the dirt on PROPER STOCKPILE MANAGEMENT

The Monthly Dirt
A monthly newsletter on the California Construction General Permit

Question: What is visible from the roadway, catches wind like a sailboat, and tends to spread out across the site with no effort at all?

If you guessed "*stockpiles*" then you know the subject of this month's newsletter. As you well know, there are certain features of a construction project that stick out like a sore thumb to an inspector—an un-covered stockpile certainly being one of them. Unprotected stockpiles are not only noticeable to any passers-by (including Water Board staff, inspectors and would-be litigators) but they also present a significant source of sediment for both water and wind erosion. In this edition of The Monthly Dirt, we will cover some of the basics about stockpiles, learn how they are not all handled the same, and review some common stockpile management misconceptions.

CGP Requirements The Construction General Permit actually addresses stockpiles in several places in the permit narrative. Attachments A (for LUPs), C (Risk Level 1), D (Risk Level 2), and E (Risk Level 3) each contain the same three specifications for proper stockpile management. They are:

- ☑ Cover and berm loose stockpiled construction materials that are not actively being used (i.e., soil, spoils, aggregate, fly-ash, stucco, hydrated lime, etc.)
- ☑ Contain and securely protect stockpiled waste material from wind and rain at all times unless actively being used.
- ☑ Contain stockpiled materials such as mulches and topsoil when they are not actively being used.

The first specification addresses soil and construction materials that must be ***covered and bermed*** when not actively in use. The second requirement, however, is more specific to construction wastes, which could include wood debris, broken concrete or pavement, demolition rubble, and even discarded erosion control materials. It should be noted that these stockpiles should never contain paper and plastic trash. Waste stockpiles have to be ***contained and secured*** from exposure to wind and rain unless being actively used. The third specification refers to stockpiles which exclusively contain mulches and topsoils—these must be ***contained*** when not being actively used.

Stockpiling Topsoil In Issue # 3 of the CGP Review (which is the State Water Board's periodic newsletter prepared by the Construction General Permit Training Team), there is an article that provides information on "*Stockpiling for Restoration*". The main point of the article highlights how topsoil is supposed to be stored. Often the first thing to go into the stockpile (and end up getting buried on the bottom) is the topsoil which is rich in organic material, native seed, and beneficial soil microorganisms. If this fertile soil is not placed in a segregated stockpile it too often becomes fill soil which is used elsewhere on the project then covered by relatively infertile, non-organic containing soil *(how tragic)*. For this reason, the State Water Board really encourages the stockpiling of these fertile topsoils. In fact, the proposed new permit has a whole section that will regulate the proper segregation and re-use of topsoil. It should be noted that, according to the third point of the CGP requirements, topsoils and mulches ought to be stockpiled differently. The American Association of State Highway and Transportation Officials (AASHTO) Center for Environmental Excellence website recommends the stockpiling and reuse of native soils where practical. So what's the difference between a regular stockpile and a topsoil stockpile? Aren't they both stockpiles containing dirt? Think again! Because of the fertile condition of most topsoil, when creating a topsoil stockpile, the mound should be no higher than 4 feet high for less than 6 months and covered to prevent soil erosion and contamination by weeds. Stockpiling topsoil for more than six months can disrupt beneficial soil microorganisms especially in the top one-foot layer of the stockpile. Which is why, prior to use, the top one foot of stockpiled material should be mixed with the remainder of the stockpile to ensure that living organisms are evenly distributed throughout the

material.

Covers There are many misconceptions when it comes to covering stockpiles. A common one being "when" they should be covered. The permit says stockpiles should be covered when they are inactive—inactive being defined by the CGP as *"areas of construction activity that are not active and those that have been active and are not scheduled to be re-disturbed for at least 14 days."* The Water Board considers stockpiles to be applicable to this definition. However, there are several really good reasons which should make you stop and consider covering even relatively active stockpiles. For example, if prolonged or heavy precipitation is predicted, it is wise to cover a stockpile, especially if it is located near a storm drain inlet, conveyance, or discharge point to prevent water erosion. And because they "stick out like a sore thumb", stockpiles are particularly vulnerable to wind erosion. During windy conditions it may be necessary to make an extra effort to keep the stockpile covered to minimize the chances of erosion.

