

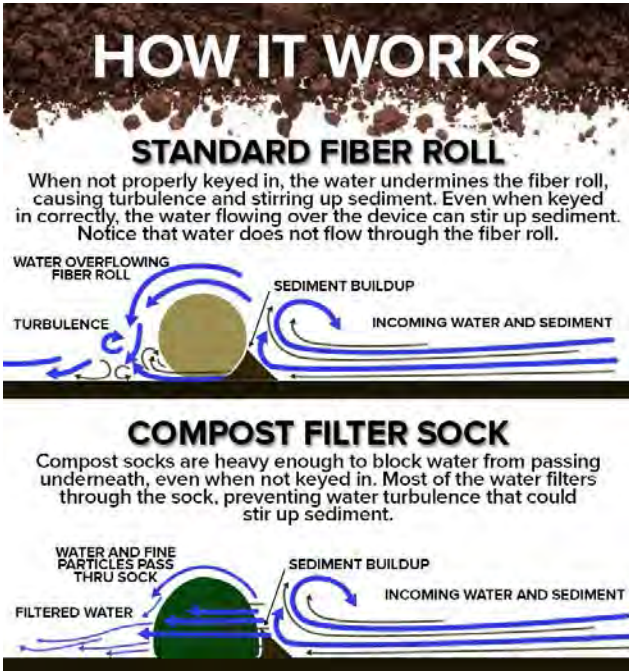
# The Monthly Dirt

A Monthly Newsletter on the California Construction General Permit

By WGR Southwest, Inc.

## STRAW ■ IS IT THE BEST DEAL?

The rainy season has officially started for California, and many construction facilities are scrambling to protect their drain inlets and keep sediment from leaving their projects. For many facilities, the go-to sediment control device seems to be fiber roll – a cheap and easy BMP to install, and very effective in certain applications. However, is fiber roll a viable control device for protecting drain inlets and keeping sediment from leaving a job site? Surprisingly, the answer may be no. Though fiber roll can be very effective under the right circumstances, it is not an effective filtration device, and many times does not even satisfactorily control sedimentation. As it turns out, a much better solution for protecting drain inlets and project perimeters is to use compost filter socks.



In a recent series of tests performed by *The Monthly Dirt* staff, we made some surprising discoveries about fiber roll and compost filter socks, and their ability to adequately filter storm water runoff. During some heavy rain events, we headed out to a nearby dirt lot with a couple lengths of fiber roll and two 8”-diameter compost socks. In an attempt to replicate an average installation, we staked the fiber roll in an overlapping circle around our test drain inlet, but did not fully trench it into the ground. After waiting 30 minutes for sediment to settle, we carefully sampled the water inside and outside the fiber roll. When the samples were analyzed using a calibrated turbidity meter, we were surprised to find that the sample collected downstream of the fiber roll was more turbid than the water on the other side of the roll! (See the sidebar for the numerical results). While we didn’t perform any scientific tests to see why this was happening, we did talk with a few experienced industry professionals, and came up with a reasonable explanation, as shown in the illustration on the left.

We performed a similar test on a drain inlet in a paved parking lot, where a noticeable petroleum sheen was flowing towards the drain. Of course, the fiber roll could not be staked into the asphalt, so we placed it around the drain in an overlapping circle. When we returned 30 minutes later, the sheen inside the roll had decreased, but was still slightly visible. The turbidity results were negligible, since the water flowing off the asphalt was not turbid. We then removed the fiber roll from **both drains** and replaced them with the compost socks. After waiting another 30 minutes, we returned to the drains to run our tests. The difference was night and day – the turbid water from the dirt lot was filtered clean, and the petroleum sheen on the asphalt lot was completely removed.

The explanation for this difference in performance is really quite simple. Straw repels water, which is one reason why many people in underdeveloped countries still use straw as roofing material. The purpose of straw wattle is not to filter water, but to stop the water until it builds up and flows over the top of the roll. This allows sediment enough time to settle on the “upstream” side of the roll, and the resulting water is less turbid. However, even when installed correctly, the wattle system sometimes allows water to pass under or over the roll, which has the unintentional result of creating turbid water *after* the device. *Continued on the next page.*

**COST COMPARISON**  
Over a three year period, how much might you spend per foot on inlet protection and filtration devices? We based these prices on the typical costs and expected lifespan of each device.

**FIBER ROLL**  
REPLACED FOUR TIMES OVER THE COURSE OF THREE YEARS  
\$0.68/LINEAR FT. x 4 INSTALLATIONS:  
**\$2.72/FT**

**COMPOST SOCK**  
INSTALLED ONCE AT THE BEGINNING OF THE THREE-YEAR PERIOD  
\$2.71/LINEAR FT. x 1 INSTALLATION:  
**\$2.71/FT**

Continued from page 1 Compost filter socks, on the other hand, are designed to not only slow the water and allow big particles time to settle, but also to *filter* the water that flows through and sift out any remaining particles or pollutants.

