

The Monthly Dirt

A Monthly Newsletter on the California Construction General Permit
By WGR Southwest, Inc.



Not too long ago, I had to go to a construction site that I had never been to before. While I was still $\frac{1}{2}$ mile from the project's location, I knew I was getting close because of the "signs" I was seeing. It was quite simple to follow the "trail" right to the project's gate. True, the track out control measures were in bad need of maintenance, but the project was missing another key element of their compliance program – street sweeping. The Construction General Permit requires the following:

LUP Types 2 & 3 and Traditional Risk Levels 2 & 3
"dischargers shall inspect on a daily basis all immediate access roads daily. At a minimum daily (when necessary) and prior to any rain event, the discharger shall remove any sediment or other construction activity-related materials that are deposited on the roads (by vacuuming or sweeping)."

Studies have been performed by municipalities, the USEPA, and other organizations that show that sweeping, when performed correctly with the right equipment, can be very effective in removing pollutants. A 2007 study conducted for the Contra Costa Clean Water Program¹ showed that significant pollutant loads were removed by performing regularly scheduled sweeping. Not only were typical pollutants such as sediment, trash, and organic debris removed, but also other toxic pollutants. The study estimated that over 2 pounds of PCBs and 2 pounds of mercury were removed by the sweeping.

But why should a construction site be proactive about street sweeping? First, as mentioned above, it is not an option; the CGP requires it for Risk/Type 2 & 3 projects. Second, Caltrans and most municipalities have requirements either in their contract language or municipal code to require projects to perform sweeping. Third, just as it led me to the construction site, so it will also lead State and municipal inspectors to the project.

Types of Sweepers²

Mechanical sweepers employ a rotating gutter broom to remove particles from the street gutter area, with a water spray used to control dust. The particles removed are placed in the path of a cylindrical broom that rotates to carry the material onto a conveyor belt and into a storage hopper.

Vacuum-assisted sweepers also use gutter brooms to remove particles from the street. However, the refuse is then placed in the path of a vacuum intake that transports the dirt to the hopper. The transported dirt is usually saturated with water. The overall efficiency of vacuum-assisted cleaners is generally higher than that of mechanical cleaners, especially for particles larger than the dust and dirt range (larger than about 3 mm).

Tandem sweeping operations involve two successive cleaning passes, first by a mechanical (broom and conveyor belt) sweeper, followed immediately by a vacuum-assisted sweeper.

Regenerative air sweepers blow air onto the pavement and immediately vacuum it back to entrain and capture accumulated sediments. Air is regenerated for blowing through a dust separation system.

Vacuum-assisted dry sweepers combine the important elements of tandem sweeping into a single unit. The mechanical sweeping component in these sweepers is completely dry. A specialized rotating brush is used to scratch and loosen dirt and dust from impervious surfaces, allowing the vacuum system to recover practically all particulate matter. A continuous filtration system prevents very fine particulate matter from leaving the hopper, which prevents the formation of the dust trails typically seen with conventional mechanical sweepers.

¹ http://www.cccleanwater.org/_pdfs/StreetSweepingReportFinal.pdf ² Source: <http://environment.fhwa.dot.gov/ecosystems/ultraurb/3fs16.asp>

Interview of a Sweeping Expert

The Monthly Dirt interviewed Rosio Reynaga of Pacific Sweeping to find out more from an expert about street sweeping at construction sites.

Monthly Dirt (MD): Is street sweeping only needed during the wet season?

Cannon Pacific: No. Street sweeping is required year-round on all construction sites per the local jurisdiction.

MD: How often should sweeping be performed at a project?

Cannon Pacific: Some sites require daily sweeping while others require less. It depends on the activities occurring and the requirements of the local jurisdictions.

MD: Can all types of sediment and track out be effectively removed from the surface with a sweeper?

Cannon Pacific: Yes. Sand, silt, dirt, rock and fugitive dust can be controlled or removed by efficient street sweeping.

MD: What is the best kind of sweeper for a construction project?

Cannon Pacific: A mechanical broom or regenerative air sweeper is best, depending on the type of material being collected.

MD: What should contractors consider before contacting a sweeper service? Is there anything they should beware of before contracting with a service?

Cannon Pacific: Consider: Licensing, reputation, reliability, age and condition of sweeper and pricing. Also consider availability of back-up equipment and operator experience.

MD: What are the advantages for a contractor in contracting with a professional sweeping service rather than using their own equipment?

Cannon Pacific: A professional sweeping company will have well maintained equipment, back-up equipment, job-specific safety programs and most importantly - EXPERIENCE!

