certification is terminated.

Final Stabilization:
The renewal permit does not include any changes to this section.

The division may approve alternative final stabilization criteria for specific operations. The permittee must provide a written request to the division with information regarding why the site cannot meet the final stabilization requirements in the permit. The written request should include an explanation of how the site is meeting an alternative approach and is minimizing the discharge of construction related pollution into state waters.

The division has a memorandum available that discusses alternative final stabilization methods that do not require specific approval. The guidance document is located on the division's website and is titled "Final Stabilization requirements for stormwater construction permit termination – Alternatives to the 70% plant density re-vegetation requirement".

b. Maintenance

The renewal permit adds the definition of a control measure requiring routine maintenance. This is consistent with the Phase II Municipal Separate Storm Sewer System (MS4) general permits (COR090000 and COR080000) that became effective on July 1, 2016.

Based on construction site audits conducted during the renewal of the Phase II MS4 general permits (COR090000 and COR080000), the division has determined that inadequate sediment controls are a primary factor in construction site noncompliance. The division has determined that minimum requirements are needed and has provided minimum requirements for control measures for all construction sites.

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c. Corrective Actions

The division added a requirement for permittees to take corrective action (Part I.E.) for inadequate control measures. This requirement was added to provide additional clarity on actions required when an inspection results in a finding related to control measures. The permit defines the term 'control measures requiring routine maintenance' and intentionally distinguishes these types of control measure findings from those that are defined in the permit as 'inadequate control measures'. Those control measures that meet the definition of inadequate control measure must follow the steps of Part I.E. of the permit. This requirement was also added to be consistent with federal and state stormwater permits.

The division has added the definition of an inadequate control measure. This is consistent with the Phase II Municipal Separate Storm Sewer System (MS4) general permits (COR090000 and COR080000) that became effective on July 1, 2016.

2. Discharges to an Impaired Waterbody

No substantive changes were made to this section from the previous general permit. Based on public comment received this section has been moved from Part I.E. to Part I.B.2.

An example of when the division would require sampling would be when a Total Maximum Daily Load (TMDL) includes a Waste Load Allocation (WLA) for construction, which might require monitoring for a pollutant of concern.

3. General Requirements

This section of the permit does not incorporate any new requirements, however it does include a narrative Water Quality Based Effluent Limitation (WQBEL). A discussion on the narrative WQBEL is below:

The permit requires that stormwater discharges from construction activities shall not cause, have the reasonable potential to cause, or measurably contribute to an excursion above any water quality standard, including narrative standards for water quality. This condition is the basis for all CDPS Discharge permits, and addresses the need to ensure that waters of the State maintain adequate water quality, in accordance with water quality standards, to continue to meet their designated uses. In most cases, control measures can be adequate to meet applicable water quality standards. If water quality impacts are noted, or the Division otherwise determines that additional permit requirements are necessary, they are typically imposed as follows:

- at the renewal of this general permit or through a general permit specific to an industrial sector (if the issue is sector-based);
- through direction from the Division based on the implementation of a TMDL (if the issue is watershed-based); or
- if the issue is site-specific, through a revision to the certification from the Division based on an inspection or SWMP review, or through an individual permit.

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C. STORMWATER MANAGEMENT PLAN (SWMP) REQUIREMENTS

1. SWMP General Requirements

   The 2007 general permit requires the SWMP to be completed prior to applying for coverage. The renewal permit adds the flexibility for the SWMP to be completed prior to commencement of construction activities instead of prior to applying for permit coverage.

   It also adds flexibility for public emergency related sites to have up to 14 days to create a SWMP in accordance with the permit requirements.

2. SWMP Content

   Qualified Stormwater Manager: The permit SWMP conditions include the requirement for dischargers to provide the title and name of the site designated qualified stormwater manager. The qualified stormwater manager, is defined by the renewal permit as the following:
   "Qualified Stormwater Manager: An individual knowledgeable in the principles and practices of erosion and sediment control and pollution prevention, and with the skills to assess conditions at construction sites that could impact stormwater quality and to assess the effectiveness of stormwater controls implemented to meet the requirements of this permit."
   This definition and additional language were added to the renewal permit so that permittee(s) ensure that the individuals responsible for meeting the requirements of this permit are properly trained on up-to-date stormwater management practices in the area of construction stormwater. Proper training can include, but is not limited to, proper selection, implementation, operation and maintenance of various structural and non-structural control measures, and proper documentation of various permit requirements (e.g. inspections, corrective actions and SWMP documentation) The division is not requiring specific training criteria in order to be considered a qualified stormwater manager and does not recommend any specific course. In this case on-the-job or in-house training would be considered acceptable.

   Implementation of Control Measures: The renewal permit requires that permittee(s) obtain a documented use agreement for any control measures outside of the permitted area that are being utilized by the construction site for compliance with the conditions of the permit. The documented use agreement must include installation specifications, design specifications, and maintenance requirements. The division recommends that the documented use agreement also include a maintenance agreement between all parties utilizing the control measure.

   Site Description: The stormwater management plan adds a requirement to document all locations on the construction site where stream crossings will occur. The division has determined that the areas upland of the stream crossing are potential sources of pollutants that may reach surface water. Please note that the construction stormwater general permit covers discharges of stormwater into state waters. State regulations for these discharges are not exempted by obtaining coverage from Army Corps of Engineers under section 404 of the CWA.

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Site Map: The permit adds requirements to provide the locations of the following items:

- locations of all structural and non-structural control measures;
- locations of pre-existing vegetation maintained around state waters; and
- locations of all stream crossings.

These items were added as site map requirements based on the addition of these requirements throughout the permit.

The permit requires that the site map contain the:
"locations of springs, streams, wetlands and other state waters including areas that require pre-existing vegetation be maintained within 50 feet of a state water;"
To address this requirement, all state waters located within the permitted boundary should be included in the site map.

The permit also requires that any stream crossings (and associated control measures) located within the permitted boundary be included in the site map.

The addition of "including areas that require pre-existing vegetation be maintained within 50 feet of a state water" was meant to reiterate that pre-existing vegetation is required to be maintained, unless infeasible. This requirement can be met by listing all of those springs, streams, wetlands and other receiving waters that are within the permitted boundary.

3. SWMP Review and Revisions

The renewal permit adds a requirement to document the date and description of revisions made the SWMP. The requirement has been added to align the permit with current industry practices along with other states' and the EPA's current general permit requirements.

The division added language to this section regarding compliance with SWMP revisions. This was added to further clarify the language in the 2007 general permit which states the following:
Part I.D.5.d)1) "the SWMP shall be revised *as soon as practicable*, but in no case more than 72 hours after the change(s) in BMP installation and/or implementation occur at the site (emphasis added)"
The division received input regarding this terminology over the course of the 2007 permit term. The added language in this section is an attempt to further clarify the requirements for SWMP revisions. The language is meant to allow the permittee(s) the flexibility to add proposed changes to the SWMP prior to implementation in the field and go back and amend those proposed changes, as needed, once the control measure has been implemented in the field. Permittees are considered non-compliant with the permit's SWMP requirements until the control measure changes implemented in the field have been reflected in the site SWMP.

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4. SWMP Availability

   The renewal permit contains only editorial changes to this section.

D. SITE INSPECTIONS

The renewal permits adds a requirement for construction sites to conduct the first site inspection within 7 calendar days of the commencement of construction activities on site. This has been added to provide clarity regarding when construction site inspections should be initiated on construction sites.

1. Person Responsible for Conduction Inspections

   The renewal permit adds a requirement for site inspections to be conducted by the site designated qualified stormwater manager.

2. Inspection Frequency

   The renewal permit adds the ability to choose either a 7 day or 14 day for post storm inspection frequency. This addition is in line with the 2007 construction stormwater general permit issued by the EPA. The added requirement allows permittee to determine which inspection frequency is most appropriate for their site conditions.

3. Inspection Frequency for Discharges to Outstanding Waters

4. Reduced Inspection Frequency

   The renewal permit does not include any changes to this section.

5. Inspection Scope

   The renewal permit attempts to add clarity to the inspection scope requirements in the 2007 general permit by expanding on what is required during a construction site inspection.

   The permit also adds a requirement for the frequency of the inspection to be described on each inspection report. This requirement was added so that it is clear if the permittee(s) are utilizing the 7-day or 14-day with post storm inspection frequency.

6. State or Federal Inspections

   The renewal permit does not include any changes to this section.

E. DEFINITIONS

The division has updated some definitions in the renewal permit to align with the recently issued Phase II Municipal Separate Storm Sewer System (MS4) General Permits.

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"Common Plan of Development or Sale" - Activities located within ¼ of a mile of each other are "contiguous". The division has utilized the ¼ mile as a general rule of thumb for determining if a project is contiguous based on previous determinations by the division and by EPA. This definition is consistent with other division issued stormwater general permits.

The division has also added definitions based on public comment requests.

The division has also added or altered the following definitions to provide additional clarity and/or consistency with the Phase II Municipal Separate Storm Sewer System (MS4) General Permits:

- "Bypass" – This definition has been added based on public comment received.
- "Common Plan of Development or Sale" – This definition was altered based on public comment received.
- "Control Measures Requiring Routine Maintenance"
- "Good Engineering, Hydrologic and Pollution Control Practices"
- "Inadequate Control Measure" – This definition was altered based on public comment received.
- "Infeasible" This definition was taken directly from the EPA construction stormwater effluent limitation guideline.
- "Minimize"
- "Municipality" – This definition has been altered based on public comment received.
- "Municipal Stormwater Management Program"
- "Owner" – This definition was adjusted based on public comments received.
- "Permittee"
- "Presentation of Credentials"
- "Public Emergency Related Site"
- "Qualified Stormwater Manager"
- "State waters" – This definition has been added based on comments received.
- "Steep Slopes"
- "Total Maximum Daily Load"
- "Upsets"

The following definitions were removed based on public comments received:

- "Outfall"

F. SIGNATORY REQUIREMENTS

1. Authorization to Sign

   This section has been amended in the renewal general permit in an attempt to clarify when a document needs to be signed by the Owner or Operator, or an authorized representative, or by the sites qualified stormwater manager.

   a. Reports required for submittal to the division:
   The permit adds requirements for cases where the Owner, Operator, or an authorized representative must sign the documents. An example of a document that is required for submittal to the division, would be a discharge monitoring report

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associated with a Total Maximum Daily Load (TMDL) as discussed in Section I.B.2 (if applicable) of a transfer of ownership.

b. Reports not required for submittal to the division:

2. The permit adds requirements for cases where the site designated qualified stormwater manager must sign the documents. Examples of these types of documents include the stormwater management plan or inspection reports. Signature Certification
   a. The division did not make any changes to the signature certification for documents required for submittal.
   b. The division added a signature certification requirement for documents maintained for compliance with the permit. This was done to further incorporate the requirement for a qualified stormwater manager.

3. Change in Authorization to Sign
   The renewal permit does not include any changes to this section.

G. RETENTION OF RECORDS

1. On-site Retention
   The permit provides flexibility in allowing on-site SWMP to be retained in an electronic or hardcopy format. The renewal permit does not include any changes to this section.

H. MONITORING

The renewal permit includes the language in the 2007 permit that allows the division the option of addressing monitoring on an individual permittee case-by-case basis. With this requirement, the division may include monitoring in individual permittee certifications as reasonably required.

I. Oil and Gas Construction

This section has been added to the permit based on public comments received. The public comments received requested the language in this section be copied from the previous permit and added to the renewal permit.

V. REFERENCES

A. **Colorado Discharge Permit System Regulations, Regulation No. 61, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective June 30, 2015.**

B. **Code of Federal Regulations (40 CFR Part 450, Construction and Development Point Source Category), Office of the Federal Register, Government Printing Office, effective March 6, 2014.**

C. **Water Quality Policy 27(WQP27, Low Risk Discharge Guidance, Discharges of Uncontaminated Groundwater to Land), Colorado Department of Public Health and Environment, Water Quality Control Division, effective September, 2009.**

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Low Risk Discharge Guidance
Discharges of Uncontaminated Groundwater to Land

Originally Issued September 2009
Revised August 8, 2017

Table of Contents

Scope and Purpose of Modification

This revised guidance document is effective August 4, 2017. In addition to organizational and editorial revisions, the following substantive modifications were made:

- Additional information was added regarding determining if the discharge is uncontaminated. Refer to the Criteria section.
- Removed the reference to solid waste permitting in the background and discussion portion of the document. Uncontaminated groundwater would typically not be regulated as a solid waste, and therefore the discussion was not likely to be applicable to discharges covered by this guidance. However, it remains the responsible parties' obligation to ensure compliance with other applicable laws and regulations, including solid waste requirements.
- The requirement that the discharge be returned to the same aquifer that it was drawn from was added. This is consistent with the intent of the original version, as identified by the examples of covered discharges provided: construction dewatering, subterranean or foundation dewatering, uncontaminated vault dewatering, and utility work.

Background and Discussion

This discharge policy guidance has been developed in accordance with WQP-27, Low Risk Discharges Policy. This guidance is only applicable to discharges meeting the low risk discharge criteria and conditions identified below. **Refer to the Alternative Disposal Options section at the end of this document for additional information for discharges that do not meet the criteria and conditions of this guidance.**

The division has issued general permits for point source discharges of groundwater to land, as identified in the Alternative Disposal Options section. However, for the category of point source discharges that meet the criteria and conditions outlined in this document, the division has determined it is appropriate to manage the discharges through the development of guidance instead of through pursuing permit coverage. When the criteria and provisions of this guidance are met, the division will not actively pursue permitting or enforcement for discharges of groundwater to land, unless on a case-by-case basis, the division finds that a discharge has resulted in an adverse impact to the quality of any state waters receiving the discharge.

Discharges of uncontaminated groundwater to land that are typically associated with short term or intermittent

discharges are not expected to contain pollutants in concentrations that are toxic, or in concentrations that would cause or contribute to a violation of a water quality standard for ground water. A large number of these types of discharges occur state-wide every year, which requires a resource-intensive effort to permit without a resulting general benefit to environmental quality in the vast majority of situations.

Discharges of uncontaminated groundwater to land that may be covered under this guidance document when all the provisions in the document are adhered to may include, but are not limited to: construction dewatering, subterranean or foundation dewatering, uncontaminated vault dewatering, and utility work.

Criteria, Conditions, and Control Measures

- **Definitions**
  - **Control Measures:** are any best management practice or other method used to prevent or reduce the discharge of pollutants to waters of the state.

- **Low Risk Discharge Criteria**

  This guidance is applicable to point source discharges that meet the following criteria and that meet the conditions listed in the next section. Refer to the Alternative Disposal Options section for guidance on addressing water not meeting these criteria.

  - The source of the discharge must solely be uncontaminated groundwater or uncontaminated groundwater combined with stormwater. Refer to the guidance in the Control Measure section below for information on identifying potentially contaminated groundwater.
  - To be considered uncontaminated, the source ground water must not contain pollutants in concentrations that exceed water quality standards for groundwater applicable to the receiving groundwater. For ground water for which standards have not already been assigned in Regulation 42, Site-Specific Water Quality Classifications and Standards for Ground Water (5 CCR 1002-42), pollutants shall not exceed the criteria set forth in Tables 1 through 4 of "The Basic Standards for Ground Water," in Regulation 41, The Basic Standards for Ground Water (5 CCR 1002-41). This guidance does not include consideration of criteria for groundwater based on existing ambient quality as of January 31, 1994, as set forth in Regulation No. 41.5.C.6.b.i(A). Because a site-specific evaluation and determination is necessary for application of such criteria, the division has determined that consideration of this allowance is not appropriate under this guidance. The source groundwater must be from the same aquifer that the water will be returned to. Specifically, this guidance is not applicable to discharges from deep wells that draw water from confined aquifers which will often have substantially different water quality compositions than the shallower unconfined aquifers to which the water will be discharged.
  - The discharge must be to land. Point source discharges to surface waters of the state, storm sewers, or other drainage conveyance systems are not covered by this guidance.

- **Conditions**

  The following conditions must be met by anyone discharging wastewater in accordance with this guidance:

  - **Prohibition of pollutants in the discharge:**
    - No chemicals may be added.
    - If the discharge is from vaults or similar structures, the discharge cannot be contaminated by process materials used, stored, or conveyed in the structures, or by introduced surface water runoff from outside environments that may contain oil, grease, and corrosives.
    - A visible sheen must not be evident in the source water or discharge.
  - **Exclusion of Process Discharges:**
    - The groundwater shall not be used in any additional processes. Processes include, but are not limited to, any type of washing, heat exchange, or manufacturing.
  - **Controlling the discharge:**
    - The groundwater discharge cannot leave the operational control of the entity administering the land application. The owner of the property where the discharge is occurring must have prior knowledge and grant permission for the land application.
    - Land application must be conducted at a rate and location that does not allow for any runoff into state waters or other drainage conveyance systems, including but not limited to streets, curb and

gutter, inlets, borrow ditches, open channels etc. If the land application is to agricultural land, it must not reach or have the potential to reach an agricultural ditch. Discharges to drainage conveyance systems as described above are a discharge to surface water that require a discharge permit and are not covered under this guidance document.

- Land application must be conducted at a rate that does not allow for any ponding of the groundwater on the surface, unless the ponding is a result of implementing control measures that are designed to reduce flow velocity. If the control measures used result in ponding, the land application must be done in an area with a constructed containment, such as an excavation or bermed area with no designed outfall. The constructed containment shall prevent the discharge of the ponding water offsite as runoff.

❖ **Compliance with construction stormwater discharge permits:** If the discharge is located at a facility covered by a CDPS General Permit for Stormwater Discharge Associated with Construction Activities, the requirements in that permit associated with the discharge of groundwater must be complied with, including identification in the Stormwater Management Plan.

❖ **Controlling erosion:** The discharge shall not cause erosion of a land surface that could cause pollution of the receiving water. Signs of visible erosion that have the potential to cause pollution without downstream controls measures implemented include the formation of rills or gullies on the land surface. Energy dissipation devices designed to protect downstream areas from erosion by reducing velocity of flow (such as hose attachments and erosion controls) may be necessary to prevent erosion.

❖ **Controlling pollutant potential of deposited sediment:** Control measures shall be implemented to prevent any sediment deposited during land application from being transported by stormwater runoff to surface waters or other conveyances.

❖ **Additional Requirements and Property Rights:**

- All discharges must comply with the lawful requirements of federal agencies, municipalities, counties, drainage districts, ditch owners, and other local agencies regarding any discharges to storm drain systems, conveyances, ditches or other water courses under their jurisdiction.
- The guidance included in this document in no way reduces the existing authority of the owner of a storm sewer, ditch owner, or other local agency, from prohibiting or placing additional conditions on the discharge.
- The discharge shall not result in flooding of neighboring property, streets, gutters or storm sewers. The discharge must be diverted from building foundations or other areas that may be damaged from ground settling or swelling.

➢ **Implementation of Control Measures**

Control measures should be implemented as necessary to meet the conditions above, by anyone discharging in accordance with this guidance. The following control measures have been developed by the division to help ensure that the discharge will not negatively affect water quality. Refer to the Alternative Disposal Options section for guidance where these control measures cannot be implemented.