As previously mentioned, to avoid the contamination of a stockpile from unwanted seed or sediment, or to keep it from spreading, it may be desirable to cover it up. Which brings us to the second misconception—wrapping a stockpile in plastic. True, many times plastic sheeting is an efficient and effective way to cover stockpiles, but there are some draw-backs to using plastic. Plastic surfaces, especially on large stockpiles cause an increase in runoff velocity, which accelerates erosion. Plastic sheeting is hard to secure in windy conditions. It also creates a trash problem. Not only does it degrade quickly, sending shards and microplastics into the receiving water, but it usually ends up in a landfill after its use on the project (adding to the landfill plastic problem). *The misconception is that plastic is the only viable option to covering a stockpile - which is untrue.* Geotextiles, jute mesh, straw mulch (with or without a tackifier), hydraulic mulch,

▶ Looks good? Stop and think about what is actually going on here. Where are those rills coming from?

▶ A vegetated and contained long-term stockpile.

hydroseed, and even salvaged "green waste" can provide very effective short term and long term alternatives to a plastic cover. These will allow storm water to infiltrate into the stockpile, reduce and slow runoff from the stockpile, and provide a healthier environment for topsoils.

Berms Literally the biggest misconception of them all when it comes to managing stockpiles. Most contractors and even inspectors feel obligated to surround a stockpile with fiber roll that typically is laid down on top of the plastic. If you stop and think about it, this practice is absolutely ludicrous! Other than making it look like a nice pretty bow around the wrapped package, what is it doing? Runoff from the smooth plastic surface of the stockpile can easily flow under the unsecured fiber roll or even over the fiber roll at high velocities causing erosion downgradient of the stockpile. Fiber roll is typically used to catch sediment, but what sediment is being caught on the surface of the plastic sheeting? *It would be better to put the properly installed fiber roll under the plastic and weigh down the plastic sheeting with sandbags.* In fact, notice that the CGP requirements reviewed earlier in this article say nothing about fiber rolls. The words used in the permit are "berm" and "contain". Since when did fiber roll become either of these? Outside of our normal thinking about stockpiles, berming means an elevation difference that keeps two things separated. In the case of stockpiles, we are keeping (or containing) the material in one place, while keeping it away from the other thing (storm water runoff). A berm can be made of compacted soil, aggregate, concrete blocks, k-rails, sandbags, asphalt, and sometimes properly installed fiber roll, silt fence, or compost socks. Sometimes the best way to comply with the CGP requirements is to locate the stockpiles in a place that naturally provides containment and berming (no wattle needed!) - ***MD***

TRAINING OPPORTUNITIES

Upcoming Online Events:

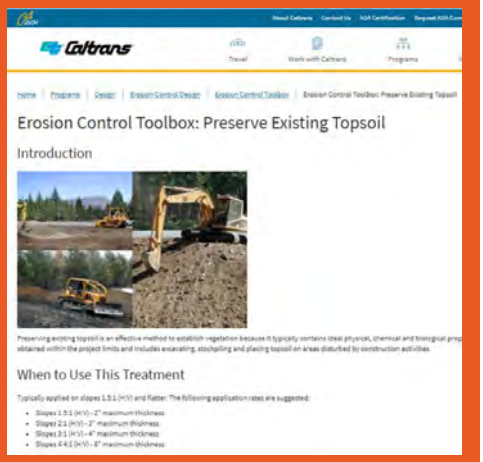
May 24-28, 2021: **PDU Week**
A Week of Free PDHs on FORGE

July 27-29, 2021: Online QSP/QSD Class

Register at https://secure.wgr-sw.com/training/live-courses/

Learn More About Topsoil Management

Caltrans includes a section in its Erosion Control Toolbox with useful information on how to manage topsoil—a requirement for contractors working on Caltrans projects. Click on the link below.



Proposed New CGP Topsoil Requirements:

Dischargers shall implement the following practices to preserve existing topsoil, to the extent feasible:

- Stockpile existing topsoil during construction and deploy when feasible to reestablish native vegetation prior to termination of coverage, and;
- Stabilize disturbed topsoil during construction and as part of final stabilization Notice of Termination requirements.

Please contact us if you have any questions ...

The Monthly Dirt

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MAY 2021

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STOCKPILES

DONE RIGHT.

2021 Stormwater Training Courses

Online QSP Training – $375 May 26-27, Jun 24-25

Online QSD Training - $200 May 28 (requires QSP course)

Caltrans Water Pollution Control (WPC) Manager Training – $450 May 19, June 16, July 21, Aug 18, Sep 15 (in-person with full Covid 19 protocols limited to 9 students). Complies with CT Standard Specifications 13-1.01D(4)(b).

Online Calculator Course - $175 May 5, Jun 9
(R factor, BMPs, CPESC math)

Discount prices listed (for cash, check or VenMo) Online courses limited to 12 students.