In addition to superior performance, manufacturers of compost filter socks claim their products offer a much longer life span than standard fiber roll. Filtrex International, the manufacturer of the popular SiltSoxx™ compost sock, claims their SiltSoxx™ typically last for 2-5 years, depending on site conditions. Conversely, standard fiber rolls will usually only last for a single storm season, sometimes even less. So even though compost socks are slightly more expensive than fiber rolls up front, they don't need to be replaced multiple times a year, as is the case with fiber rolls. On top of that, compost socks often require less labor to install, since they seldom need to be staked in, and never need to be trenched.

In light of all this information, *The Monthly Dirt* staff highly recommends that construction facilities consider using compost filter socks in place of fiber roll. The sediment runoff from your project will be controlled much better, and the drain inlets will be better protected. You may even end up spending less money by going with a more durable and effective filtration product. 🌱

### Turbidity Test Results

Our experiment focused on each sediment control device's ability to reduce water turbidity. We did not perform other tests to measure how each device impacts different aspects of water quality.

During the experiment, we surrounded the test drain in the gravel lot with 8"-diameter straw wattle that we slightly keyed in and staked into the ground. After waiting 30 minutes for any sediment to settle, we carefully collected samples both inside and outside the BMP.

We then replaced the straw wattle with 8"-diameter compost filter socks, allowed the sediment to settle out, and again collected samples both inside and outside the sock.

Here are the results:

#### Fiber Roll:

- Outside BMP: 152 NTU
- Inside BMP: 205 NTU

#### Compost Filter Sock:

- Outside BMP: 215 NTU
- Inside BMP: 16 NTU

The compost sock obviously outperformed the straw wattle quite a bit, lowering the NTU results to 16 NTUs – very acceptable numbers. The straw wattle not only didn't lower the numbers, but actually raised them, presumably due to agitation from the turbulence of the water overflowing and undermining the fiber roll.

## Upcoming Training

Got SWPPP? Classes coming to Lodi:

- ✓ QSP/QSD Training, **January 27 - 29, 2015**
- ✓ Need PDUs? We have free PDU workshops online at:  
[www.youtube.com/user/pduweek/videos](http://www.youtube.com/user/pduweek/videos)

For more information about these classes, go to [www.gotswppp.com](http://www.gotswppp.com).

*Need storm water training at your office or project location? Invite one of WGR's experienced QSPs to come and provide training for your crew.*

### Watch us perform the experiment:



[https://www.youtube.com/watch?v=PQ\\_krM](https://www.youtube.com/watch?v=PQ_krM)

### SWPPP Radio Interview

Listen to an interview with Bryan Hoffman (of Filtrex International) and Jerame Renteria (of Zanker Recycling), as they talk about the benefits of using compost materials as a filtration device.



<http://wgr-sw.com/podcasts/index.html#featured>

*Please contact us if you have any questions ...*

### The Monthly Dirt

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COME SEE OUR  
SHOWROOM!

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## PRODUCT SPOTLIGHT

**Filtrex® SiltSoxx™** is a compost-based sediment control device designed to help stop silt and sediment from leaving your jobsite.

SiltSoxx™ stops pollutants in two ways - by allowing water to temporarily pond outside the sock, and by cleansing water as it passes through the sock. Sediment is either filtered or settled out. Unlike fence or other sediment control devices, the unique construction of Filtrex® mesh allows water to pass through the sock while keeping silt and clay inside the device.

### Product Specifications:

- Meets all EPA, AASHTO, USACE and USDA-NCRS standards
- 8" Diameter in stock; call for additional sizes
- Available in a 160-foot continuous length, or pre-cut 10-foot segments (120ft/pallet)

STARTING AT  
**\$2.71**  
per foot



**filtrex®**  
AUTHORIZED DISTRIBUTER

# BMP

[bmpoutlet.com](http://bmpoutlet.com)

BMP Outlet is a supply house for affordable erosion control products, drain inlet protection, sorbents, spill containment, and field instruments.

We have a large inventory of many different types of product, and can order whatever you need for your project.

## SiltSifter® Tube

The patented SiltSifter® Tube is a dual-component sediment control device that is designed for filtration and high-flow, and is flexible enough to be used in many different applications requiring customized protection, such as around grated drain inlets. SiltSifter® Tubes are filled with 1-inch rock and Pine Wood Excelsior, a specialized wood chip filter for capturing silt, sediment, and soils.

### Product Specifications:

**Material:** High-density polyethylene with Poly Thread (4) Lock stitching

**Filtering Media:** Pine Wood Excelsior and 1" rock

**Diameter:** 9"

**Length:** 60"

**Weight (dry):** Approx. 30 lbs.

Only \$38.50  
(each)



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website!

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Since we're  
done with our REAPS...

LET IT RAIN!

LET IT RAIN!

LET IT RAIN!