❖ **Identifying potentially contaminated groundwater:** It the groundwater is located within 1 mile of a landfill, abandoned landfill, mine or mine tailing area, a Leaking Underground Storage Tank (LUST), Brownfield site, or other area of contamination, there is an increased likelihood that groundwater contamination exists. In those cases additional work is appropriate to determine if your dewatering area is in an area of contamination. The following is a list of contamination and plume resources and is helpful when determining if your dewatering area is in an area of contamination, however the list is not all inclusive and in some cases site-specific characterization of groundwater may be necessary.

CDPHE Environmental Cleanup Web Page (refer to the resources under "sites and facilities"):
https://www.colorado.gov/pacific/cdphe/categories/services-and-information/environment/environmental-cleanup#sites

EPA Cleanups in My Community Maps and Lists:
https://www.epa.gov/cleanups/cleanups-my-community

- All control measures used to meet the provisions of this guidance document must be selected, installed, implemented and maintained according to good engineering, hydrologic and pollution control practices. These control measures must be adequately designed to provide control for all potential pollutant sources associated with the discharge of uncontaminated groundwater to land.

- The discharge should be routed in such a way that it will not contact petroleum products/waste, a visible sheen must not be evident in the discharge.

- To minimize potential for creating stormwater pollution sources, control measures (such as a filter bag or similar filtration device) should be used to remove sediment/solids prior to land application.

Alternative Disposal Options

Water that does not meet the criteria of this guidance or that cannot be discharged in a manner that meets the conditions of this guidance must be either authorized by a Colorado Discharge Permit System (CDPS) discharge permit issued by the division or disposed of through an alternative means.

The Water Quality Control Division has general permits available for discharges to surface water and/or land associated with construction dewatering, subterranean structure/foundation dewatering, and the remediation of groundwater. Obtaining coverage one of these permits will likely be the most efficient solution for discharges that do not meet the criteria and conditions of this guidance.

For discharges associated with construction projects, guidance on determining the appropriate permit and applying in included in the Application Guidance Document for these general permits, available on the division's construction sector permitting page: https://www.colorado.gov/pacific/cdphe/wq-construction-general-permits

Discharges from subterranean structures (basement, foundation, footer drains, etc.) are covered by the Subterranean Dewatering or Well Development general permit. The application and other information for this general permit can be found on the commerce and industry sector permitting page: https://www.colorado.gov/pacific/cdphe/clean-water-commerce-and-industry-permitting

For more information, contact the Water Quality Control Division's Permitting Section or Clean Water Compliance Unit, at (303) 692-3517.

Environmental Spill Reporting

24—Hour Emergency and Incident Reporting Line
Office of Emergency Preparedness & Response

1-877-518-5608

Updated: June, 2018

Reporting chemical spills and releases in Colorado

General

For all hazardous substance incidents, local emergency response agencies must be notified.

Releases from fixed facilities

The Superfund Amendments and Reauthorization Act (SARA) Title III, requires reporting releases from fixed facilities

Refer to the SARA Title III List of Lists, available from the Environmental Protection Agency (EPA), for the reportable quantity.

The party that owns the spilled material must immediately notify the following agencies or organizations:

- National Response Center (NRC) 1-800-424-8802;
- Colorado Emergency Planning Committee (CEPC), represented by the Colorado Department of Public Health and Environment (CDPHE) 1-877-518-5608; and
- Local Emergency Planning Committee (LEPC) 1-720-852-6600.

In addition to telephone notification, the responsible party must also send written notification describing the release and associated emergency response to both the CEPC (in this case, CDPHE) and the LEPC.

Releases from RCRA facilities

Emergency releases from facilities permitted under the Resource Conservation and Recovery Act (RCRA) are reportable according to the permit requirements.

The permit often requires reporting to CDPHE, even if the amount of the release is less than a reportable quantity under SARA Title III (6 CCR 1007-3 Part 264).

Permitted facilities and generators and transporters of hazardous waste are required to have and implement a contingency plan that describes the actions facility personnel must take in response to fires, explosions or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, surface or ground water at the facility (6 CCR 1007-3 Sections 261, 262, 263, 264 and 265).

Whenever there is an imminent or actual emergency situation, appropriate state or local agencies, with designated response roles as described in the contingency plan, must be notified immediately.

The National Response Center or government official designated as the regional on-scene coordinator must be notified immediately if it is determined that the facility has had a release, fire or explosion that could threaten human health or the environment outside the facility.

CDPHE and local authorities must be notified when the facility is back in compliance and ready to resume operations. In addition, the facility must send a written report to CDPHE within 15 days of any incident that requires implementation of the contingency plan. The contingency plan should include current contact information for notification and submittal of written reports.

Permitted facilities, generators and transporters that store hazardous waste must notify CDPHE within 24 hours of any release to the environment that is greater than one (1) pound and must submit a written report to CDPHE within 30 days of the release (6 CCR 1007-3).

Transportation accidents

Transportation accidents that require reporting:

- Result in a spill or release of a hazardous substance in excess of the reportable quantity (40 CFR Part 302.6)
- Cause injury or death or cause estimated property damage exceeding $50,000.
- Cause an evacuation of the general public lasting one or more hours.

Those that close or shut down one or more major transportation arteries or facilities or result in fire, breakage, spillage, or suspected contamination from radioactive or infectious substances must immediately be reported to the National Response Center.

Refer to the EPA SARA Title III List of Lists for those substances that have reportable quantities.

In addition to the NRC being notified, the local emergency number (9-1-1) must be called and CDPHE should be notified.

Written notification of any transportation accident involving a release of hazardous materials must be provided to the U.S. Department of Transportation within 30 days (49 CFR Part 171.16)

Since hazardous waste is a subset of hazardous materials, transporters who have discharged hazardous waste must notify the NRC and provide a written report to the US Department of Transportation as noted in the above reporting requirements.

The transporter must give immediate notice to the nearest Colorado State Patrol office (8 CCR 1507-8 HMP 5) and the nearest law enforcement agency if the accident or spill involved a vehicle (42-20-113(3) CRS).

Notification and a written report detailing the ultimate disposition of the discharge of hazardous waste must also be provided to CDPHE (6 CCR 1007-2 Section 263.30). This may be a duplicate copy of the US Department of Transportation report

In the event of a spill or discharge of hazardous waste at a transfer facility, the transporter must notify CDPHE within 24 hours if the spill exceeds 55 gallons or if there is a fire or explosion.

Within 15 days of a reportable incident, the transporter must submit a written report of the incident to CDPHE, including the final disposition of the material (6 CCR 1007-2 Section 263.40).

Releases of hazardous waste at a transfer facility may also require notification to the National Response Center and a written report to the U.S. Department of Transportation.

Releases to water

A release of any chemical, oil, petroleum product, sewage, etc., which may enter waters of the State of Colorado (which include surface water, ground water and dry gullies or storm sewers leading to surface water) must be reported to CDPHE immediately (25-8-601 CRS).

Written notification to CDPHE must follow within five (5) days (5 CCR 1002-61, Section 61.8(5)(d)).

Any accidental discharge to the sanitary sewer system must be reported immediately to the local sewer authority and the affected wastewater treatment plant.

Releases of petroleum products and certain hazardous substances listed under the Federal Clean Water Act (40 CFR Part 116) must be reported to the National Response Center as well as to CDPHE (1-877-518-5608) as required under the Clean Water Act and the Oil Pollution Act.

Releases to air

Any unpredictable failure of air pollution control or process equipment that results in the violation of emission

control regulations should be reported CDPHE by 10 a.m. of the following working day, followed by a written notice explaining the cause of the occurrence and describing action that has been or is being taken to correct the condition causing the violation and to prevent such excess emissions in the future (5 CCR 1001-2 Common Provisions Regulations Section II.E).

If emergency conditions cause excess emissions at a permitted facility, the owner/operator must provide notice to CDPHE no later than noon of the next working day following the emergency, and follow by written notice within one month of the time when emission limitations were exceeded due to the emergency (5 CCR 1001-5, Regulation 3 Part C, Section VII.C.4).

Releases from oil and gas wells

All spills or releases of exploration and production wastes or produced fluids which meet the reporting thresholds of the Colorado Oil and Gas Conservation Commission (COGCC) Rule 906 shall be reported verbally to the COGCC within 24 hours of discovery and on the COGCC Spill/Release Report Form 19 within 72 hours of discovery.

Spills or releases are reportable to the COGCC in the following circumstances:

1) the spill or release impacts or threatens to impact any waters of the state, (which include surface water, ground water and dry gullies or storm sewers leading to surface water), a residence or occupied structure, livestock or a public byway;
2) a spill or release in which 1 barrel or more is released outside of berms or other secondary containment; or
3) any spill or release of 5 barrels or more.

COGCC also requires reportable spills or releases be reported to the surface owner and local government. Whether or not they are reportable, spills or releases of any size must be stopped, cleaned up, and investigated as soon as practicable.

If the spill or release impacts or threatens to impact waters of the state, it must also be reported immediately to CDPHE (25-8-601 CRS).

Releases from storage tanks

Petroleum releases of 25 gallons or more (or any size that causes a sheen on nearby surface waters) from regulated aboveground and underground fuel storage tanks must be reported to the Division of Oil and Public Safety (303-318-8547) within 24 hours. If the report is made after business hours, please leave a message on the technical assistance line for the Division of Oil and Public Safety, and contact the 24 hour CDPHE Emergency and Incident Reporting Line. This includes spills from fuel dispensers.

Spills or releases of hazardous substances from regulated storage tanks in excess of the reportable quantity (40 CFR Part 302.6) must be reported to the National Response Center and the local fire authority immediately, and to the Division of Oil and Public Safety within 24 hours. (8-20.5-208 CRS and 7 CCR 1101-14 Article 4).

Owners/operators of regulated storage tanks must contain and immediately clean up a spill or overfill of less than 25 gallons of petroleum and a spill or overfill of a hazardous substance that is less than the reportable quantity.

If cleanup cannot be accomplished within 24 hours, the Division of Oil and Public Safety must be notified immediately (7 CCR 1101-14 Article 4-4).

CDPHE should also be notified in the case of hazardous substance releases as cleanup activities may be covered by state solid or hazardous waste requirements (6 CCR 1007-2, 6 CCR 1007-3).

Any release that has or may impact waters of the state (which include surface water, ground water and dry

gullies or storm sewers leading to surface water), no matter how small, must be reported immediately to CDPHE (25-8-601 CRS).

Releases from pipelines

Releases of five or more gallons of hazardous liquids or carbon dioxide from a pipeline that result in explosion or fire, cause injury or death or cause estimated property damage (including cost of clean-up and recovery, value of lost product and property damage) exceeding $50,000 must be reported immediately to the US Department of Transportation Office of Pipeline Safety (49 CFR Part 195 Subpart B) and the National Response Center.

Releases of five or more gallons of hazardous liquids or carbon dioxide from interstate pipelines that do not involve explosion or fire, injury or death or property damage exceeding $50,000 should be reported to the US Department of Transportation Office of Pipeline Safety within 30 days after the incident.

Releases of natural gas from intrastate pipelines that cause injury or death, property damage in excess of $50,000 (including the cost of lost product), closure of a public road, or evacuation of 50 or more people must be reported immediately to the Colorado Public Utilities Commission, Pipeline Safety Group (4 CCR 723-11-2).

Releases of natural gas or liquefied natural gas (LNG) from interstate pipelines that cause injury or death, property damage in excess of $50,000 (including the cost of lost product), or results in an emergency shutdown of the facility must be reported immediately to the National Response Center and the US Dept of Transportation Office of Pipeline Safety.

Releases of oil, petroleum products or other hazardous liquids from interstate and intrastate pipelines that have or may enter waters of the State of Colorado (which include surface water, ground water and dry gullies or storm sewers leading to surface water) must be reported to CDPHE immediately (25-8-601 CRS). CDPHE should also be notified of releases to soil, as cleanup activities may be covered by state solid or hazardous waste requirements (6 CCR 1007-2, 6 CCR 1007-3).

Radiological accidents, incidents, and events

CDPHE must be notified of any condition that has caused or threatens to cause an event, which meets or exceeds the criteria specified in (6 CCR 1007-1) RH 4.51 and RH 4.52 of the State of Colorado *Rules and Regulations Pertaining to Radiation Control*. Reportable events include lost radioactive materials, lost radiation producing machines, over-exposures to persons, contamination events and fires or explosions involving radioactive materials.

Depending upon the severity of the event, notification may be required immediately, within 24 hours, or within 30 days. In most cases, a written follow-up report is also required.

If you are unsure of the proper notification requirement, please contact CDPHE immediately. Telephone event notifications can be made to the CDPHE Radiation Program at any time by calling 1-303-877-9757.

Notification Numbers

Colorado Department of Public Health and Environment toll-free 24-hour environmental emergency and incident reporting line: (877) 518-5608 (24-hour)

National Response Center
(800) 424-8802 (24-hour)

State Oil Inspector (Colorado Division of Oil & Public Safety-Above & Underground Storage Tank Regulators)
(303) 318-8547

APPENDIX D

STORMWATER CONTROL MEASURE SPECIFICATIONS (BMP MANUAL)

Guidelines for Implementing Construction Best Management Practices

For Any Construction Site:

1. **Provide Perimeter Controls** on downgradient site boundaries.

   Use one of the following BMPs:

   See **Silt Fence** Fact Sheet
   See **Straw Bale Barrier** Fact Sheet
   See **Temporary Swale** Fact Sheet

2. **Provide Sediment Basin or Check Dam** at locations where concentrated flow exits site.

   Provide **Sediment Basin** for upstream drainage areas greater than 1 acre.

   See **Sediment Basin** Fact Sheet

   Provide **Check Dam** for upstream drainage areas between 1 and 10 acres.

   See **Check Dam** Fact Sheet

3. **Provide Vehicle Tracking Controls** for stabilized access to site.

   See **Vehicle Tracking Control** Fact Sheet

4. **Stabilize Disturbed Ground** within specified time limits**.**

   Use one of the following BMPs:

   See **Erosion Control Blankets** Fact Sheet
   See **Mulching** Fact Sheet
   See **Temporary Seeding** Fact Sheet

For Slopes:

1. **Provide Surface Roughening.**

   See **Surface Roughening** Fact Sheet

2. **Provide Drainage Controls.**

   Use one of the Following BMPs:

   See **Slope Drain** Fact Sheet
   See **Silt Fence** Fact Sheet
   See **Straw Bale Barrier** Fact Sheet
   See **Temporary Swale** Fact Sheet

For Storm Drain Inlets:

1. Provide Inlet Protection.

   See **Inlet Protection** Fact Sheet

Check Dam

What it is

Check dams are small, temporary or permanent dams constructed across a drainage ditch, swale or channel to reduce the velocity of concentrated flows and to trap sediment eroded from upstream. Check dams can be constructed out of rocks, gravel-filled sandbags or straw bales.

When and Where to use it

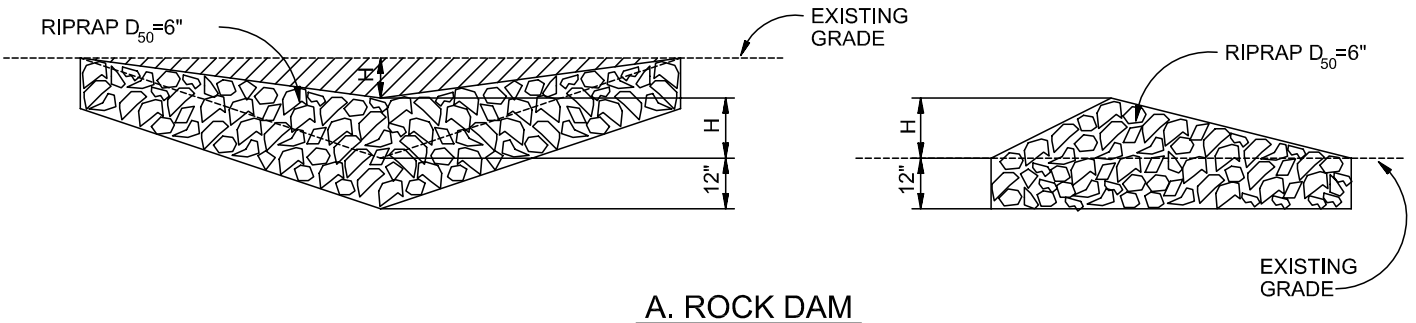
- In open channels that receive flow from drainage between 1 and 10 acres.
- In steeply sloped swales.
- In swales that need protection during the establishment of grasses or prior to installation of a non-erodible lining.

When and Where NOT to use it

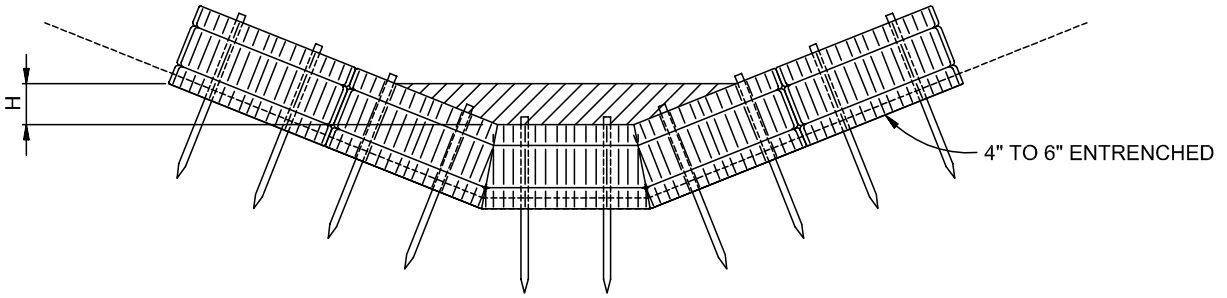
- In live streams.
- In channels that receive flow from drainage areas greater than 10 acres.
- In channels that will be overtopped by flow once the dams are constructed.

Construction Detail and Maintenance Requirements

Figure CD-1 provides a construction detail and maintenance requirements for a check dam.

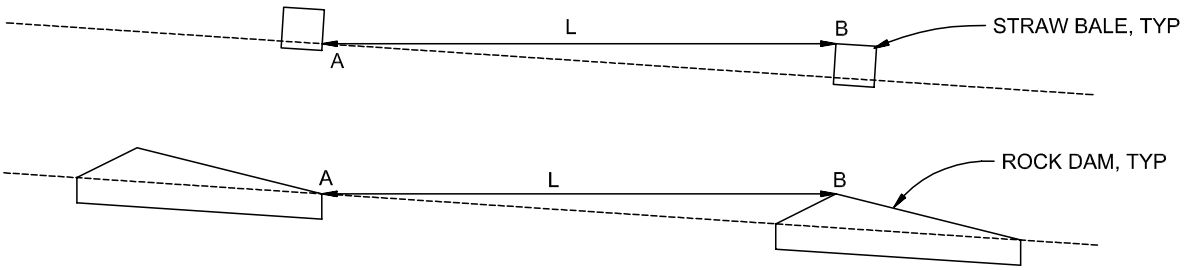


A. ROCK DAM



B. STRAW BALE CHECK DAM

(SEE STRAW BALE BARRIER INSTALATION)



L= THE DISTANCE SUCH THAT POINTS A AND B ARE AT THE SAME ELEVATION.

