

Stormwater Guidance for Contractors—Part 2 of 2

In the last issue of Environmental Connection, the first part of this article discussed the history of the Clean Water Act, legal mechanisms and best practices for compliance. Here, we will cover additional best practices for contractors and construction sites. The article is not meant to be a comprehensive or in-depth examination of the topic.



By David Franklin, CPESC

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Misunderstanding and misapplication is common and reflects poorly on the industry; the resulting pollutant discharges might be greater than having done nothing!



Focus on controlling the river rather than installing slope protection.



Construction site training is vital to ensure a compliant job site.

Operations Yard Best Practices

For contractors, the operations yard and the construction site are the usual areas of concern when it comes to best management practices (BMPs). At the operations yard, the following BMPs typically are employed:

1. **Material Usage:** Keep chemicals, auto fluids, etc., under cover of roof or tarp, and elevated if flowing rainwater may come in contact with them. Keep them contained on the perimeter in case spills occur. Having a spill response plan and materials (absorbents) available and staff trained on using them is another part of the BMP.
2. **Waste Management:** Proper disposal of wastes, using dumpsters with lids that are kept closed is vital. Prevent rain from leaching pollutants from materials stored in truck beds.
3. **Equipment and Vehicle Maintenance:** Work to prevent spills and repair leaking equipment, etc.
4. **Education is a BMP too:** Train your people.

Construction Site Best Practices

On a construction site, crews should be familiar with the SWPPP and the BMPs for that site. The SWPPP is the master plan and is usually composed of a binder and drawings. The binder will include required forms, site information, inspection reports, responsible persons, all the subcontractors on site, the selected BMPs, etc. The drawings will show locations for the BMPs. Here are some typical BMPs found in a SWPPP.

1. **Stockpile Management:** Cover stockpiles and protect from storm flow erosion at the base. This includes keeping materials out of the gutter flow zone.

2. Street Sweeping: Sweep at day's end or more often if needed since sediments can migrate off site via vehicle tires.
3. Material Usage: See operations yard explanation.
4. Erosion Control: The finished landscape is erosion control. If the finished landscape is not done, exposed soil should be stabilized with straw, blankets, plastic sheeting, etc.
5. Wind Erosion Control: Use water or physical cover (blankets) to prevent wind erosion. The local Air Quality Agency and the neighbor with a clean

pool frown on such erosion. Contact the local agency for additional requirements.

6. Sediment Control: Preventing erosion is not always possible on an active site with exposed soil, so sediment control measures are used. Gravel bags, fiber rolls, silt fence, silt traps, sediment ponds, etc. are meant to remove sediment that has mixed with water. A common misconception is that these measures filter out sediment as water passes through. While some amount of

filtering may occur, all good filters clog, so these measures primarily are meant to work by ponding the water. Successful installation means building a water retaining structure. Heavier sediments, such as sand, settle out of the water. The longer water can stand still behind a straw roll, the better the chance that sediments will separate (via the process of settling; see Stoke's Law) from the water with which it became mixed. Results from sediment control are reduced proportionally by the following factors: reduced ponding area, increased storm flow, increase in percentage of fine soil particles. The take home message: do not ask gravel bags at the drain inlet to work. Save the day with redundancy up gradient from inlets. Then the gravel bags have little to do.

7. Non-stormwater: If it doesn't rain and there is a discharge, it is a non-storm discharge. It is very common on construction sites to have significant amounts of runoff leaving new landscapes that are being over-watered by irrigation systems needing adjustment. This runoff can go unnoticed during non-rainy days even though pollutants are picked up en route to the gutter. Over-application of water from a water truck doing dust control can carry muddy water to the drain. The BMP here calls for training and calibration of equipment.

8. Non-structural:
 - a. Scheduling: Avoid working on disturbed soils in the rain if you cannot prevent sediment-laden discharge from leaving the site.
 - b. Protecting Existing Vegetation: Limit the areas to be disturbed and protect the roots of heritage trees. Use fencing (orange) to protect Environmentally Sensitive Areas (ESA).
 - c. Education: Inform your field and office staff concerning stormwater issues. When the person answering your phone knows key words and concepts, your company image grows.

As noted above, BMPs have an inspection, maintenance and repair requirement. This requirement is not managed

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well many times. Inspections may be lacking, removal of sediment buildup or reapplication of additional erosion control may not occur and broken silt fence or flattened gravel bags or fiber rolls may not be repaired or replaced.

Pollution Prevention


Here are some other important guidelines for preventing pollution:

1. Locate and protect discharge points on the property (drain inlets, gutters flowing off site) and keep operations away from them or keep a buffer zone in case spills occur. Do not store soils, materials, etc. in the gutter where flows will carry material away. Avoid sweeping debris into drain inlets.
2. Become knowledgeable in the proper selection and installation of products and materials for erosion and sediment control (ESC). Misunderstanding and misapplication is common and reflects poorly on the industry; the resulting pollutant discharges might be greater than having done nothing!
3. Don't damage the BMPs others have installed. Use them where appropriate. Cement washouts are not a place to throw solid waste, including concrete rubble.
4. Use appropriate irrigation designs to reduce the potential for erosion and pollution runoff.
5. Follow all federal, state and local laws and regulations governing the use, storage, and disposal of chemicals and training of applicators and pest control advisors:
 - a) Follow manufacturers' recommendations and label directions.
 - b) Where practicable, use pesticides only if there is an actual pest control problem (not on a regular preventative schedule). When possible, use less-toxic chemicals that will get the job done with the minimum amounts necessary.
 - c) Never apply chemicals during or immediately before predicted rain or wind events, or anytime when wind exceeds 5 MPH.
 - d) Do not mix or prepare chemicals for application near storm drains.
 - e) Do not apply any chemicals directly to surface waters unless the application is approved and permitted.

Do not spray within 100 feet of open waters.

- f) Apply methods to minimize off-target application (e.g. spray drift), including consideration of alternative application techniques.
- g) Sweep pavement and sidewalks if chemicals are spilled. Do not hose spills down the gutter.
- h) Store all chemicals in closed, labeled containers and keep them off the ground.
- i) Properly dispose of used chemical containers.

The Results

Contractors, as members of the building industry, should have a special connection to water quality. Contractors need to know the law, know how their operations can contribute pollutants, manage their activities and employees and know about, use and protect BMPs. Be proactive, not reactive. Being compliant with the law and making a difference for the environment doesn't always mean spending dollars. Sometimes it's just a matter of having pride in what you do. 



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