Send registration information to Alicia Meza at:
Alicia.meza@mshatch.com Send company, address, phone and email.

Details are included on our website at https://mshatch.com/training.html

Contact our Trainer of Record for more information:
John Gleason at john.gleason@mshatch.com (949) 981-3867

Stockpile Management

WM-3

Standard Symbol

Definition and Purpose

Stockpile management procedures and practices are designed to reduce or eliminate air and storm water pollution from stockpiles of soil, and paving materials such as portland cement concrete (PCC) rubble, asphalt concrete (AC), asphalt concrete rubble, aggregate base, aggregate subbase or pre-mixed aggregate, asphalt binder (so called “cold mix” asphalt) and pressure treated wood.

Appropriate Applications

Implemented in all projects that stockpile soil and other materials.

Limitations

Use of plastic cover might be restricted depending on the location of the site and regulatory permits.

Standards and Specifications

Stockpiles must comply with Standard Specification 13-4.03C (3) Stockpile Management.

Protection of stockpiles is a year-round requirement.

Locate stockpiles a minimum of 50 ft. away from concentrated flows of storm water, drainage courses, and inlets.

Utilize run-on and run-off BMPs to ensure stockpile materials are protected and do not have the potential to discharge material.

Implement wind erosion control practices as appropriate on all stockpiled material. For specific information see WE-1, “Wind Erosion Control.”

Stockpiles of contaminated soil shall be managed in accordance with WM-7, "Contaminated Soil Management."

Bagged materials should be placed on pallets and under cover.

Protection of Inactive Stockpiles

Inactive stockpiles of the identified materials shall be protected further as follows:

- Soil stockpiles:
  - soil stockpiles shall be covered or protected with soil stabilization measures and a temporary perimeter sediment barrier at all times. If no longer needed, they should be removed and disposed of properly.
- Stockpiles of portland cement concrete rubble, asphalt concrete, asphalt concrete rubble, aggregate base, or aggregate subbase:
  - the stockpiles shall be covered or protected with a temporary perimeter sediment barrier at all times. If no longer needed, they should be removed and disposed of properly.
- Stockpiles of "cold mix":
  - Cold mix stockpiles shall be placed on and covered with plastic or comparable material at all times and surround by a berm.
- Stockpiles/Storage of pressure treated wood with copper, chromium, and arsenic or ammonical, copper, zinc, and arsenate:
  - Treated wood shall be covered with plastic or comparable material and placed on pallets.

Protection of Active Stockpiles

Active stockpiles shall be protected further as follows:

- All stockpiles shall be covered, stabilized, or protected with a temporary linear sediment barrier prior to the onset of precipitation.
- Stockpiles of "cold mix" shall be placed on and covered with plastic or comparable material prior to the onset of precipitation.
- All Stockpiles should be removed from the site and disposed of properly.