C. SPACING CHECK DAMS

CHECK DAM

NTS

CHECK DAM NOTES

INSTALLATION REQUIREMENTS

1. STRAW BALES USED AS CHECK DAMS ARE TO MEET THE REQUIREMENTS STATED IN FIGURE SBB-2.

2. THE "H" DIMENSION SHALL BE SELECTED TO PROVIDE WEIR FLOW CONVEYANCE FOR 2-YEAR FLOW OR GREATER.

MAINTENANCE REQUIREMENTS

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL CHECK DAMS, ESPECIALLY AFTER STORM EVENTS.

2. REPLACE STONE AS NECESSARY TO MAINTAIN THE CORRECT HEIGHT OF THE DAM.

3. ACCUMULATED SEDIMENT AND DEBRIS IS TO BE REMOVED FROM BEHIND THE DAMS AFTER EACH STORM OR WHEN 1/2 OF THE ORIGINAL HEIGHT OF THE DAM IS REACHED.

3. CHECK DAMS ARE TO REMAIN IN PLACE AND OPERATIONAL UNTIL THE DRAINAGE AREA AND CHANNEL ARE PERMANENTLY STABILIZED.

4. WHEN CHECK DAMS ARE REMOVED THE CHANNEL LINING OR VEGETATION IS TO BE RESTORED.

City of Colorado Springs Stormwater Quality	Figure CD-1 Check Dam Construction Detail and Maintenance Requirements

Erosion Control Blankets

What it is

Erosion control blankets are geotextiles or filter fabrics that are used to stabilize soils, steep slopes and drainage channels.

TYPES OF EROSION CONTROL BLANKETS

- WOVEN OR BONDED SYNETHETIC MATERIALS SUCH AS POLYPROPELENE, POLYESTER, POLYETHEYLENE, NYLON, POLYVINYL CHLORIDE, GLASS AND VARIOUS MIXTURES OF THESE.
- MULCH MATTING MADE FROM JUTE OR OTHER WOOD FIBER THAT HAS BEEN FORMED INTO SHEETS.
- NETTING MADE FROM JUTE OR OTHER WOOD FIBER, PLASTIC, PAPER, OR COTTON USED TO HOLD MULCH AND MATTING TO THE GROUND.
- BLANKETS OF WOVEN STRAW MULCH WITH A SYNTHETIC LAYER OR NET.

When and Where to use it

- In temporary and permanent swales.
- To protect recently seeded slopes.
- In drainageway channels.

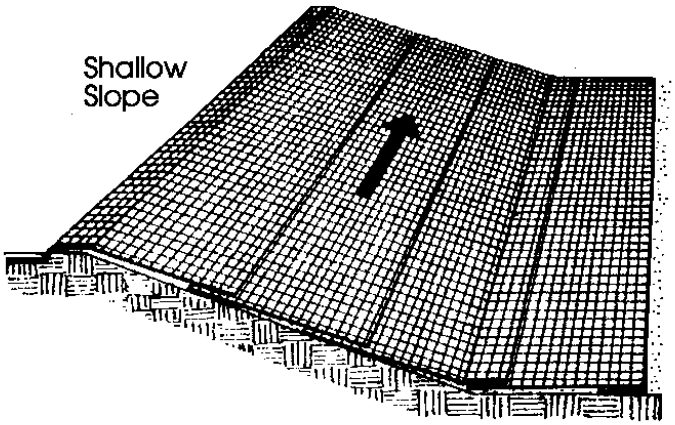
When and Where NOT to use it

- In swales with slopes greater than 5 percent or with stormwater velocities > 8 feet per second.

Installation and Maintenance Requirements

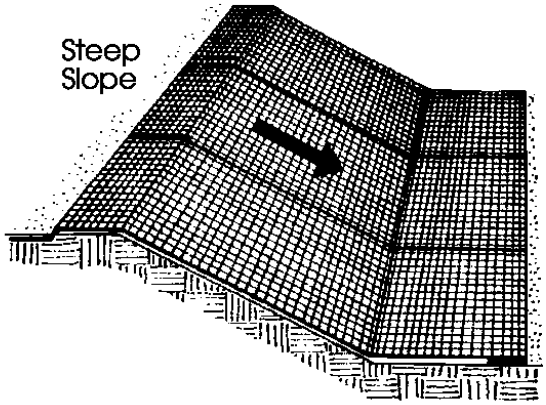
Installation requirements are provided in Figures ECB-1 and ECB-2.

Maintenance requirements include regular inspections to determine if fabric is damaged or has come loose, and appropriate repairs or replacement of damaged materials.



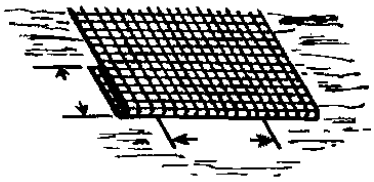
On shallow slopes, strips of netting may be applied across the slope.

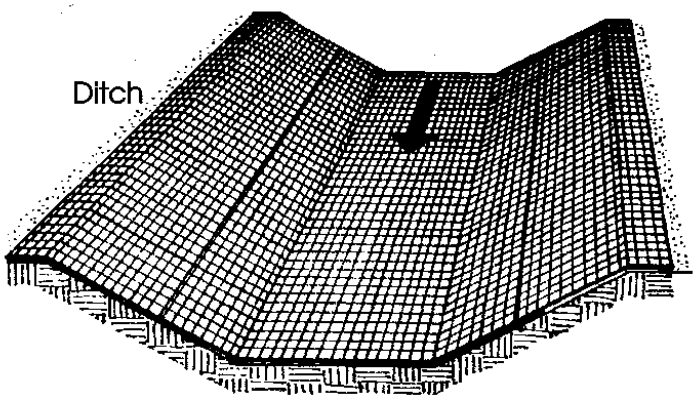
Where there is a berm at the top of the slope, bring the netting over the berm and anchor it behind the berm.



On steep slopes, apply strips of netting parallel to the direction of flow and anchor securely.

Bring netting down to a level area before terminating the installation. Turn the end under 6" and staple at 12" intervals.





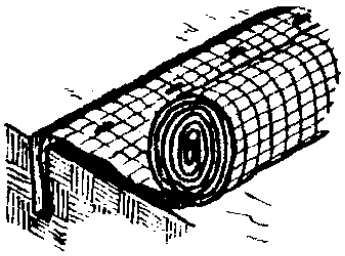
In ditches, apply netting parallel to the direction of flow. Use check slots every 15 feet. Do not join strips in the center of the ditch.

From: Virginia Soil and Water Conservation Commission, 1985

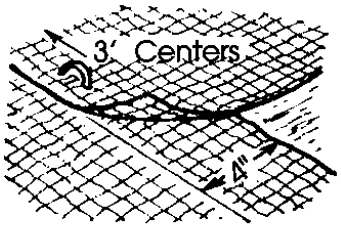
City of Colorado Springs
Storm Water Quality

Figure ECB-1
Erosion Control Blanket
Application Examples

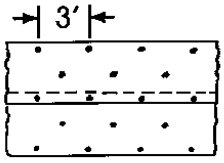
DEN/M/153722.CS.CB/FigECB-1/9-99

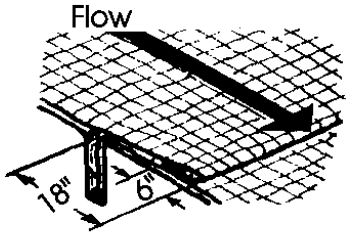


Anchor Slot: Bury the up-channel end of the net in a 6" deep trench. Tamp the soil firmly. Staple at 12" intervals across the net.

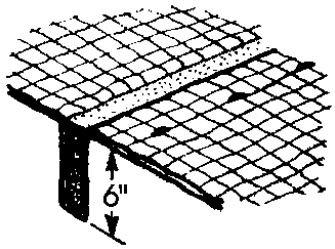


Overlap: Overlap edges of the strips at least 4". Staple every 3 feet down the center of the strip.

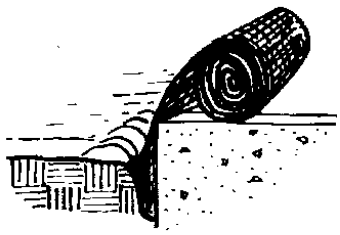




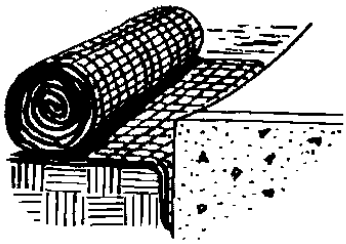
Joining Strips: Insert the new roll of net in a trench, as with the Anchor Slot. Overlap the up-channel end of the previous roll 18" and turn the end under 6". Staple the end of the previous roll just below the anchor slot and at the end at 12" intervals.



Check Slots: On erodible soils or steep slopes, check slots should be made every 15 feet. Insert a fold of the net into a 6" trench and tamp firmly. Staple at 12" intervals across the net. Lay the net smoothly on the surface of the soil - do not stretch the net, and do not allow wrinkles.



Anchoring Ends At Structures: Place the end of the net in a 6" slot on the up-channel side of the structure. Fill the trench and tamp firmly. Roll the net up the channel. Place staples at 12" intervals along the anchor end of the net.



From: Virginia Soil and Water Conservation Commission, 1985

City of Colorado Springs Storm Water Quality	Figure ECB-2 Erosion Control Blanket Installation Requirements

DEN/M/153722.CS.CB/FigECB-2/9-99

Inlet Protection

What it is

Inlet protection is a sediment control barrier formed around a storm drain inlet. A number of alternative inlet protection designs are available, including:

- Silt Fence Inlet Protection.
- Straw Bale Barrier Inlet Protection.
- Block and Gravel Bag Inlet Protection.
- Curb Socks Inlet Protection.

When and Where to use it

Application of inlet protection differs by design.

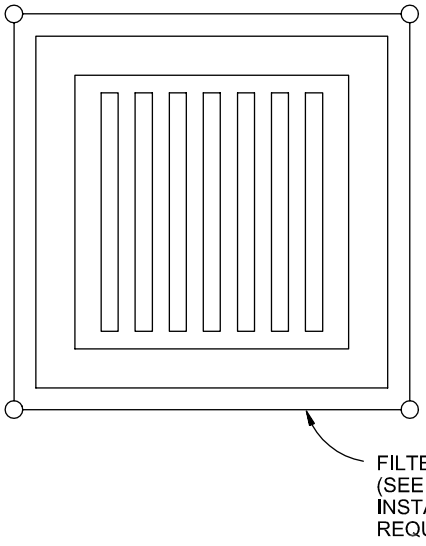
- Filter fabric and straw bale inlet protection are used for area inlets (not located within streets).
- Block and gravel bag curb inlet protection is used for street inlets in sumps.
- Curb sock protection is used for street inlets in sumps or on continuous grade.

When and Where NOT to use it

- Filter fabric and straw bale inlet protection cannot be used for drain inlets that are paved because these designs require excavation and/or staking of materials.
- Block and gravel bag inlet protection is not recommended for continuous grade inlets due to concerns about damage from bypassed flow.

Construction Detail and Maintenance Requirements

Figures IP-1 through IP-4 provide a construction detail and maintenance requirements for each inlet protection design alternative.



FILTER FABRIC INLET PROTECTION

NTS

FILTER FABRIC INLET PROTECTION NOTES

INSTALLATION REQUIREMENTS

1. INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY AFTER CONSTRUCTION OF INLET.

2. SEE SILT FENCE FIGURE SF-2 FOR INSTALLATION REQUIREMENTS.

3. POSTS ARE TO BE PLACED AT EACH CORNER OF THE INLET AND AROUND THE EDGES AT A MAXIMUM SPACING OF 3 FEET.

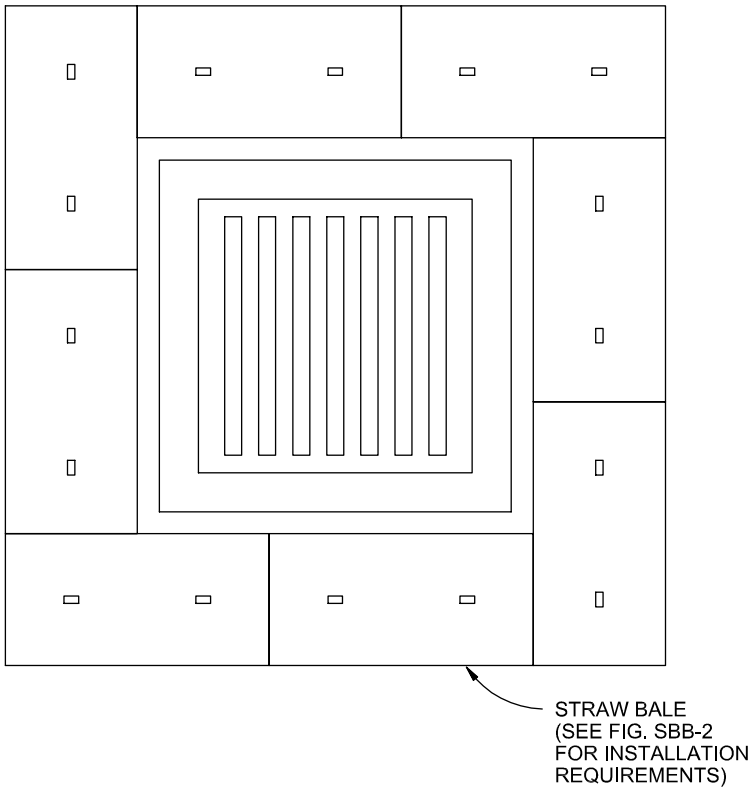
MAINTENANCE REQUIREMENTS

1. CONTRACTOR SHALL INSPECT INLET PROTECTION IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS NO RAINFALL.

2. DAMAGED, COLLAPSED, UNENTRENCHED OR INEFFECTIVE INLET PROTECTION SHALL BE PROMPTLY REPAIRED OR REPLACED.

3. SEDIMENT SHALL BE REMOVED FROM BEHIND FILTER FABRIC WHEN IT ACCUMULATES TO HALF THE EXPOSED GEOTEXTILE HEIGHT.

4. FILTER FABRIC PROTECTION SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED IN THE DRAINAGE AREA AS APPROVED BY THE CITY.



STRAW BALE INLET PROTECTION

NTS

STRAW BALE INLET PROTECTION NOTES

INSTALLATION REQUIREMENTS

1. INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY AFTER CONSTRUCTION OF INLET.

2. BALES ARE TO BE PLACED IN A SINGLE ROW AROUND THE INLET WITH THE END OF THE BALES TIGHTLY ABUTTING ONE ANOTHER.

3. SEE STRAW BALE BARRIER FIGURE SBB-2 FOR INSTALLATION REQUIREMENTS.

MAINTENANCE REQUIREMENTS

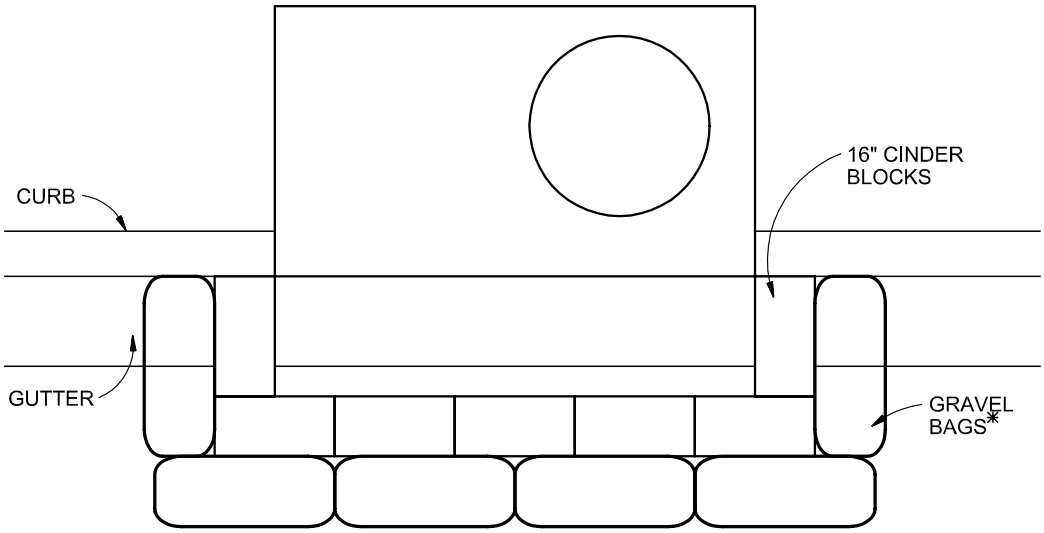
1. CONTRACTOR SHALL INSPECT STRAW BALE INLET PROTECTION IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS NO RAINFALL.

.

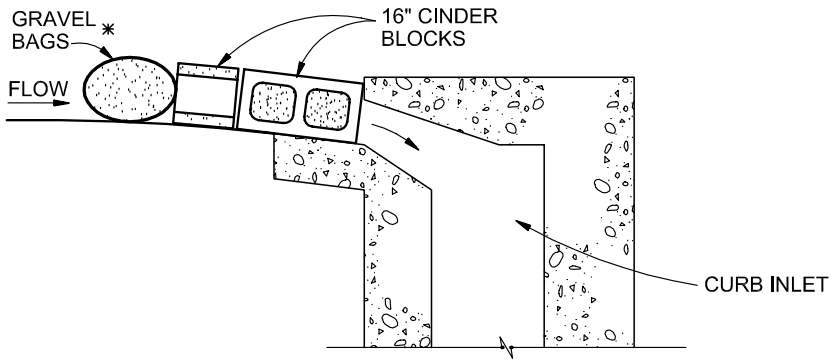
2. DAMAGED OR INEFFECTIVE INLET PROTECTION SHALL PROMPTLY BE REPAIRED, REPLACING BALES IF NECESSARY, AND UNENTRENCHED BALES NEED TO BE REPAIRED WITH COMPACTED BACKFILL MATERIAL.

3. SEDIMENT SHALL BE REMOVED FROM BEHIND STRAW BALES WHEN IT ACCUMULATES TO APPROXIMATELY 1/3 THE HEIGHT OF THE BARRIER.

4. INLET PROTECTION SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED WITHIN THE DRAINAGE AREA AS APPROVED BY THE CITY.



PLAN



SECTION

BLOCK AND GRAVEL BAG* CURB INLET PROTECTION

NTS

BLOCK AND GRAVEL BAG* CURB INLET PROTECTION NOTES

INSTALLATION REQUIREMENTS

1. INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY AFTER CONSTRUCTION OF INLET.

2. CONCRETE BLOCKS ARE TO BE LAID AROUND THE INLET IN A SINGLE ROW ON THEIR SIDES, ABUTTING ONE ANOTHER WITH THE OPEN ENDS OF THE BLOCK FACING OUTWARD.