MD: What does it typically cost to hire a professional sweeping service?

Cannon Pacific: Considering the fines for not sweeping, hiring reputable sweeping company is very affordable and will help you gain site compliance. You can expect to pay between \$125.00 - \$200.00 per hour depending on prevailing wage requirements, disposal cost and distance away from disposal site.

MD: How can our readers contact you?

Cannon Pacific: Call us at 1-888-DIRT-ALERT or go to our website at www.cannongpacific.com. We service much of the Southern California area.

Upcoming Training ...

Got SWPPP? Classes coming to Lodi:

- ✓ CPESC Review, Extra Math Review & Exam – December 17-19, 2013
- ✓ QSP/QSD Training, January 14-16, 2014

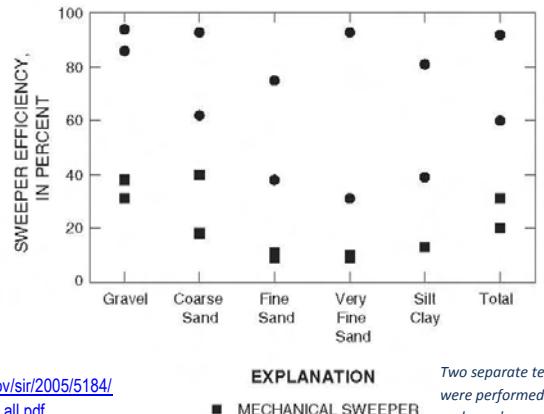
For more information about these classes, go to www.gotswppp.com.

Want storm water training for your crew?

Contact us to set up a training date.

Mechanical versus Vacuum Sweepers

A 2003-2004 study³ performed by the USEPA, Massachusetts Department of Environmental Protection, and the City of New Bedford evaluated removal efficiencies by mechanical and vacuum-type sweepers. The study showed that vacuum sweeper outperformed the mechanical variety. Although vacuum sweepers are more of a capital expense, they do reduce costs by removing more material and requiring less "passes" than a mechanical sweeper would need to do. This means cost savings in labor and fuel, as well as better water quality.



³http://pubs.usgs.gov/sir/2005/5184/pdf/SIR2005_5184_all.pdf

Two separate tests were performed and are shown on the graph.

Please contact us if you have any questions ...

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Newsletter Editor:

John Teravskis, QSD/QSP, CPESC

jteravskis@wgr-sw.com

(209) 334-5363 ext. 110 or (209) 649-0877

Technical Questions about Environmental Compliance?

Call ...

Kevin Harcourt, QSP, CESSWI

kharcourt@wgr-sw.com, (209) 373-8277

Mike Lewis, QSP, CESSWI

mlewis@wgr-sw.com, (209) 334-5363 ext. 116

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

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
- 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.

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

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
- ✓ 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

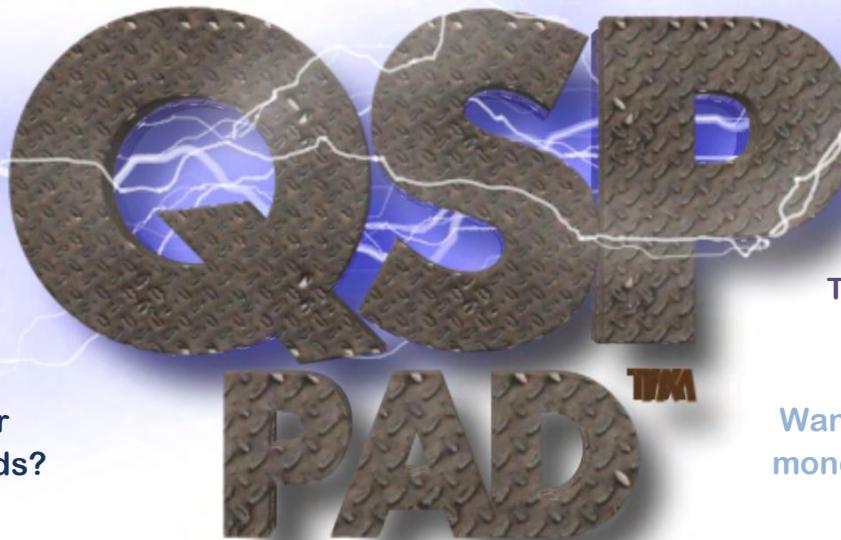
jteravskis@wgr-sw.com

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By WGR Southwest, Inc.

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