Merry Christmas  
from the editors of **The Monthly Dirt**

remember the Reason for this season \* Luke 2:11

# Quick QSP Quips

## Required Inspections

### Risk 1, 2 & 3 – Traditional Projects:

- Weekly BMP inspections
- Pre-storm (within 48 hours before)
- Post-storm (within 48 hours after)
- During storms (every 24 hours)
- Quarterly for non-storm water flows

### Risk 2 & 3 – Traditional Projects:

- Daily inspect immediate access roads for sediment and track out

### LUP Types 1, 2 & 3 Projects:

- Daily visual BMP inspections and ensure that photographs of the site are taken before, during, and after storm events are taken during inspections, and submitted through the State Water Board's SMARTS website once every three rain events.

### LUP Types 2 & 3 Projects:

- Pre-storm (within 48 hours before)
- Post-storm (within 48 hours after)
- During storms (every 24 hours)

### Risk 3 & LUP Type 3 Projects:

- *If triggered*, receiving water or bioassessment observations

## Sampling Requirements

### Risk 1 – Traditional Projects:

- Only for non-visible pollutants if triggered

### Risk 2 & 3 – Traditional Projects:

- Discharge monitoring (pH and turbidity) at least 3 times per day when there is a discharge
- Non-visible pollutants *if triggered*.

### Risk 3 – Traditional Projects:

- Upstream and downstream receiving water testing *if triggered*.
- Bioassessment *if triggered*.

### LUP Type 1 Projects:

- Only for non-visible pollutants if triggered

### LUP Types 2 & 3 Projects:

- Discharge monitoring (pH and turbidity) at least 3 times per day when there is a discharge
- Non-visible pollutants *if triggered*.

### LUP Type 3 Projects:

- Upstream and downstream receiving water testing *if triggered*.
- Bioassessment *if triggered*.

### Non-visible sampling – All Risk and Type Levels:

- Triggered by a breach, malfunction, leakage, or spill observed during a visual inspection.
- Collected during the first 2 hours of discharge.
- Two samples one at the affected discharge point and another at an unaffected area

## RAIN EVENT ACTION PLANS

- ☁️ Required of Risk 2 & 3 traditional projects only. LUPs are not required to prepare REAPs.
- ☁️ Are triggered by a 50% or greater possibility of rain per the NOAA weather forecast at [www.srh.noaa.gov](http://www.srh.noaa.gov)
- ☁️ Must be prepared within 48 hours of the predicted storm event.
- ☁️ Must be implemented and a paper copy on-site within 24 hours of the predicted storm event.
- ☁️ Must be prepared by a QSP.

## Qualifying Rain Events

A qualifying rain event is “any event that produces 0.5 inches or more precipitation with a 48 hour or greater period between rain events.” In other words, it is a period of rain that is “bookended” by dry weather that is at least 48 hours long.

## Sampling Exemptions

1. It is not a “qualifying rain event”.
2. During dangerous weather conditions such as flooding and electrical storms.
3. Outside of scheduled site business hours.

Remember to document if any of these exemptions are applicable to your project.

### Numeric Action Levels

Prepare a NAL exceedance report within 10 days if either of the following is true about your project's daily average:

pH is <6.5 or >8.5  
Turbidity is >250 NTU

- ✓ NALs are daily averages of monitoring data from all discharge points for the entire day.
- ✓ pH must be averaged logarithmically. Averaging tool is at [www.wgr-sw.com/pH](http://www.wgr-sw.com/pH)
- ✓ NAL exceedance reports must be uploaded onto SMARTS.

### Rules of Engagement for Sampling

The following are helpful guidelines that have been extracted from the permit to assist you in knowing when to sample:

1. If there is no discharge, then no sample is required.
2. Collect a minimum of 3 samples per day for the entire site.
3. Each day, collect at least one sample from each point of discharge.

### Best Management Practices

- ❑ Risk 1 mandatory BMPs are found in Attachment C.
- ❑ Risk 2 mandatory BMPs are found in Attachment D.
- ❑ Risk 3 mandatory BMPs are found in Attachment E.
- ❑ LUP mandatory BMPs are found in Attachment A.
- ❑ The QSP must use a checklist for inspections and include a description of the BMPs evaluated and the deficiencies noted.
- ❑ Corrective action must begin within **72 hours** of identification and be completed as soon as possible.
- ❑ Inactive areas of soil disturbance that are not scheduled to be disturbed for at least 14 days must have effective soil cover.
- ❑ Projects must establish and maintain effective perimeter controls and stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from the site.
- ❑ Risk Levels 2 & 3 and LUP Types 2 & 3 projects must apply linear sediment controls along the toe of the slope, face of the slope, and at the grade breaks of exposed slopes to comply with the table shown at the right.

Slope Percentage	Sheet flow length not to exceed
0-25%	20 feet
25-50%	15 feet
Over 50%	10 feet

Questions? Call the QSP Help Hotline:  
(209) 649-0877 or email at  
[jteravskis@wgr-sw.com](mailto:jteravskis@wgr-sw.com)

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