3. GRAVEL BAGS ARE TO BE PLACED AROUND THE CONCRETE BLOCKS CLOSELY ABUTTING ONE ANOTHER SO THERE ARE NO GAPS.

4. GRAVEL BAGS ARE TO CONTAIN WASHED SAND OR GRAVEL APPROXIMATELY 3/4 INCH IN DIAMETER.

5. BAGS ARE TO BE MADE OF 1/4" INCH WIRE MESH (USED WITH GRAVEL ONLY) OR GEOTEXTILE.

MAINTENANCE REQUIREMENTS

1. CONTRACTOR SHALL INSPECT INLET PROTECTION IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS NO RAINFALL.
.

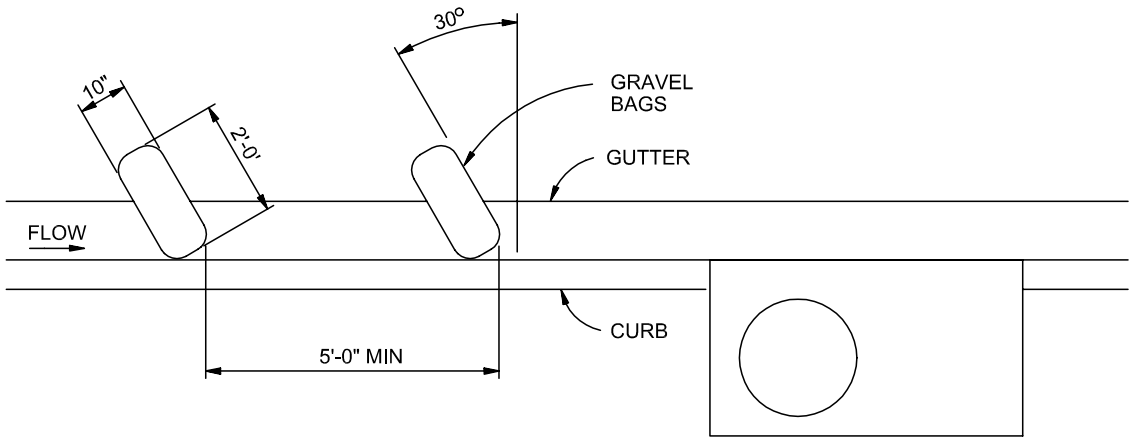
2. DAMAGED OR INEFFECTIVE INLET PROTECTION SHALL PROMPTLY BE REPAIRED OR REPLACED.

3. SEDIMENT SHALL BE REMOVED WHEN SEDIMENT HAS ACCUMULATED TO APPROXIMATELY 1/2 THE DESIGN DEPTH OF THE TRAP.

4. INLET PROTECTION SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED WITHIN THE DRAINAGE AREA AS APPROVED BY THE CITY.

* AN ALTERNATE 3/4" TO 1" GRAVEL FILTER OVER A WIRE SCREEN MAY BE USED IN PLACE OF GRAVEL BAGS. THE WIRE MESH SHALL EXTEND ABOVE THE TOP OF THE CONCRETE BLOCKS AND THE GRAVEL PLACED OVER THE WIRE SCREEN TO THE TOP OF THE CONCRETE BLOCKS.

City of Colorado Springs Stormwater Quality	Figure IP-3 Block & Gravel Bag Curb Inlet Protection Construction Detail and Maintenance Requirements



CURB SOCK INLET PROTECTION

NTS

CURB SOCK INLET PROTECTION NOTES

INSTALLATION REQUIREMENTS

1. INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY AFTER CONSTRUCTION OF INLET.

2. SOCK IS TO BE MADE OF 1/4 INCH WIRE MESH (USED WITH GRAVEL ONLY) OR GEOTEXTILE.

3. WASHED SAND OR GRAVEL 3/4 INCH TO 4 INCHES IN DIAMETER IS PLACED INSIDE THE SOCK.

4. PLACEMENT OF THE SOCK IS TO BE 30 DEGREES FROM PERPENDICULAR IN THE OPPOSITE DIRECTION OF FLOW.

5. SOCKS ARE TO BE FLUSH WITH THE CURB AND SPACED AT A MINIMUM 5 FEET APART.

6. AT LEAST 2 CURB SOCKS IN SERIES IS REQUIRED.

MAINTENANCE REQUIREMENTS

1. CONTRACTOR SHALL INSPECT INLET PROTECTION IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL AND WEEKLY DURING PERIODS NO RAINFALL.

2. DAMAGED OR INEFFECTIVE INLET PROTECTION SHALL PROMPTLY BE REPAIRED OR REPLACED.

3. SEDIMENT SHALL BE REMOVED FROM BEHIND THE SOCK WHEN GUTTER WIDTH IS FILLED.

4. INLET PROTECTION SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED WITHIN THE DRAINAGE AREA AS APPROVED BY THE CITY.

Mulching

What it is

Mulching is used to temporarily stabilize soils by securely applying materials such as grass, hay, woodchips or wood fibers to the soil's surface. Mulching protects the soil from raindrop impact and reduces the velocity of overland runoff. Mulch also aids in the growth of temporary seeding by holding seeds and topsoil in place, retaining moisture, and insulating against extreme temperatures.

When and Where to use it

- All disturbed areas and stockpiles shall be mulched within 21 days after final grade is reached.
- Disturbed areas and stockpiles which are not at final grade but will remain dormant for longer than 30 days shall also be mulched within 21 days after interim grading.
- An area that is going to remain in an interim state for more than 60 days shall also be seeded.
- Mulching is always to be used when applying temporary or permanent seeding.
- Mulching is often used when temporary seeding cannot be used due to the season or climate.

When and Where NOT to use it

- In areas that will involve paving, building, or utility construction within 21 days after final grade is reached.

Application Techniques and Maintenance Requirements

Figure MU-1 provides application techniques and maintenance requirements for mulching.

MULCHING NOTES

INSTALLATION REQUIREMENTS

1. ALL DISTURBED AREAS MUST BE MULCHED WITHIN 21 DAYS AFTER FINAL GRADE AND SEEDED AREAS ARE TO BE MULCHED WITHIN 24 HOURS AFTER SEEDING.

2. MATERIAL USED FOR MULCH CAN BE CERTIFIED CLEAN, WEED- AND SEED-FREE LONG STEMMED FIELD OR MARSH HAY, OR STRAW OF OATS, BARLEY, WHEAT, RYE, OR TRITICALE CERTIFIED BY THE COLORADO DEPARTMENT OF AGRICULTURE WEED FREE FORAGE CERTIFICATION PROGRAM.

3. HYDRAULIC MULCHING MATERIAL SHALL CONSIST OF VIRGIN WOOD FIBER MANUFACTURED FROM CLEAN WHOLE WOOD CHIPS. WOOD CHIPS CANNOT CONTAIN ANY GROWTH OR GERMINATION INHIBITORS OR BE PRODUCED FROM RECYCLED MATERIAL. GRAVEL CAN ALSO BE USED.

4. MULCH IS TO BE APPLIED EVENLY AT A RATE OF 2 TONS PER ACRE.

5. MULCH IS TO BE ANCHORED EITHER BY CRIMPING (TUCKING MULCH FIBERS 4 INCHES INTO THE SOIL), USING NETTING (USED ON SMALL AREAS WITH STEEP SLOPES), OR WITH A TACKIFIER.

6. HYDRAULIC MULCHING AND TACKIFIERS ARE NOT TO BE USED IN THE PRESENCE OF FREE SURFACE WATER.

MAINTENANCE REQUIREMENTS

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL MULCHED AREAS.

2. MULCH IS TO BE REPLACED IMMEDIATELY IN THOSE AREAS IT HAS BEEN REMOVED, AND IF NECESSARY THE AREA SHOULD BE RESEEDED.

Sediment Basin

What it is

A temporary sediment basin detains sediment-laden runoff long enough to allow much of the sediment to settle out. Sediment basins are constructed by excavation and/or by placing an earthen embankment across a low area or drainage swale. Basins can be designed to maintain a permanent pool or to drain completely dry through a controlled outlet structure.

When and Where to use it

- Required in disturbed areas draining more than one acre.
- Where there is sufficient space and appropriate topography.
- In areas that allow access for maintenance and sediment removal.
- Positioned so that it captures sediment from the entire upstream disturbed area.
- Where a permanent detention basin is planned for the site.

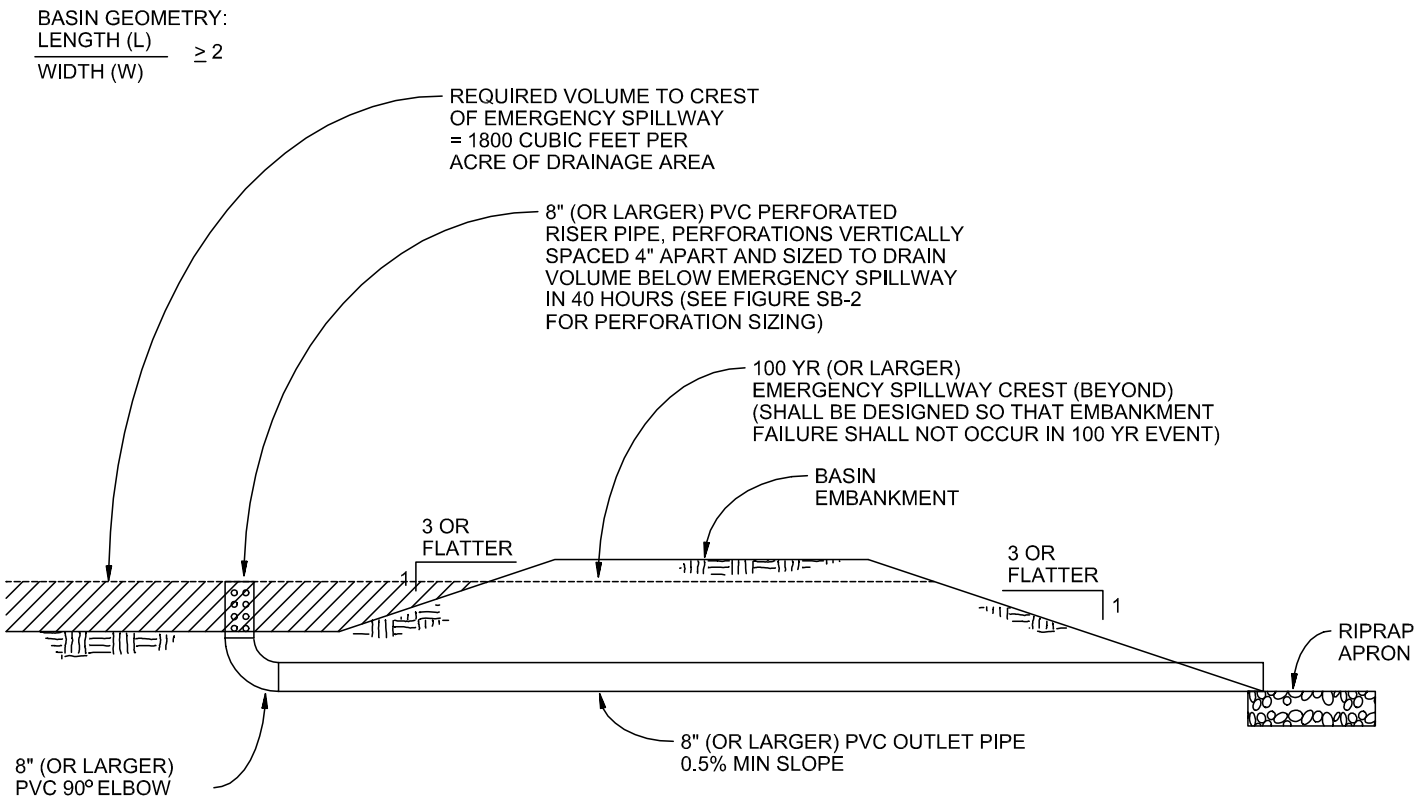
When and Where NOT to use it

- Sediment basins are not to be installed in active streams.

This low area will provide for some removal of sediment; however, it lacks a designed outlet structure.

Construction Detail and Maintenance Requirements

Figure SB-1 provides a construction detail and maintenance requirements for a sediment basin.



SEDIMENT BASIN

NTS

SEDMENT BASIN NOTES

INSTALLATION REQUIREMENTS

1. SEDIMENT BASINS SHALL BE INSTALLED BEFORE ANY CLEARING AND/OR GRADING IS UNDERTAKEN.

2. THE AREA UNDER WHICH THE EMBANKMENT IS TO BE INSTALLED SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ALL VEGETATION AND ROOT MAT.

3. THE OUTLET OF THE BASIN SHALL BE DESIGNED TO DRAIN ITS VOLUME IN 40 HOURS.

4. THE OUTLET IS TO BE LOCATED AT THE FURTHEST DISTANCE FROM THE INLET OF THE BASIN. BAFFLES MAY BE NEEDED TO INCREASE THE FLOW LENGTH AND SETTLING TIME.

5. EMBANKMENT MATERIAL SHALL CONSIST OF SOIL WITH A MINIMUM OF 15% PASSING A #200 SIEVE. EXCAVATED SOIL CAN BE USED IF IT MEETS THIS REQUIREMENT.

6. EMBANKMENT IS TO BE COMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D 698.

7. WHEN A BASIN IS INSTALLED NEAR A RESIDENTIAL AREA, FOR SAFETY REASONS, A SIGN SHALL BE POSTED AND THE AREA SECURED WITH A FENCE.

MAINTENANCE REQUIREMENTS

1. CONTRACTOR SHALL INSPECT SEDIMENT BASINS AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS NO RAINFALL.

2. SEDIMENT BASINS SHALL BE CLEANED OUT BEFORE SEDIMENT HAS FILLED HALF THE VOLUME OF THE BASIN.

3. SEDIMENT BASINS SHALL REMAIN OPERATIONAL AND PROPERLY MAINTAINED UNTIL THE SITE AREA IS PERMANENTLY STABILIZED WITH ADEQUATE VEGETATIVE COVER AND/OR OTHER PERMANENT STRUCTURE AS APPROVED BY THE CITY.

Required Area per Row (in^2)

		Depth at Outlet (ft)							
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5
Design Volume (acre-ft)	2	15.04	7.71	5.10	3.76	2.95	2.41	2.02	1.73
	1	7.52	3.86	2.55	1.88	1.48	1.21	1.01	0.87
	0.6	4.51	2.31	1.53	1.13	0.89	0.72	0.61	0.52
	0.4	3.01	1.54	1.02	0.75	0.59	0.48	0.40	0.35
	0.2	1.50	0.77	0.51	0.38	0.30	0.24	0.20	0.17
	0.1	0.75	0.39	0.26	0.19	0.15	0.12	0.10	0.09
	0.06	0.45	0.23	0.15	0.11	0.09	0.07	0.06	0.05
	0.04	0.30	0.15	0.10	0.08	0.06	0.05	0.04	0.03
	0.02	0.15	0.08	0.05	0.04	0.03	0.02	0.02	0.02
	0.01	0.08	0.04	0.03	0.02	0.01	0.01	0.01	0.01

TABLE SB-1

Circular Perforation Sizing

Hole Diameter (in)	Hole Diameter (in)	Area per Row (in^2)		
		n = 1	n = 2	n = 3
1/4	0.250	0.05	0.10	0.15
5/16	0.313	0.08	0.15	0.23
3/8	0.375	0.11	0.22	0.33
7/16	0.438	0.15	0.30	0.45
1/2	0.500	0.20	0.39	0.59
9/16	0.563	0.25	0.50	0.75
5/8	0.625	0.31	0.61	0.92
11/16	0.688	0.37	0.74	1.11
3/4	0.750	0.44	0.88	1.33
7/8	0.875	0.60	1.20	1.80
1	1.000	0.79	1.57	2.36
1 1/8	1.125	0.99	1.99	2.98
1 1/4	1.250	1.23	2.45	3.68
1 3/8	1.375	1.48	2.97	4.45
1 1/2	1.500	1.77	3.53	5.30
1 5/8	1.625	2.07	4.15	6.22
1 3/4	1.750	2.41	4.81	7.22
1 7/8	1.875	2.76	5.52	8.28
2	2.000	3.14	6.28	9.42
n = Number of columns of perforations				
Minimum steel plate thickness		1/4"	5/16"	3/8"

TABLE SB-2

Silt Fence

What it is

A silt fence is a temporary sediment barrier constructed of filter fabric stretched across supporting posts. The bottom edge of the fabric is entrenched and covered with backfill.

When and Where to use it

- On the down gradient perimeters of a construction site.
- On a contour to control overland sheet flow.
- At the top or toe of a steep slope.
- As a form of inlet protection (see inlet protection factsheet).

Figure SF-1 depicts five cases where the use of silt fence is appropriate.

When and Where NOT to use it

- In areas of concentrated flows such as in ditches, swales or channels that drain areas greater than 1.0 acre.
- At the top of a slope or at high points which do not receive any drainage flows.

This photo reveals a silt fence that has become unentrenched because it was not securely installed.

This photo illustrates what will happen to a silt fence if it is installed in an area of concentrated flow.

Construction Detail and Maintenance Requirements

Figure SF-2 provides a construction detail and maintenance requirements for a silt fence.

