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Colorado Department
of Public Health
and Environment

Memorandum

To: Stormwater Construction Permittees

From: Rik Gay, Permits Section, Water Quality Control Division

Date: March 5, 2013

RE: Final Stabilization requirements for stormwater construction permit termination
Alternatives to the 70% plant density re-vegetation requirement

The Water Quality Control Division (Division) prepared this guidance to clarify options available to permittees to achieve final stabilization at construction sites.

In accordance with Part 1.C.4.c of the CDPS General Permit for Stormwater Discharges Associated with Construction Activity (COR-300000) (the stormwater permit):

*“Final stabilization is reached when all ground surface disturbing activities at the site have been completed and uniform vegetative cover has been established with an individual plant density of at least 70 percent of pre-disturbance levels, **or equivalent permanent, physical erosion reduction methods have been employed.**”*

When vegetation is used to achieve final stabilization, the 70% vegetation requirement applies to a **uniform** plant density, which means that all areas of the site that rely on a vegetative cover to achieve stabilization must be uniformly vegetated.

As provided in the bolded text above, the stormwater permit allows the permittee to use alternatives to vegetation to achieve final stabilization. All alternatives to vegetation must meet specific criteria to be considered equivalent to vegetation (see below). Permittees must ensure these criteria are met when planning for final stabilization in the Stormwater Management Plan (SWMP).

- **Stabilization must be permanent:** All final stabilization methods, whether the permittee implements vegetation or an alternative to vegetation, must be permanent, and must be designed and implemented as such. Temporary measures, such as erosion control blankets that are designed to be removed or to degrade in place, are not permanent and cannot be used to meet the final stabilization requirements in the permit.
- **ALL disturbed areas must be stabilized:** Final stabilization is achieved at a facility when **all** disturbed areas are stabilized. Stabilization alternatives must be implemented in all disturbed areas where the permittee will not utilize vegetation to meet the 70% vegetation requirement.
- **Alternatives must follow good practices:** All stabilization practices must be selected, installed and implemented following good engineering, hydrologic and pollution control practices adequate to prevent pollution or degradation of State waters. Typically, industry-accepted criteria manuals that document the appropriate use of practices using selection criteria such as slope and slope length, soil type, flow

conditions, pollutant sources, etc., will meet this standard. To help ensure that the alternate stabilization practices meet this standard, the Division recommends that a Licensed Professional Landscape Architect or other appropriately trained specialist design them.

Further, the SWMP must include details specifying how any alternative stabilization practices will be installed and implemented in accordance with those good practices. For example, if landscape gravel cover is implemented, the permittee must rely on good landscaping design practices and specifications for **permanent** rock cover, including proper soil preparation, underlayment, slope limitation, etc. in accordance with the industry-accepted criteria used.

Examples of practices that may be considered for alternative stabilization include:

- **Permanent Pavement and Buildings:** Permanent impervious areas, including roofed buildings, asphalt, and concrete meet the alternative stabilization criteria as long as they are designed and implemented to minimize erosion and are permanent. Note that when permanent impervious areas are part of the overall site plan and not implemented for the purposes of stabilization, it is not necessary to provide specifications for their use in the SWMP. Temporary coverings such as tarps and shelters with roofs that allow precipitation or runoff to contact underlying soils are **not** considered permanent stabilization practices.
- **Hardscape:** May be used where the upper soil profile is not exposed and the materials, including underlayment as necessary, are appropriate for slopes and other conditions. Hardscape must be designed to minimize erosion, e.g. must prevent rill erosion. The SWMP must include the design details including the underlayment type and fasteners. An example of an installation that does not meet the criteria of good engineering practices is spreading rock on a site without determining the necessary depth and underlayment to prevent erosion of the underlying soils.
- **Geogrid:** A geosynthetic material mainly used to permanently reinforce soil by interlocking with the soil to improve stabilization. Geosynthetic material must be designed to minimize erosion, e.g. must prevent rill erosion. Applications include base stabilization in areas slow to vegetate, highly erosive soils, steepened slopes, and embankments constructed over weak soils. A wide variety of such materials are available, for example, products such as Turf Reinforcement Mat (TRM), which provides a permanent alternative to hard armor erosion protection, and can withstand prolonged exposure to UV light with negligible degradation.
- **Xeriscape:** Landscape design that minimizes water requirements must be designed and implemented in such a way that area(s) will not have rill or other erosion between plants, including such practices as providing cover with rocks and/or bark.
- **Compacted and Stabilized Unpaved Driving Surfaces:** Includes areas such as stabilized gravel roads and parking areas. Stabilized unpaved surfaces must follow good engineering practices for slopes, preventing concentrated flow, compaction, and surface cover appropriate for traffic, etc. The surface must be designed, graded, compacted and otherwise prepared in such a way as to minimize erosion, e.g. prevent rill erosion.