Maintenance and Inspection

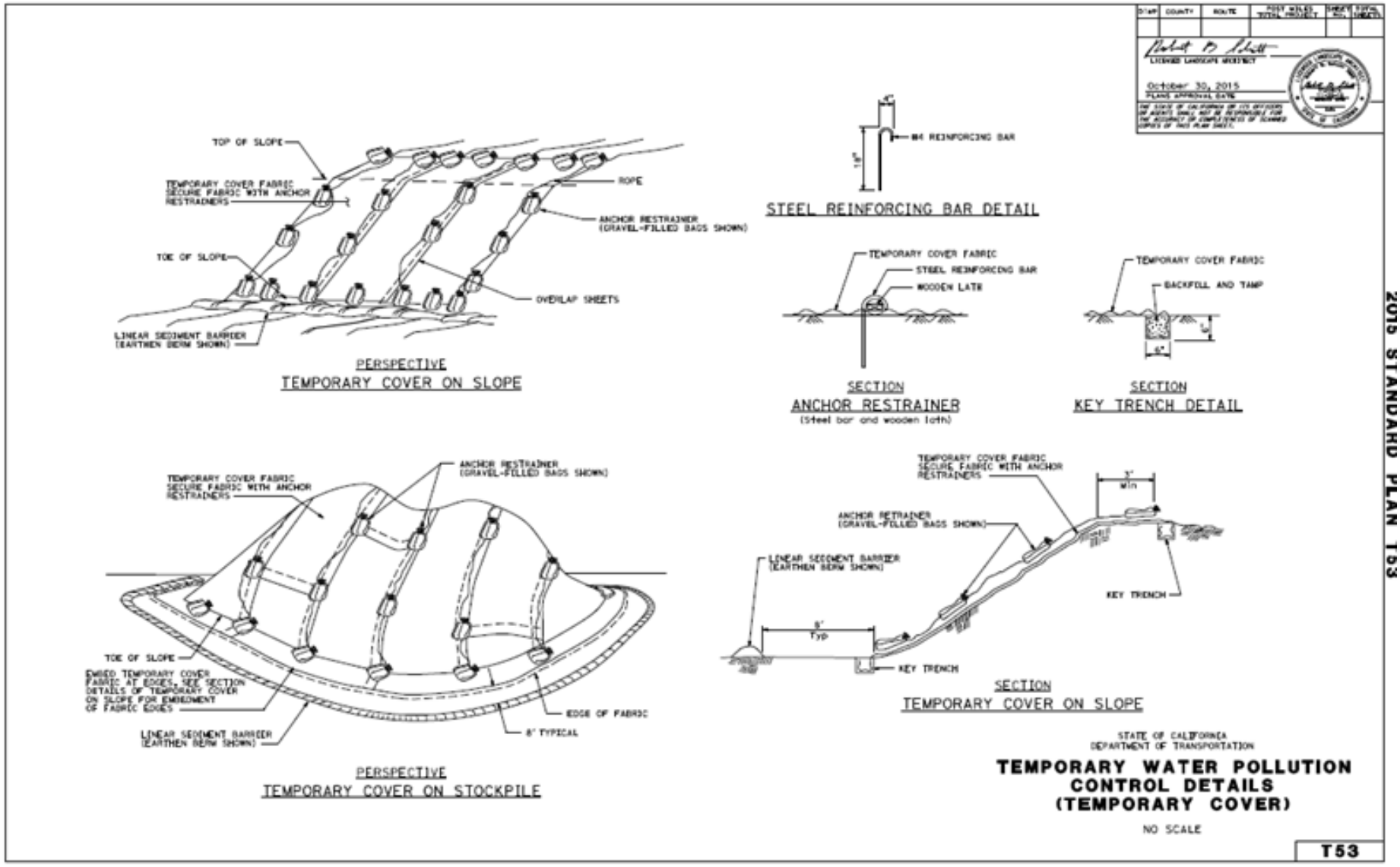
Inspect Stockpile Management areas before, during and after rainfall events, and at least weekly during other times.

Repair and/or replace perimeter controls and covers to keep Stockpile Management functioning properly.

Stockpile Management areas must be shown on the WPCDs and reflect site conditions.

SWPPP or WPCP

Stockpile Management must be discussed in Section 500.4.2 of the SWPPP or Section 30.3.2 of the WPCP.


TOP OF SLOPE
TEMPORARY COVER FABRIC SECURE FABRIC WITH ANCHOR RESTRAINERS
ROPE
ANCHOR RESTRAINER (GRAVEL-FILLED BAGS SHOWN)
TOE OF SLOPE
OVERLAP SHEETS
LINEAR SEDIMENT BARRIER (EARTHEN BERM SHOWN)
PERSPECTIVE
TEMPORARY COVER ON SLOPE
#4 REINFORCING BAR
STEEL REINFORCING BAR DETAIL
TEMPORARY COVER FABRIC
STEEL REINFORCING BAR
WOODEN LATH
SECTION
ANCHOR RESTRAINER
(Steel bar and wooden lath)
TEMPORARY COVER FABRIC
BACKFILL AND TAMP
SECTION
KEY TRENCH DETAIL
TEMPORARY COVER FABRIC SECURE FABRIC WITH ANCHOR RESTRAINERS
ANCHOR RESTRAINER (GRAVEL-FILLED BAGS SHOWN)
TOE OF SLOPE
EMBED TEMPORARY COVER FABRIC AT EDGES, SEE SECTION DETAILS OF TEMPORARY COVER ON SLOPE FOR EMBEDMENT OF FABRIC EDGES
EDGE OF FABRIC
8" TYPICAL
LINEAR SEDIMENT BARRIER (EARTHEN BERM SHOWN)
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TEMPORARY COVER FABRIC SECURE FABRIC WITH ANCHOR RESTRAINERS
3" Min
ANCHOR RETRAINER (GRAVEL-FILLED BAGS SHOWN)
LINEAR SEDIMENT BARRIER (EARTHEN BERM SHOWN)
KEY TRENCH
6" Typ
KEY TRENCH
SECTION
TEMPORARY COVER ON SLOPE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY COVER)
NO SCALE
T53
2015 STANDARD PLAN T53