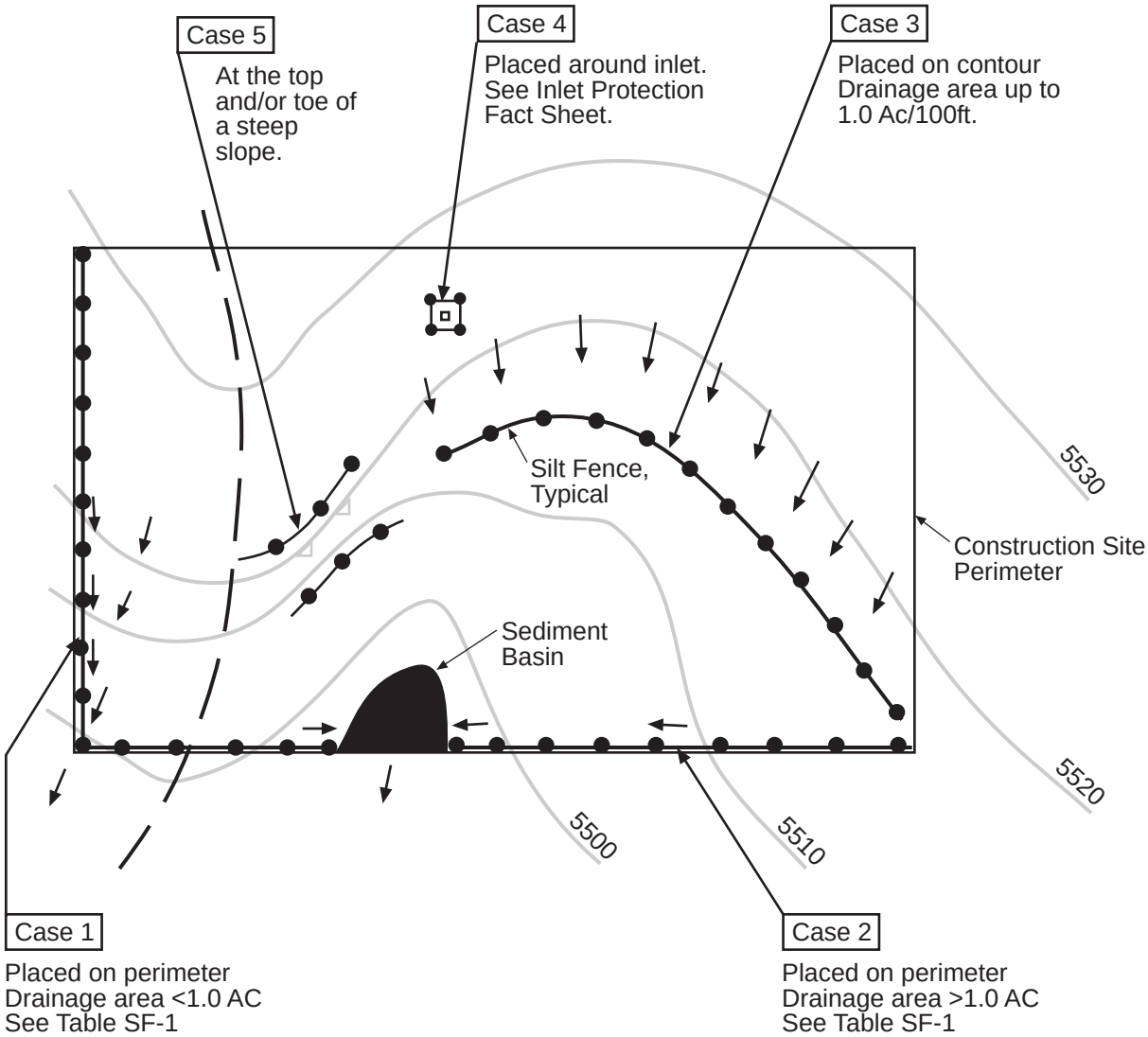


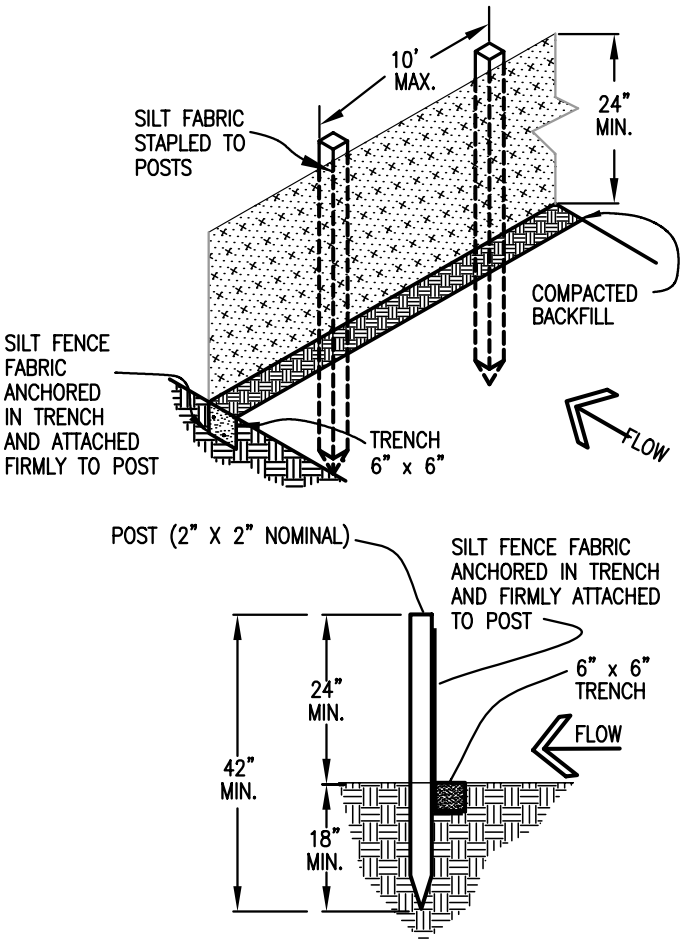
Table SF-1

Silt Fence Used as Perimeter Control	Case 1		Case 2 DA > 1.0 AC
	DA < 0.25 AC	0.25 < DA < 1 AC	
Continuous Grade	OK (1)	OK (1)	OK (1)
Area of Concentrated Flow	OK	NO (2)	NO (3)

(1) Temporary Swale or Straw Bale Barrier may be used as alternative to a Silt Fence.
(2) Check Dam may also be used as alternative to Silt Fence at low point.
(3) Sediment Basin is required for concentrated flow from drainage areas > 1.0 AC.

City of Colorado Springs Storm Water Quality	Figure SF-1 Silt Fence Application Examples

DEN/M/153722.CS.CB/FigSF-1/9-99



SILT FENCE

SILT FENCE NOTES

INSTALLATION REQUIREMENTS

1. SILT FENCES SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

2. WHEN JOINTS ARE NECESSARY, SILT FENCE GEOTEXTILE SHALL BE SPLICED TOGETHER ONLY AT SUPPORT POST AND SECURELY SEALED.

3. METAL POSTS SHALL BE "STUDDED TEE" OR "U" TYPE WITH MINIMUM WEIGHT OF 1.33 POUNDS PER LINEAR FOOT. WOOD POSTS SHALL HAVE A MINIMUM DIAMETER OR CROSS SECTION DIMENSION OF 2 INCHES.

4. THE FILTER MATERIAL SHALL BE FASTENED SECURELY TO METAL OR WOOD POSTS USING WIRE TIES, OR TO WOOD POSTS WITH 3/4" LONG #9 HEAVY-DUTY STAPLES. THE SILT FENCE GEOTEXTILE SHALL NOT BE STAPLED TO EXISTING TREES.

5. WHILE NOT REQUIRED, WIRE MESH FENCE MAY BE USED TO SUPPORT THE GEOTEXTILE. WIRE FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY-DUTY WIRE STAPLES AT LEAST 3/4" LONG, TIE WIRES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 6" AND SHALL NOT EXTEND MORE THAN 3' ABOVE THE ORIGINAL GROUND SURFACE.

6. ALONG THE TOE OF FILLS, INSTALL THE SILT FENCE ALONG A LEVEL CONTOUR AND PROVIDE AN AREA BEHIND THE FENCE FOR RUNOFF TO POND AND SEDIMENT TO SETTLE. A MINIMUM DISTANCE OF 5 FEET FROM THE TOE OF THE FILL IS RECOMMENDED.

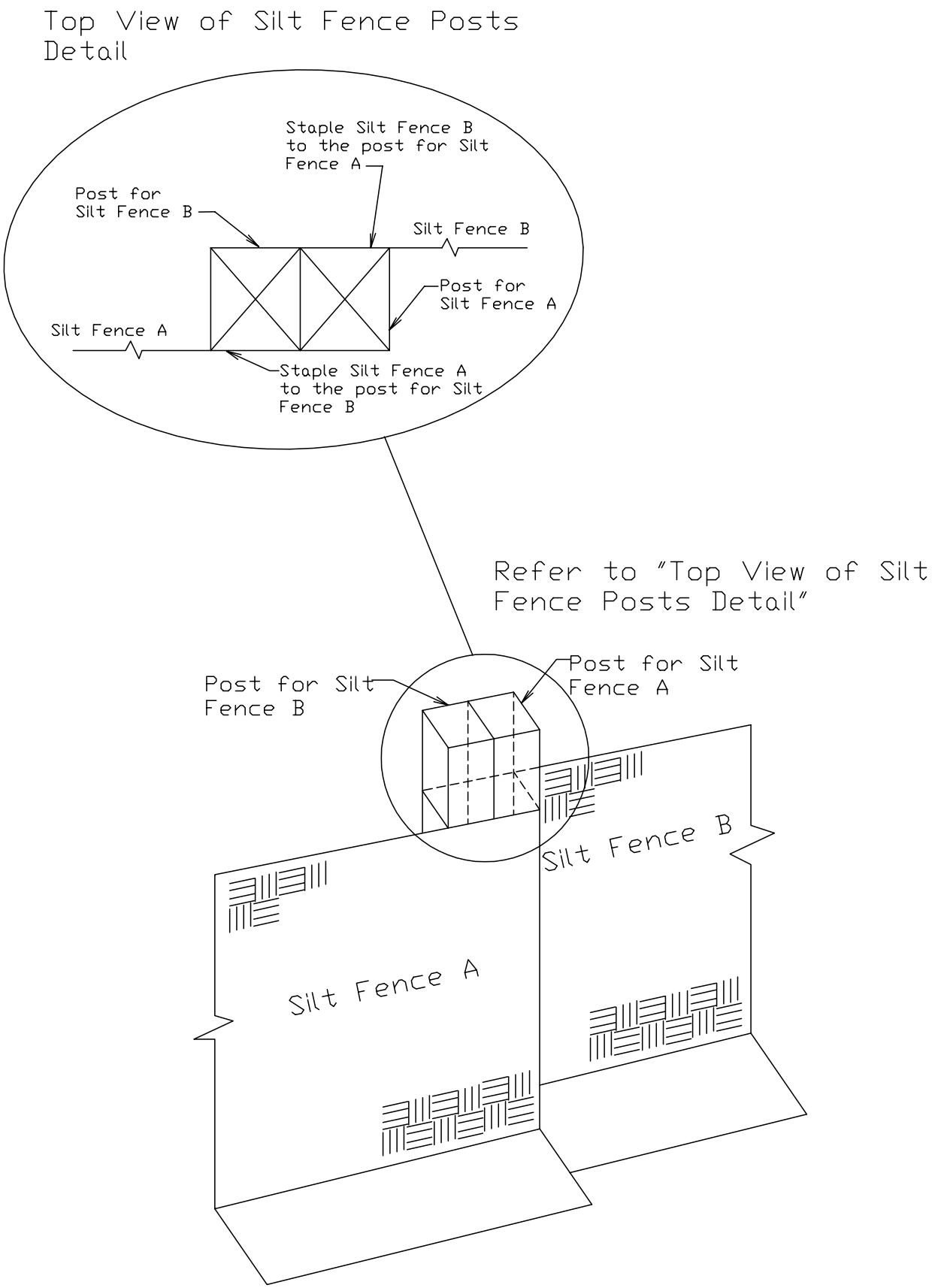
7. THE HEIGHT OF THE SILT FENCE FROM THE GROUND SURFACE SHALL BE MINIMUM OF 24 INCHES AND SHALL NOT EXCEED 36 INCHES; HIGHER FENCES MAY INPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE.

MAINTENANCE REQUIREMENTS

1. CONTRACTOR SHALL INSPECT SILT FENCES IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL. DAMAGED, COLLAPSED, UNENTRENCHED OR INEFFECTIVE SILT FENCES SHALL BE PROMPTLY REPAIRED OR REPLACED.

2. SEDIMENT SHALL BE REMOVED FROM BEHIND SILT FENCE WHEN IT ACCUMULATES TO HALF THE EXPOSED GEOTEXTILE HEIGHT.

3. SILT FENCES SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED AS APPROVED BY THE CITY.



City of Colorado Springs
Stormwater Quality

Figure SF-3
Silt Fence Joint Tying
Construction Detail and Maintenance Requirements

Slope Drain

What it is

Slope drains are either flexible or rigid pipes that convey concentrated runoff from the top of a slope to a stable discharge point at the bottom of the slope. Slope drains can be either temporary or permanent depending on the method of installation and material used.

When and Where to use it

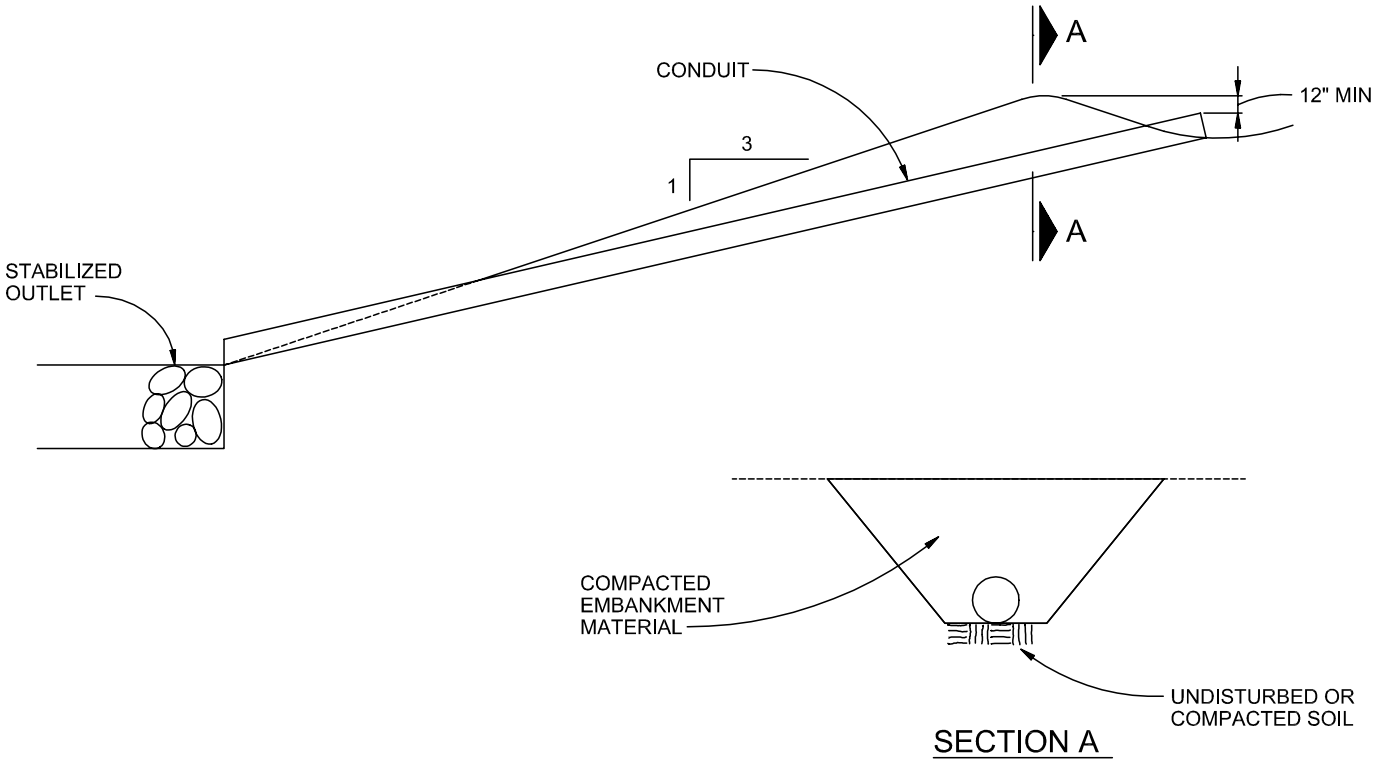
- At the top of cut-and-fill slopes to convey stormwater down the slope.
- Before a slope has been stabilized or before permanent drainage structures are ready for use.
- In combination with other BMPs that have been used to concentrate flows, including temporary swales.

When and Where NOT to use it

Slope drains should not be used for drainage areas larger than 5 acres.

Construction Detail and Maintenance Requirements

Figure SD-1 provides a construction detail and maintenance requirements for a slope drain.



SLOPE DRAIN

NTS

SLOPE DRAIN NOTES

INSTALLATION REQUIREMENTS

1. THE SLOPE DRAIN IS TO BE DESIGNED TO CONVEY THE PEAK RUNOFF FOR THE 2-YEAR STORM.

2. PIPE MATERIAL MAY INCLUDE CORRUGATED METAL, OR RIGID OR FLEXIBLE PLASTIC.

3. EMBANKMENT MATERIAL SHALL CONSIST OF SOIL WITH A MINIMUM OF 15% PASSING A #200 SIEVE. EXCAVATED SOIL CAN BE USED IF IT MEETS THIS REQUIREMENT.

4. EMBANKMENT IS TO BE COMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D 698.

5. SLOPE DRAIN SECTIONS ARE TO BE SECURELY FASTENED TOGETHER AND HAVE WATERTIGHT FITTINGS.

6. THE OUTLET IS TO BE STABILIZED AND, UNLESS THE DRAIN DISCHARGES DIRECTLY TO A SEDIMENT BASIN, A TEMPORARY SURFACE IS TO BE PROVIDED TO CONVEY FLOWS DOWN STREAM.

7. IMMEDIATELY STABILIZE ALL AREAS DISTURBED BY INSTALLATION OR REMOVAL OF THE PIPE SLOPE DRAIN.

MAINTENANCE REQUIREMENTS

1. INLET AND OUTLET POINTS ARE TO BE CHECKED REGULARLY, AND AFTER HEAVY STORMS FOR CLOGGING AND OVERCHARGING. ANY BREAKS IN THE PIPE ARE TO BE PROMPTLY REPAIRED, AND CLOGS REMOVED AS NEEDED.

2. WATER IS NOT TO BYPASS OR UNDERCUT THE INLET OR PIPE. IF THESE PROBLEMS DO EXIST, THE HEADWALL NEEDS TO BE REINFORCED WITH COMPACT EARTH OR SANDBAGS.

3. THE OUTLET POINT IS TO BE FREE OF EROSION, AND, IF NECESSARY, ADDITIONAL OUTLET PROTECTION SHOULD BE INSTALLED.

4. CONSTRUCTION TRAFFIC IS NOT TO CROSS THE SLOPE DRAIN AND MATERIALS ARE NOT TO BE PLACED ON IT.

5. THE SLOPE DRAIN IS TO REMAIN IN PLACE UNTIL THE SLOPE HAS BEEN COMPLETELY STABILIZED OR UP TO 30 DAYS AFTER PERMANENT SLOPE STABILIZATION.

Straw Bale Barriers

What it is

A straw bale barrier is a temporary sediment barrier consisting of a row of entrenched and anchored straw bales used to retain sediment from runoff in small drainage areas of disturbed soil.

When and Where to use it

- At the base of a slope.
- On the down gradient perimeters of a construction site.
- On a contour to control overland sheet flow.
- As a form of check dam (see check dam factsheet).
- As a form of inlet protection (see inlet protection factsheet).

Figure SBB-1 depicts six cases where the use of Straw Bale Barriers is appropriate.

When and Where NOT to use it

- In areas of concentrated flows such as in ditches, swales, or channels that drain areas greater than 1.0 acre (unless used as a form of check dam).
- At the top of a slope or at high points which do not receive any drainage flows.

This straw bale barrier was not installed properly because runoff is able to flow around the barrier.

Construction Detail and Maintenance Requirements

Figure SBB-2 provides a construction detail and maintenance requirements for a straw bale barrier.

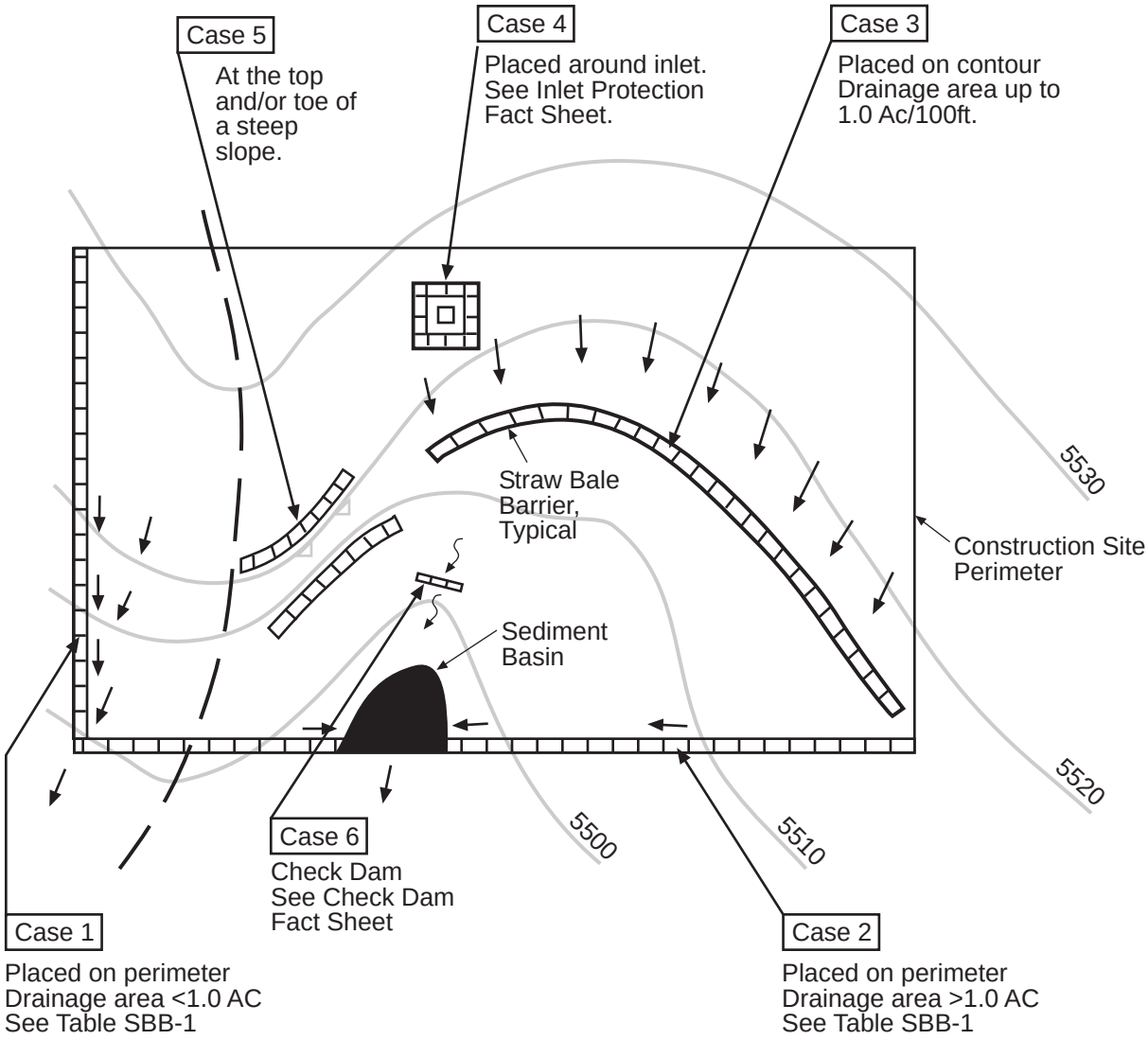
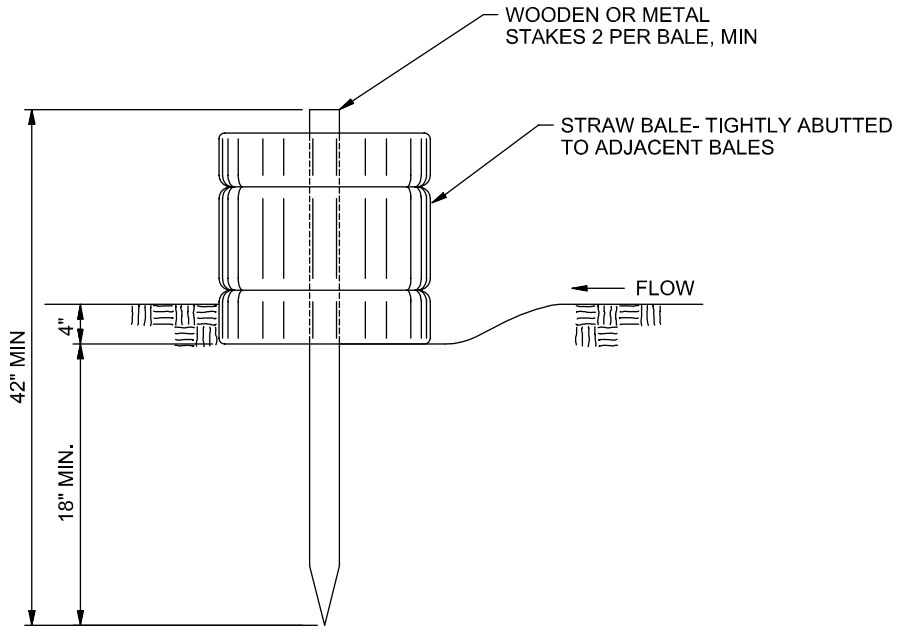


Table SBB-1

Straw Bale Barrier Used as Perimeter Control	Case 1 DA < 1.0 AC	Case 2 DA > 1.0 AC
Continuous Grade	OK (1)	OK (1)
Area of Concentrated Flow	OK (2)	NO (3)

(1) Temporary Swale or Silt Fence may be used as alternative to a Straw Bale Barrier.
(2) Straw Bale Check Dam may be used at low points.
(3) Sediment Basin is required for concentrated flow from drainage areas > 1.0 AC.

City of Colorado Springs Storm Water Quality	Figure SBB-1 Straw Bale Barrier Application Examples



STRAW BALE BARRIER

NTS

STRAW BALE BARRIER NOTES

INSTALLATION REQUIREMENTS

1. STRAW BALE BARRIERS SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

2. BALES SHALL CONSIST OF APPROXIMATELY 5 CUBIC FEET OF CERTIFIED WEED FREE HAY OR STRAW AND WEIGH NOT LESS THAN 35 POUNDS.

3. BALES ARE TO BE PLACED IN A SINGLE ROW WITH THE END OF THE BALES TIGHTLY ABUTTING ONE ANOTHER.

4. EACH BALE IS TO BE SECURELY ANCHORED WITH AT LEAST TWO STAKES AND THE FIRST STAKE IS TO BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE TO FORCE THE BALES TOGETHER.

5. STAKES ARE TO BE A MINIMUM OF 42 INCHES LONG. METAL STAKES SHALL BE STANDARD "T" OR "U" TYPE WITH MINIMUM WEIGHT OF 1.33 POUNDS PER LINEAR FOOT. WOOD STAKES SHALL HAVE A MINIMUM DIAMETER OR CROSS SECTION DIMENSION OF 2 INCHES.

6. BALES ARE TO BE BOUND WITH EITHER WIRE OR STRING AND ORIENTED SUCH THAT THE BINDINGS ARE AROUND THE SIDES AND NOT ALONG THE TOPS AND BOTTOMS OF THE BALE.

7. GAPS BETWEEN BALES ARE TO BE CHINKED (FILLED BY WEDGING) WITH STRAW OR THE SAME MATERIAL OF THE BALE.

8. END BALES ARE TO EXTEND UPSLOPE SO THE TRAPPED RUNOFF CANNOT FLOW AROUND THE ENDS OF THE BARRIER.

MAINTENANCE REQUIREMENTS

1. CONTRACTOR SHALL INSPECT STRAW BALE BARRIERS IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS NO RAINFALL.

2. DAMAGED OR INEFFECTIVE BARRIERS SHALL PROMPTLY BE REPAIRED, REPLACING BALES IF NECESSARY, AND UNENTRENCHED BALES NEED TO BE REPAIRED WITH COMPACTED BACKFILL MATERIAL.

3. SEDIMENT SHALL BE REMOVED FROM BEHIND STRAW BALE BARRIERS WHEN IT ACCUMULATES TO APPROXIMATELY 1/2 THE HEIGHT OF THE BARRIER.

4. STRAW BALE BARRIERS SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED AS APPROVED BY THE CITY.

Street Wash Water Associated with Construction Activities

The CDPS Municipal Stormwater Discharge Permit for the City of Colorado Springs calls for the development and implementation of best management practices to minimize the impacts from street wash water associated with construction activities. The proposed best management practices (BMPs) are listed below. The permit allows these discharges into State Waters without obtaining a permit providing BMPs are maintained.

Activity

During construction, it is not uncommon for dirt to accumulate on roadways in the construction site and adjacent to the site. This occurs when BMPs have not been implemented on the site or from the vehicles tracking materials around the site. If the sediment is not removed from the roadways, it will be washed into the storm sewer or other drainage facilities during the next storm event. Therefore, it is necessary to clean the roadways within or adjacent to a construction site on a regular basis. There are several methods for doing this, which include sweeping the streets, scraping the streets and using water to wash down the street. The practice of washing with water, while not encouraged, may be necessary in some cases.

Areas of Concern

The concern with construction street sweeping is that the water will carry sediment into the storm sewer and then into State Waters. The sediment can have a negative impact on the aquatic life in the stream.

While the water used to clean the street may be potable in some cases, it is believed that the act of spraying the water would dissipate the chlorine.

BMPs

1. Prior to washing the street with water, efforts will first be made to scrape and sweep the dirt off the roadways. Scraped or swept material will not be deposited in the storm sewer or other drainage facility.

2. Inlet protection or other BMPs will be in place prior to the washing of the streets. Materials collected by the BMP will be removed and will not be disposed of in a manner that would result in it entering the storm sewer or other drainage system.

3. Where practical, high-pressure wash systems will be used on the hard to remove spots. Washing the entire area with a fire hose will be avoided wherever possible. Water will only be used as needed.

Surface Roughening

What it is

Surface roughening is a temporary erosion control practice where the soil surface is roughened by the creation of grooves, depressions, or steps that run parallel to the contour of the land.

When and Where to use it

- Surface roughening is appropriate for all slopes and should be performed immediately after rough grades have been established in an area.
- Surface roughening can also be used to help establish vegetative cover by reducing runoff velocity and giving seed an opportunity to take hold and grow.
- Surface roughening can be used in combination with other erosion control measures such as mulching and seeding.

When and Where NOT to use it

- Slopes that are not smooth-graded and are left sufficiently rough after final grading do not need further roughening to control erosion.
- Surface roughening alone is not sufficient to stabilize a slope for long periods of times, further stabilization measures should be implemented within two weeks of grading.
- Extremely sandy or rocky soils are not well suited for surface roughening.

Application Techniques and Maintenance Requirements

Figure SR-1 provides application techniques and maintenance requirements for surface roughening.

SURFACE ROUGHENING NOTES

APPLICATION TECHNIQUES

1. STAIR STEP GRADING – USED ON SLOPES WITH GRADIENTS BETWEEN 3:1 AND 2:1 AND FOR SOIL CONTAINING A LARGE AMOUNT OF SMALL ROCKS. STAIRS ARE TO BE WIDE ENOUGH TO WORK WITH STANDARD EARTH MOVING EQUIPMENT.
2. GROOVE CUTTING – USED ON SLOPES WITH GRADIENTS BETWEEN 3:1 AND 2:1. GROOVES ARE TO BE AT LEAST 3 INCHES DEEP AND NO MORE THAN 15 INCHES APART.
3. TRACKING – USED ON SOILS WITH HIGHER SAND CONTENT DUE TO COMPACTION BY HEAVY MACHINERY.

MAINTENANCE REQUIREMENTS

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL SURFACE ROUGHENED AREAS.
2. SURFACE ROUGHENING IS TO BE REPEATED AS OFTEN AS NECESSARY.
3. VEHICLES OR EQUIPMENT IS NOT TO BE DRIVEN OVER AREAS THAT HAVE BEEN ROUGHENED.
4. AS SURFACE ROUGHENING IS ONLY A TEMPORARY CONTROL, ADDITIONAL TREATMENTS MAY BE NECESSARY TO MAINTAIN THE SOIL SURFACE IN A ROUGHENED CONDITION.

Temporary Seeding

What it is

Temporary seeding is the use of quickly germinating vegetative cover on disturbed areas to stabilize soils and control erosion.

When and Where to use it

- On any disturbed areas that are to remain in an interim state for more than 60 days, but less than one year.

When and Where NOT to use it

- Temporary seeding shall not be used in areas that receive construction traffic; granular material shall be used to stabilize high traffic areas (see Vehicle Tracking Fact Sheet).
- Temporary seeding is not to be used on disturbed areas left in an interim state for more than 1 year. Permanent seeding is then required.

Application Techniques and Maintenance Requirements

Figure TS-1 provides application techniques and maintenance requirements for temporary seeding.

RECOMMENDED ANNUAL GRASSES

SPECIES (COMMON NAME)	GROWTH SEASON	SEEDING DATE	POUNDS OF PURE LIVE SEED (PLS) (PLS/ACRE)	PLANTING DEPTH (INCHES)
1. OATS	COOL	MARCH 16 - APRIL 30	35-50	1-2
2. SPRING WHEAT	COOL	MARCH 16 - APRIL 30	25-35	1-2
3. SPRING BARLEY	COOL	MARCH 16 - APRIL 30	25-35	1-2
4. ANNUAL RYEGRASS	COOL	MARCH 16 - JUNE 30	10-15	1/2
5. MILLET	WARM	MAY 16 - JULY 15	3-15	1/2-3/4
6. SUDANGRASS	WARM	MAY 16 - JULY 15	5-10	1/2-3/4
7. SORGHUM	WARM	MAY 16 - JULY 15	5-10	1/2-3/4
8. WINTER WHEAT	COOL	SEPTEMBER 1 - 30	20-35	1-2
9. WINTER BARLEY	COOL	SEPTEMBER 1 - 30	20-35	1-2
10. WINTER RYE	COOL	SEPTEMBER 1 - 30	20-35	1-2
11. TRITICALE	COOL	SEPTEMBER 1 - 30	25-40	1-2

THIS TABLE WAS TAKEN FROM UDFCD FOR RECOMMENDED ANNUAL GRASSES FOR THE DENVER METROPOLITAN AREA. THIS TABLE MAY BE USED UNLESS A SITE-SPECIFIC SEED MIX IS REQUESTED AND APPROVED.

TABLE TS-1

TEMPORARY SEEDING NOTES

INSTALLATION REQUIREMENTS

1. DISTURBED AREAS ARE TO BE SEEDED WITHIN 21 DAYS AFTER CONSTRUCTION ACTIVITY OR GRADING ENDS IF SEASON ALLOWS.

2. IF NECESSARY, SOIL IS TO BE CONDITIONED FOR PLANT GROWTH BY APPLYING TOPSOIL, FERTILIZER, OR LIME.

3. SOIL IS TO BE TILLED IMMEDIATELY PRIOR TO APPLYING SEEDS. COMPACT SOILS ESPECIALLY NEED TO BE LOOSENED.

4. SEEDBED DEPTH IS TO BE 4 INCHES FOR SLOPES FLATTER THAN 2:1, AND 1 INCH FOR SLOPES STEEPER THAN 2:1.

5. ANNUAL GRASSES LISTED IN TABLE TS-1 ARE TO BE USED FOR TEMPORARY SEEDING. SEED MIXES ARE NOT TO CONTAIN ANY NOXIOUS WEED SEEDS INCLUDING RUSSIAN OR CANADIAN THISTLE, KNAPWEED, PURPLE LOOSESTRIFE, EUROPEAN BINDWEED, JOHNSON GRASS, AND LEAFY SPURGE.

6. TABLE TS-1 ALSO PROVIDES REQUIREMENTS FOR SEEDING RATES, SEEDING DATES, AND PLANTING DEPTHS FOR THE APPROVED TYPES OF ANNUAL GRASSES.

7. SEEDING IS TO BE APPLIED USING MECHANICAL TYPE DRILLS EXCEPT WHERE SLOPES ARE STEEP OR ACCESS IS LIMITED THEN HYDRAULIC SEEDING MAY BE USED.

8. ALL SEEDED AREAS ARE TO BE MULCHED (SEE FACTSHEET ON MULCHING).

9. IF HYDRAULIC SEEDING IS USED THEN HYDRAULIC MULCHING SHALL BE DONE SEPARATELY TO AVOID SEEDS BECOMING ENCAPSULATED IN THE MULCH.

MAINTENANCE REQUIREMENTS

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL SEEDED AREAS TO ENSURE GROWTH.

2. AREAS WHERE GROWTH IS NOT OCCURRING QUICKLY OR THE MULCH HAS BEEN REMOVED SHALL BE RE-SEEDED AS SOON AS POSSIBLE AND RE-MULCHED IF NEEDED.

3. SEEDED AREAS ARE NOT TO BE DRIVEN OVER WITH CONSTRUCTION EQUIPMENT OR VEHICLES.

Temporary Swale

What it is

A temporary swale is an earth channel used to convey runoff. A temporary swale can be excavated or formed upslope from an earthen berm, and may be lined or unlined.

When and Where to use it

- At the top of a slope to divert upland runoff away from the slope face.
- At the bottom of a slope to convey sediment-laden runoff to a sediment-trapping device such as a sediment basin.
- Along the perimeter of the construction site to keep runoff from leaving the site.

Figure TSW-1 illustrates cases where temporary swales are most effective.

When and Where NOT to use it

- Where longitudinal slope exceeds 10 percent (lining is required where longitudinal slope exceeds 2 percent).
- In areas where concentrated flow will overtop the swale transversely.

Construction Detail and Maintenance Requirements

Figure TSW-2 provides a construction detail and maintenance requirements for a temporary swale. Figure TSW-3 provides a construction detail and maintenance requirements for swale linings.

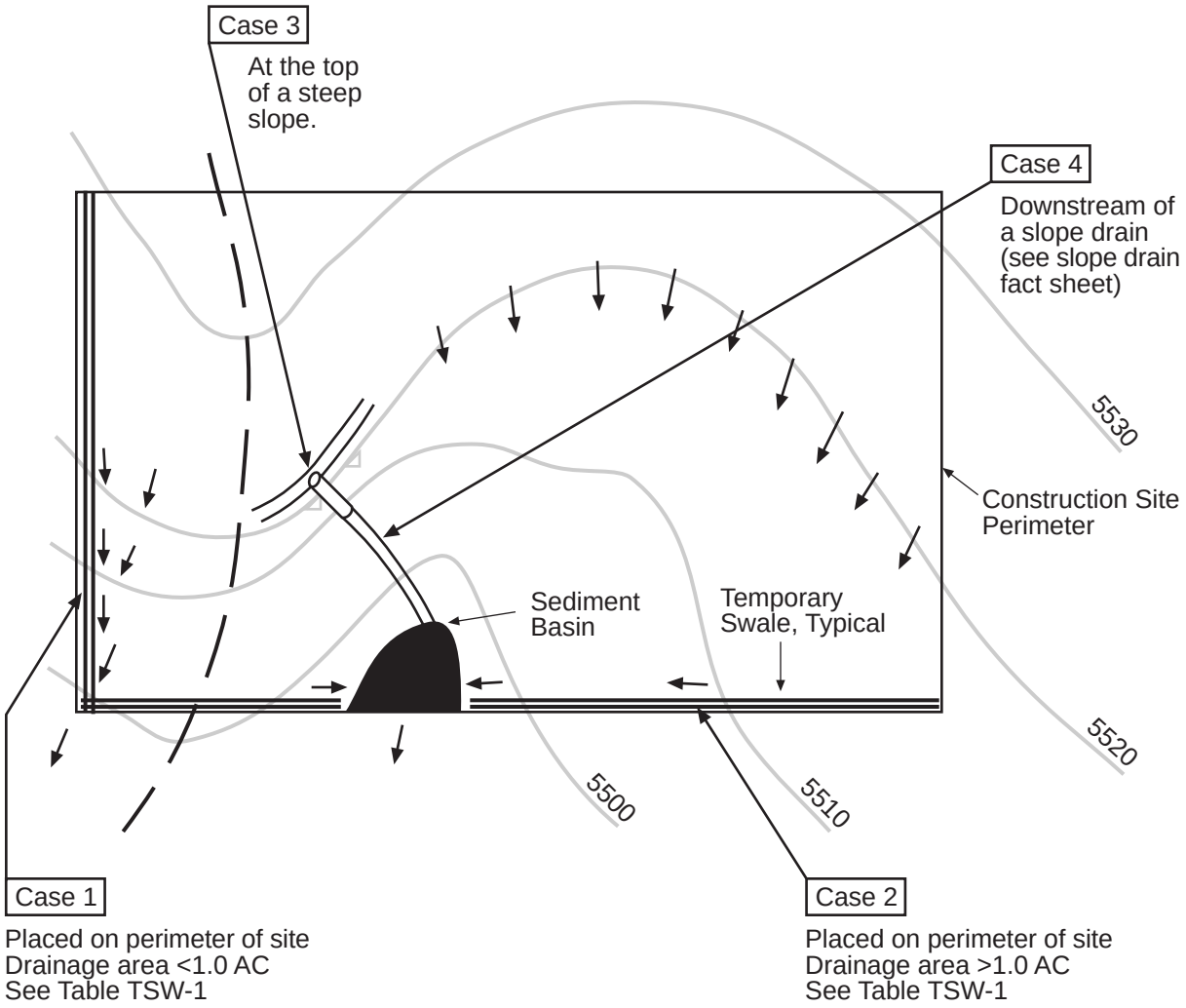
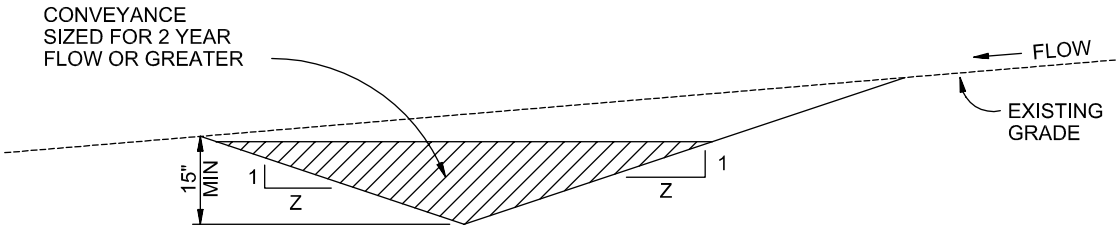


Table TSW-1

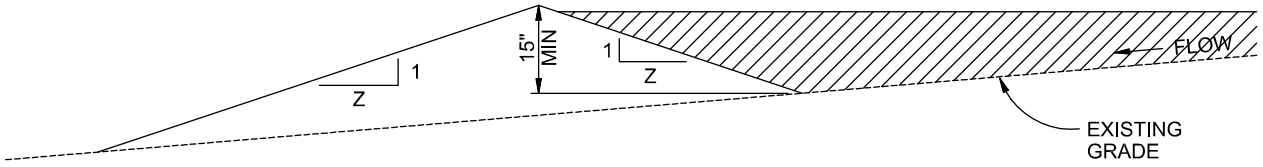
Temporary Swale Used as Perimeter Control	Case 1 DA < 1.0 AC	Case 2 DA > 1.0 AC
Continuous Grade	OK (1)	OK (1)
Area of Concentrated Flow	NO (3)	NO (2)

(1) Silt Fence or Straw Bale Barrier may be used as alternative to a Temporary Swale.
(2) With Temporary Swales Sediment Basin is required for concentrated flow from drainage areas > 1.0 AC.
(3) Check Dam is required at concentrated flow for drainage areas >1.0 acres.

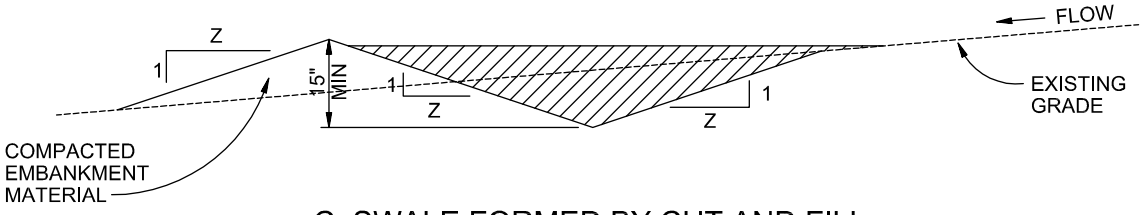
City of Colorado Springs Storm Water Quality	Figure TSW-1 Temporary Swale Application Examples



A. EXCAVATED SWALE



B. SWALE FORMED BY BERM



C. SWALE FORMED BY CUT AND FILL

TEMPORARY SWALE

NTS

TEMPORARY SWALE NOTES

INSTALLATION REQUIREMENTS

1. TEMPORARY SWALES SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

2. THE AREA UNDER WHICH THE EMBANKMENT IS TO BE INSTALLED SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ALL VEGETATION AND ROOT MAT.

3. EMBANKMENT MATERIAL SHALL CONSIST OF SOIL WITH A MINIMUM OF 15% PASSING A #200 SIEVE. EXCAVATED SOIL CAN BE USED IF IT MEETS THIS REQUIREMENT.

4. EMBANKMENT IS TO BE COMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D 698.

5. SWALES WITH SLOPE > 2% SHALL BE LINED, SEE FIGURE TSW-3.

6. SWALES ARE TO DRAIN INTO A SEDIMENT BASIN OR OTHER STABILIZED OUTLET.

7. Z SHALL BE 3 OR GREATER.

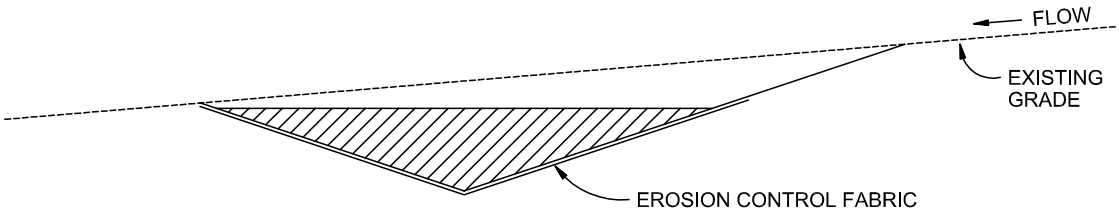
MAINTENANCE REQUIREMENTS

1. CONTRACTOR SHALL INSPECT SWALES AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL.

2. SWALES SHALL BE ROUTINELY CLEARED OF ANY DEBRIS OR ACCUMULATION OF SEDIMENT.

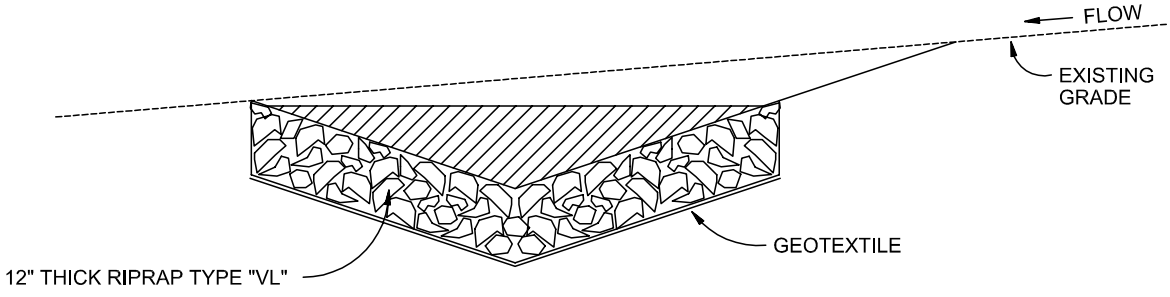
3. ERODED SLOPES OR DAMAGED LININGS SHALL IMMEDIATELY BE REPAIRED.

4. TEMPORARY SWALES SHALL REMAIN OPERATIONAL AND PROPERLY MAINTAINED UNTIL THE SITE AREA IS PERMANENTLY STABILIZED WITH ADEQUATE VEGETATIVE COVER AND/OR OTHER PERMANENT STRUCTURE AS APPROVED BY THE CITY.



A. EROSION CONTROL FABRIC

2%≤SLOPE≤5% AND VELOCITY ≤ 8 FPS



B. RIPRAP

SLOPE>5% OR VELOCITY >8 FPS

SWALE LINING

NTS

SWALE LINING NOTES

INSTALLATION REQUIREMENTS

1. REFER TO THE EROSION CONTROL BLANKETS FACTSHEET FOR PROPER INSTALLATION OF EROSION CONTROL FABRIC LINING.

2. SWALES WITH EASILY EROSIVE SOILS AND SLOPES LESS THAN 2%, SHALL BE LINED WITH EROSION CONTROL FABRIC.

3. VELOCITIES FOR EROSION CONTROL FABRICS SHALL NOT EXCEED 8 FPS. SWALES WITH VELOCITIES GREATER THAN 8 FPS SHALL BE LINED WITH RIP RAP.

MAINTENANCE REQUIREMENTS

1. CONTRACTOR SHALL INSPECT SWALE LININGS AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL AND WEEKLY DURING PERIODS OF NO RAINFALL.

2. DAMAGED LININGS SHALL IMMEDIATELY BE REPAIRED.

3. REFER TO THE EROSION CONTROL BLANKETS FACTSHEET FOR PROPER MAINTENANCE.

4. DISPLACED RIPRAP OR COARSE AGGREGATE IS TO BE REPLACED AS SOON AS POSSIBLE.

5. SWALE LININGS ARE TO REMAIN IN PLACE AND BE PROPERLY MAINTAINED UNTIL THE TEMPORARY SWALE IS REMOVED.

City of Colorado Springs Stormwater Quality	Figure TSW-3 Swale Linings Construction Detail and Maintenance

Vehicle Tracking

What it is

Vehicle tracking refers to the stabilization of construction entrances, roads, parking areas, and staging areas to prevent the tracking of sediment from the construction site.

When and Where to use it

- All points where vehicles exit the construction site onto a public road.
- Construction entrance/exit should be located at permanent access locations if at all possible.
- Construction roads and parking areas.
- Loading and unloading areas.
- Storage and staging areas.
- Where trailers are parked.
- Any construction area that receives high vehicular traffic.

When and Where NOT to use it

- The vehicle tracking area should not be located in areas that are wet or where soils erode easily.

This picture shows an unstabilized entrance where dirt is being tracked onto a public road.

Construction Details and Maintenance Requirements

Figure VT-1 and VT-2 provide construction details and maintenance requirements for vehicle tracking.

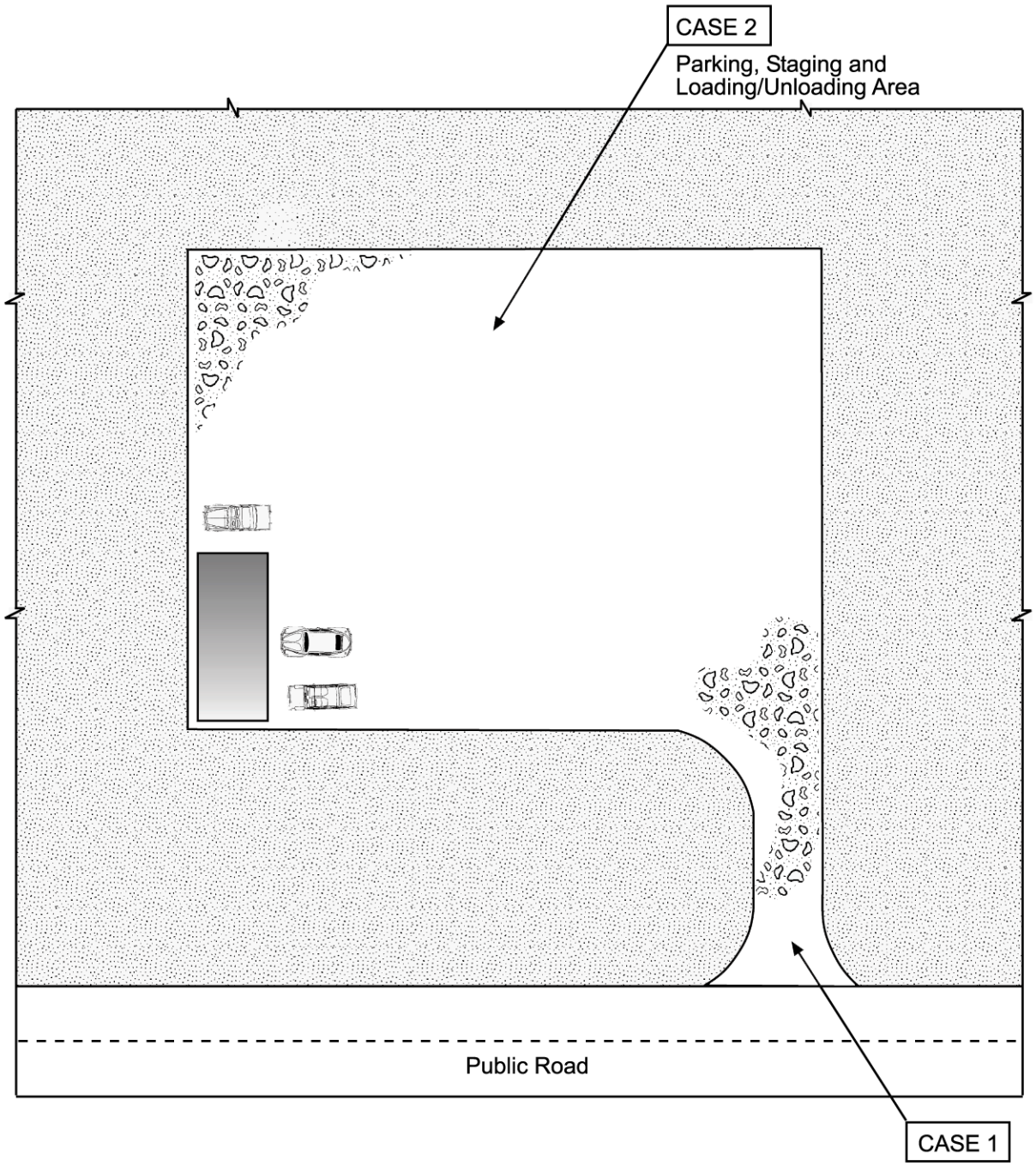
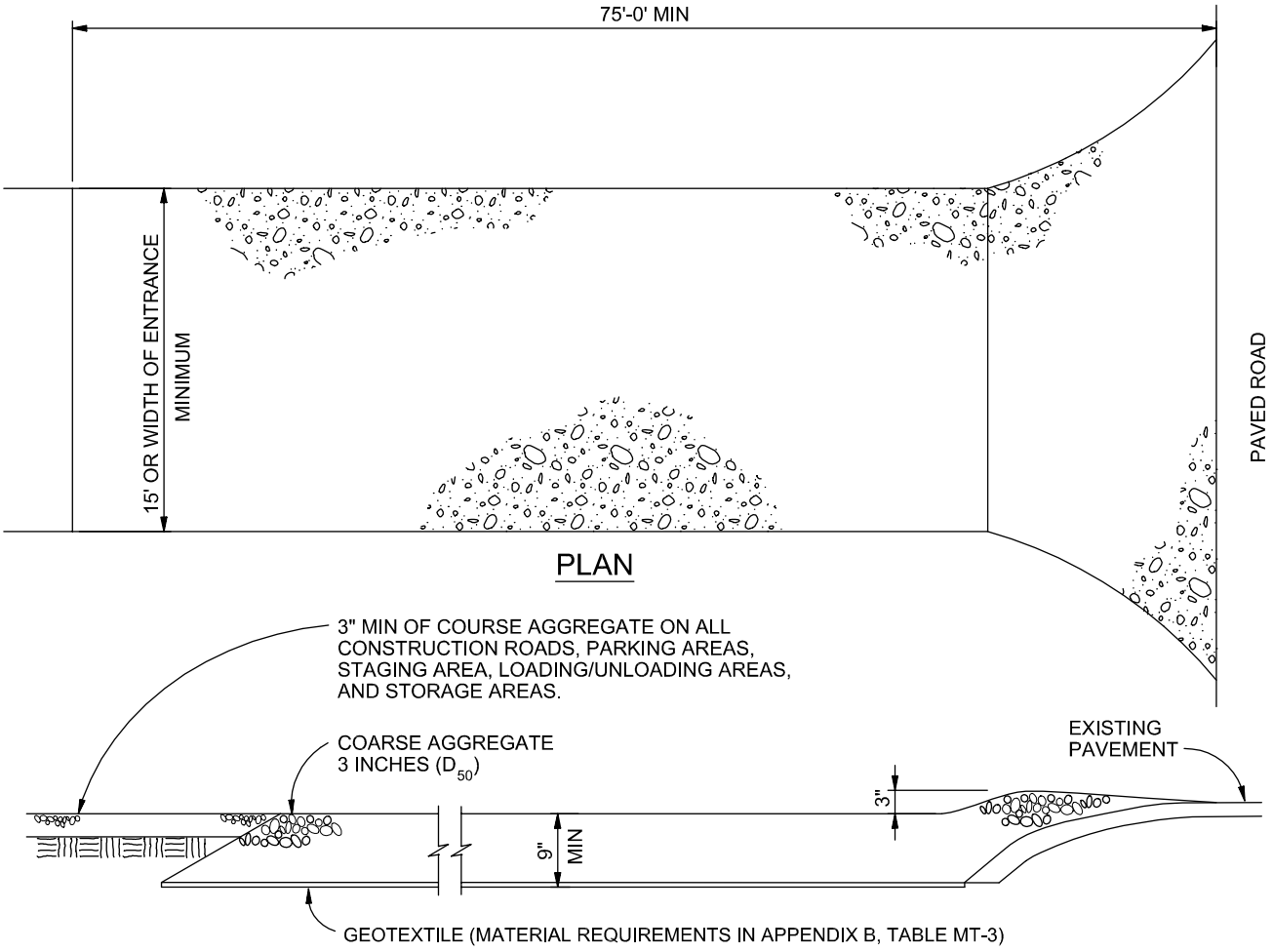


Table VT-1

	Case 1	Case 2
Gravel Thickness	9”	3”
Filter Fabric	YES	NO

City of Colorado Springs
Storm Water Quality

Figure VT-1
Vehicle Tracking
Application Examples



VEHICLE TRACKING

NTS

VEHICLE TRACKING NOTES

INSTALLATION REQUIREMENTS

1. ALL ENTRANCES TO THE CONSTRUCTION SITE ARE TO BE STABILIZED PRIOR TO CONSTRUCTION BEGINNING.

2. CONSTRUCTION ENTRANCES ARE TO BE BUILT WITH AN APRON TO ALLOW FOR TURNING TRAFFIC, BUT SHOULD NOT BE BUILT OVER EXISTING PAVEMENT EXCEPT FOR A SLIGHT OVERLAP.

3. AREAS TO BE STABILIZED ARE TO BE PROPERLY GRADED AND COMPACTED PRIOR TO LAYING DOWN GEOTEXTILE AND STONE.

4. CONSTRUCTION ROADS, PARKING AREAS, LOADING/UNLOADING ZONES, STORAGE AREAS, AND STAGING AREAS ARE TO BE STABILIZED.

5. CONSTRUCTION ROADS ARE TO BE BUILT TO CONFORM TO SITE GRADES, BUT SHOULD NOT HAVE SIDE SLOPES OR ROAD GRADES THAT ARE EXCESSIVELY STEEP.

MAINTENANCE REQUIREMENTS

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL STABILIZED AREAS, ESPECIALLY AFTER STORM EVENTS.

2. STONES ARE TO BE REAPPLIED PERIODICALLY AND WHEN REPAIR IS NECESSARY.

3. SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED DAILY BY SHOVELING OR SWEEPING. SEDIMENT IS NOT TO BE WASHED DOWN STORM SEWER DRAINS.

4. STORM SEWER INLET PROTECTION IS TO BE IN PLACE, INSPECTED, AND CLEANED IF NECESSARY.

5. OTHER ASSOCIATED SEDIMENT CONTROL MEASURES ARE TO BE INSPECTED TO ENSURE GOOD WORKING CONDITION.

3.4 Construction Site Inspections

Inspections of construction sites are conducted by City Engineering to ensure compliance with the Grading Plan and Erosion and Stormwater Quality Control Plan. Conditions for which a Grading Plan is required include:

1. Sites with excavation or fill of 500 cubic yards or more, or
2. The grading of a site with land disturbance of one or more acres, or
3. Grading on any property with a natural slope > 8 percent, or
4. Any combination of the above three, or
5. Any grading or other disturbance of land in an area zoned Hillside Area Overlay zone under Section 504 of Part 5 of Article 3 of Chapter 7 of the City Code.

At a minimum, an Erosion and Stormwater Quality Control Plan is required whenever a Grading Plan is required or when 1 acre or more of land will be disturbed. An Erosion and Stormwater Quality Control Plan may be required for other specific minor land disturbing activities (see Section 3.2 of this *Manual – General Principles, Applicability*) if deemed necessary by the City Engineer.

The focus of construction site inspections is to ensure grading is in compliance with the approved Plan and that Best Management Practices (BMPs) are installed and maintained properly to prevent site runoff, spillage and leakage, improper sludge or waste disposal, and drainage from raw material storage from leaving the site creating public safety, property or stormwater quality impacts. Inspections also serve as a means of educating owners/owner's representatives, developers, and contractors of the need to minimize the stormwater quality impacts from site operations and to assist in complying with the requirements of the City's Stormwater Construction Sites Program. City Engineering staff will work with and assist the owner/owner's representative and contractor to maintain compliance with its Grading and Erosion and Stormwater Quality Control requirements. The inspection procedures listed below provide a means of achieving this.

City Engineering's review of a Grading Plan and Erosion and Stormwater Quality Control Plan is the first step in determining the type of inspections needed and the relative priority of the site for inspections.

Types of Inspections

The following are inspections that may be performed at the construction sites within the City of Colorado Springs. Not all inspection types will be performed at all sites.

Self-Monitoring Inspections

The owner or his representative conducts self-monitoring inspections. The purpose of these inspections is to ensure that all BMPs are installed according to approved plans and that the BMPs are being properly maintained. The person performing the inspections must be a registered professional engineer in Colorado, a certified erosion control specialist, or certified in a City-approved inspection training program within 12 months of City adoption of these BMP requirements. The self-monitoring inspections are to be performed and documented on a bi-weekly basis. In addition to the bi-weekly inspections, the owner or his representative shall perform inspections of all BMPs after significant precipitation events to

insure that the BMPs have operated as designed, to determine if maintenance is needed, and to locate and clean up any areas where materials have runoff the site. The owner or his representative will record the results of all bi-weekly inspections and inspections after a significant precipitation event by completing a copy of the City of Colorado Springs Inspection Checklist (Appendix C) or similar inspection checklist. Completed Inspection Checklists will be kept on-site and available to city inspectors. Self-monitoring inspections may be required on other construction sites, even if an Erosion and Stormwater Quality Control Permit is not required. The City may require the submission of these inspection reports on a site-specific basis.

Initial Inspections

Initial inspections are to confirm that the approved plan is being implemented. The City Engineering Inspector must be contacted by the owner/owner's representative/contractor at least 48 hours prior to scheduling the Initial Inspection. It is expected that at the time of the initial inspection, the first level of BMPs will have been implemented according to those plans and that no land disturbing activity will have occurred prior to the Initial Inspection. This inspection also serves to establish contact between inspectors and the site personnel responsible for implementing the approved plans. This is especially important for those sites that have a long construction period or the potential to have a significant impact. Initial inspections are only conducted on sites that require a Grading Permit or Erosion and Stormwater Quality Control Permit. These inspections are documented on the Inspection Checklist.

Compliance Inspections

Compliance inspections are routine inspections conducted to ensure that the BMPs are implemented according to approved plans and are receiving proper maintenance. The inspector not only verifies that the BMPs are functioning according to design and only allowable discharges are occurring, but also the required documentation of activities is occurring. The inspector will examine the bi-weekly Field Inspection Checklists to make sure the owner or his representative is performing the inspections as required and to compare actual conditions to those stated on the checklist. Compliance inspections may also occur during or immediately after a precipitation event. Routine compliance inspections are only conducted for sites that require a Grading Permit or Erosion and Stormwater Quality Control Permit. The City uses the Inspection Checklist to document these inspections.

Reconnaissance Inspections

Reconnaissance inspections do not occur on a routine basis and are conducted for the general purpose of determining conditions at the site, particularly if the site has contributed sediment to drainageways or other drainage facilities, or if material has runoff the site. These inspections are generally performed from off-site on adjacent streets or property, and may occur during or immediately after a significant precipitation event. This type of inspection is normally aimed at potential problem sites or sites that typically do not require an Erosion and Stormwater Quality Control Permit. The results of a reconnaissance inspection could require a site that previously was not required to develop an Erosion and Stormwater Quality Control Plan to develop one. The inspection will be documented using the Inspection Checklist.

Complaint Response Inspections

These inspections will occur in response to either a citizen complaint or a complaint from another City agency. The inspector will inform the contractor and owner/owner's representative of the complaint, determine the validity of the complaint, and if necessary, advise on the necessary repair, maintenance or cleanup. The inspector may also require the implementation of specific measures or additional BMPs to prevent the recurrence of the problems that gave rise to the complaint. All construction sites are subject to complaint response inspections. The inspection will be documented using the Inspection Checklist.

Follow-up Inspections

Follow-up inspections are conducted to ensure that measures or requirements from a previous inspection have been performed or complied with. These requirements may involve the cleanup of a discharge, implementing additional or revised BMPs, repairing, re-installing, or maintaining damaged or non-functioning BMPs. All construction sites are subject to follow-up inspections. The inspection will be documented using the Inspection Checklist.

Final Inspections

A final inspection of the site is conducted to determine overall compliance with the Grading Plan and/or Erosion and Stormwater Quality Control Plan, to determine if measures have been taken to stabilize the site prior to final approval, and prior to release of any financial assurances. The City Engineering Inspector must be contacted by the owner/owner's representative/contractor at least 48 hours prior to scheduling the Final Inspection. The inspection will focus on whether the following have occurred and if sediment from erosion is leaving the site or entering into drainageways or other drainage facilities.

1. All grading is in compliance with the approved Plan, and all stabilization is completed, including vegetation, retaining walls or other approved measures.
2. The site has final stabilization equal to a uniform vegetative cover with a density of at least 70 percent compared to the original undisturbed site and such cover is capable of adequately controlling soil erosion, as determined by the City Engineer, or equivalent permanent, physical erosion reduction methods have been employed.
3. Removal of all temporary erosion and sediment control measures.
4. Installation of all approved permanent (post construction) stormwater quality BMPs.
5. Removal of all stockpiles of soil, construction material/debris, construction equipment, etc.
6. Streets, parking lots and other paved surfaces (on-site and off-site) are clean.
7. Removal of sediment and debris from drainage facilities (on-site and off-site) and other off-site property caused by the construction activity, including proper restoration of any damaged property.

Final inspections are only conducted for those sites that are required to have a Grading Permit or Erosion and Stormwater Quality Control Permit, unless other documentation from the owner or owner's representative is allowed by the City Engineer. The inspection will be documented using the Inspection Checklist.

Frequency and Types of Inspections of Construction Sites

The frequency and type of inspections conducted by City Engineering is dependent on the characteristics of the site, the type or phase of construction and the potential for the site to impact stormwater quality and other areas of environmental concern. The level of construction activity throughout the City and availability of staff resources will also factor into the decision. Key factors involved in the decision that relate to construction and the site are:

1. The size of the disturbed area.
2. The length of time that the site will be left disturbed.
3. The proximity of the construction site to areas of environmental concern.
4. Past experiences with the owner/contractor.
5. The phase of construction.
6. Season of land disturbing activity.

3.5 Construction Enforcement Strategy

The following strategy will be used to ensure compliance with the City's Grading Plans and/or Erosion and Stormwater Quality Control Plans.

Goal of Strategy

To encourage owners, developers, and contractors to take the necessary measures to ensure that their construction sites do not create negative impacts to public safety, property, or water resources.

Policies

The following policies apply to enforcement at construction sites in the City.

1. It will be the policy of the City of Colorado Springs to encourage compliance with grading, erosion and stormwater quality control requirements by working with engineers and developers during the design and implementation phases of a project to incorporate proper construction BMPs. The City will work with contractors to inform and educate them on the proper implementation and maintenance of construction BMPs.

2. The City will try to bring a construction site into compliance with its approved plan prior to formal enforcement. This will be accomplished by working with the owner, developer, and contractor. The intent will be to allow them reasonable opportunity to take the necessary measures before more formal action, such as a Stop Work Order or Notice and Order, is taken.

3. The City considers the owner of the land the ultimate responsible party for all construction activities. It is the responsibility of the owner to take all necessary measures to ensure that the site is in compliance with City ordinances and the Grading Plan and/or Erosion and Stormwater Quality Control Plan.

4. The City has tried to make its requirements consistent with State requirements for construction activities (CDPS General Permit – Stormwater Discharges Associated with

Construction Activities). Should requirements conflict, it will be the responsibility of the owner to bring these conflicts to the City's attention and propose how to address them.

5. Whenever a Stop Work Order is issued, it will be the City's policy to stop any or all City activities or further approvals relative to the site until the necessary measures are taken to address the concerns, as stipulated in the Stop Work Order.

Definitions

1. Stop Work Order. For this program, a Stop Work Order is an order issued by the City Engineer or his designee to the owner and contractor of a construction site. The Order is used when the owner has failed to obtain a Grading Permit from the City Engineer or to take the necessary measures to comply with the Grading Plan and/or the Erosion and Stormwater Quality Control Plan approved for the site. When the Order is issued it requires all work on the site to cease until the Owner takes the measures necessary to bring the site into compliance with the Grading Plan and the Erosion and Stormwater Quality Control Plan.

2. Notice and Order. The initiation of formal enforcement action.

3. Inspection. The term "inspection" in this document refers to an inspection performed by an employee of the City's Engineering Division, except for self-monitoring inspections which are performed by the owner or their representative, in an effort to determine the status of compliance of a construction site with its Grading Plan and/or Erosion and Stormwater Quality Control Plan. The inspection includes, but is not limited to, the following inspection types: Initial Inspections, Compliance Inspections, Reconnaissance Inspections, Complaint Inspections, Follow Up inspections, and Final Inspections.

4. Erosion and Stormwater Quality Control Plan. An Erosion and Stormwater Quality Control Plan is a plan developed in compliance with the requirements included in the *Manual*: Stormwater Quality Policies, Procedures and Best Management Practices. Its purpose is to ensure that measures are in place to ensure that the construction site does not create negative impacts on persons, property or water resources. It requires the design, implementation, and maintenance of stormwater BMPs. The plan may be combined with the Grading Plan if all required information can be clearly presented. The plan will then be a combined Grading, Erosion and Stormwater Quality Control Plan.

5. Grading Permit/Erosion Control Permit. An approved Erosion and Stormwater Quality Control Plan becomes an Erosion Control Permit once it is accepted and signed off on by the City Engineer. The permit authorizes the implementation of the approved erosion and stormwater quality control measures. Signoff and acceptance of both the Grading Plan and the Erosion and Stormwater Quality Control Plan, or a combined plan, by the City Engineer shall constitute a Grading Permit, authorizing the approved land disturbance and implementation of the approved erosion and stormwater quality control measures.

6. Letter of Noncompliance. A Letter of Noncompliance is written to the property owner and contractor to notify them that they are in violation of the Grading Permit or are in noncompliance with the requirements of the *Manual* or the City Code relating to grading, erosion, and stormwater quality requirements. The letter contains a description

of the measures required to bring the site into compliance and a date by which these measures must be implemented.

7. Municipal Summons. Issuance of a summons to appear before a judge in Municipal Court.

Enforcement Procedures

An important element of the City's enforcement program is inspections. A good program for monitoring the compliance status of sites with their plans may be sufficient encouragement to ensure compliance with their Grading and Erosion Control Permits. The City encourages compliance by requiring self-monitoring inspections by the owner. The self-monitoring inspections require the owner to identify areas of noncompliance and take corrective actions. In addition, the City's inspection priority system provides for the rewarding of complying parties with less frequent inspections.

When the City performs inspections at construction sites, it notes those areas that need to be addressed to bring the site into compliance with its Grading and Erosion Control Permit. A time frame for addressing any noncompliance is included in the inspection report as a required follow-up action. It is expected that the inspector and the site contact will come up with a schedule that is mutually agreed upon. Based on a review of the site, the inspector will list the actions that are needed. The inspector will determine if a Follow Up inspection is needed or if submission of information that verifies that the necessary actions were taken is adequate.

There are several situations where the City may determine that more aggressive action is necessary to get the site into compliance with its permit. The first situation is when there are impacts on public safety, property or water resources. This could include, but is not limited to, the deposition of sediment on a roadway that has the potential to cause accidents, the wash out of channels, spills of toxic materials, deposition of sediment that causes or has the potential to cause property damage, or the deposition of materials into water ways. The magnitude of the impacts will determine what action is appropriate. Another instance that may result in more aggressive action is when the history of the contractor/owner/ developer suggests that a more formal action is necessary. Problems that may warrant such action include:

- Where the same problem is reoccurring at the site.
- Where the site appears to be having frequent minor problems.
- The individuals involved have a history of noncompliance.

There are several options for formal action that are available to the City. Table CS-1 summarizes some of the more common options. The City may take other action as deemed appropriate.

TABLE CS-1
Enforcement Options

Enforcement Option	Description	Typical Applications
Letter of Noncompliance	This is a letter written to the owner and contractor. It contains a description of the problem, the measures required to bring the plant into compliance and a timeframe for completion of those measures.	No immediate danger to the public safety, property or water resources. Compliance has not been achieved while working with the owner/representative or contractor. When the City wants to document ongoing problems and agreed upon follow-up.
Stop Work Order	This Order requires the owner and contractor to stop all activity on the site except for the work necessary to bring the site into compliance with its Grading Permit. Depending on the compliance problem and the City's past experience with the individuals involved, the City may impose the Order on only a portion of the site.	Used when there is an immediate threat to the public safety, property or water resources. Used when the site has failed to comply with the Letter of Noncompliance.
Permit Revocation	The City may revoke the Grading Permit and/or the Erosion Control Permit if the requirements of the Grading Plan and/or Erosion and Stormwater Quality Control Plan are not implemented. Revocation of the permit has the same effect as a Stop Work Order, except that the owner will need to resubmit a Grading Plan and/or Erosion and Stormwater Quality Control Plan.	Used when the site has failed to comply with the Stop Work Order. Used when the current plan has been judged to be inadequate, and the owner or contractor have failed to take the necessary measure to improve the plan.
Notice and Order	Formal enforcement action by the City. This can result in financial penalties. This action can be taken in conjunction with any of the measures listed above.	This action will be taken whenever the City will need to collect funds for abating the violation.
Municipal Summons	Issuance of a summons to appear before a judge in Municipal Court	Used when the site has failed to comply with the Stop Work Order or Notice and Order.

It is expected that under normal conditions the progression of enforcement actions is a Letter of Noncompliance, then a Stop Work Order, then a revocation of the Grading and/or Erosion Control Permit and then a Notice and Order. Once a permit has been revoked, it will be necessary to resubmit a Grading Plan and/or an Erosion and Stormwater Quality Control Plan to the City. A Municipal Summons may be issued for noncompliance with a Stop Work Order, a Notice and Order or other situations as outlined in the City Code.

APPENDIX E

TRAINING LOGS

Altitude Training Associates

Awards this Certificate of Completion to

Mike Perry

**Who on October 5, 2020 successfully completed a one day,
Instructor Led Online Training Class in:**

Stormwater Management & Erosion Control During Construction (GEC)

Instructor
Altitude Training Associates, LLC

altitudeta.com

ALTITUDE TRAINING ATA ASSOCIATES

Transportation Erosion Control Supervisor Certification

COLORADO
Department of Transportation

David Cummings

In accordance to the Standard Specifications for Road and Bridge Construction per section 208.03 stating, "All ECM staff shall have working knowledge and experience in construction, and shall have successfully completed the Transportation Erosion Control Supervisor Certificate Training (TECS) as provided by the Department". I hereby certify that David Cummings has successfully completed training and has earned the Transportation Erosion Control Supervisor certification.

Tripp Minges

CDOT Hydrologic Resources
MS4 Construction Program Lead

Certification Number: **35552**
Certification Expires on: **6/21/2023**

APPENDIX F

PROJECT STATUS INFORMATION (INSPECTION RECORDS, STORMATER MAP UPDATES)