

Guidelines on Complying with California Stormwater Regulations for Landscape Contractors

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The History

On June 23, 1969, the Cuyahoga River in Cleveland caught on fire. For over 100 years, this river and others in industrialized areas ignited on occasion. Rivers served as sewer systems for industrial and human waste. Local authorities were generally powerless against the polluters, as there were few legal mechanisms in place. During the 1960s, the ecology movement was growing, images of this flaming river embarrassed the nation, and Randy Newman wrote the song, *Burn on Big River*. Within a few years, the Environmental Protection Agency (EPA) was formed and Congress passed the Clean Water Act.

The Law

The Clean Water Act is a long and complex law that regulates discharges into waters of the U.S. The goal of this legislation was to restore and maintain the chemical, physical, and biological integrity of our nation's waters by prohibiting "the discharge of any pollutant by any person." While this goal is not totally achievable, the concrete result of the law was to require that discharges of pollutants be done under a federal permit administered under the National Pollutant Discharge Elimination System (NPDES).

Initially, the Clean Water Act targeted wastewater discharges that were leaving the pipes of factories and publicly owned treatment works and dumped into waterways. Eventually, stormwater washing off urban areas from municipalities, industrial and commercial facilities, and construction sites was also recognized as a significant source of pollutants. The ongoing discovery of the types and sources of pollution and the prioritizing and implementing of solutions have guided the growth of new regulations meant to improve the quality of the nation's waters.

California Stormwater Regulation and Oversight

Federal law requires that each state identify the beneficial uses of its waters. Beneficial uses can include such things as drinking, tourism, transportation, natural habitat, commercial uses, swimming, and so forth. Most states, including California, are authorized to administer the NPDES program on behalf of the EPA in order to protect the beneficial uses. In California, the authority to regulate stormwater runoff under the NPDES system has been delegated to the State Water Resources Control Board and the nine Regional Water Quality Control Boards.

Each board writes permits in a variety of categories. Different entities "ask permission" to sign on to the permits that apply to their activities and the discharges that result.

Among the different permit categories are the following: (1) permits for heavy industry such as transportation (airports and railroads, for example); permits for cities, counties,

schools, prisons, etc. that have separate storm sewer systems from sanitary sewers (hence the term municipal separate storm sewer systems, or MS4s); and (3) construction sites disturbing over one acre of land. Additionally, individual permits are written for facilities with unique operations; one example would be a power company discharging thermally elevated waters used for cooling.

The law requires that it be the owners who seek coverage under the appropriate permit. The owner is then responsible for workers on the property.

Permits for Municipalities

Permits for municipalities are tailored for that particular urban area while following a standard template meant to insure that all municipal permits address common concerns. For the time being, smaller and more rural municipalities are allowed to operate without gaining permit coverage.

Permits for Construction Sites

Statewide, all construction sites having an acre or more of disturbance are required to gain coverage under one General Construction Permit, which is based on the commonalities that construction projects share. The site conditions and information specific to each project are addressed in a document called a Stormwater Pollution Prevention Plan (SWPPP).

Fines

Significant monetary fines exist for those who do not comply with stormwater rules. Anyone contributing to environmental pollution may end up sharing a part of the fine. Regulators prefer to be “compliance assistants,” but when they respond to a citizen’s complaint of an illegal discharge, their mindset may be instead that “the learning curve is over.” They may decide that fines are necessary “to put an end to this stuff.” Instances of fines have been increasing, as has been the inclusion of lower-tier subcontractors in the citation process.

The Process

Landscape contractors will probably discover that two different permits regulate their activities: a municipal MS4 permit and a construction permit.

MS4 permits require that the municipality monitor commercial operations for activities that may be contributing to pollution, such as restaurants washing greasy mats and allowing the wash water to flow to the storm drain, auto parts stores allowing customers to change their oil in the parking lot so that the rain carries spilled oil to the gutter, and landscape contractors storing broken bags of fertilizer without protective cover, thus allowing the eventual migration of nutrients to the creeks, lakes and ocean.

What does all of this mean for landscape contractors? It means that they must monitor their operations yard, vehicles, and jobsites for ways to eliminate or reduce activities and practices that contribute to pollution.

Landscape contractors who work on projects disturbing one acre or more are required to operate under the State General Construction Permit. Site-specific guidance is contained in the project's SWPPP. The SWPPP is required to be onsite for review and adherence. Information on SWPPPs is outlined below.

While California enforces the federal Clean Water Act, it is free to add regulations that are stricter. Additionally, local ordinances may also exist that are far stricter than federal or state laws. Every landscape contractor should contact the local jurisdictions where they work to find out which local rules may apply. Make sure to check the local municipality's stormwater web page or call the stormwater manager.

The Methods

In addition to identifying the beneficial uses of the state's waters, California maintains a program of identifying which pollutants are impacting the waters and the human activities that contribute those pollutants. The state determines, for example, that agriculture contributes sediment, pesticides, nutrient runoff, etc., that livestock operations contribute bacteria, that transportation departments contribute heavy metals from brake wear and hydrocarbons from oil drips, and so forth.

It's at this point that solutions are developed for preventing pollution releases into our waters. (Think of the farmers during the dust bowl days who learned to plant windrows of trees to prevent erosion from the wind. It's the same idea with stormwater prevention today.)

Public sector interests such as the EPA and private sector interests such as home building associations have developed products and practices to minimize or eliminate pollutant discharges. These are called Best Management Practices, or BMPs.

Best Management Practices (BMPs)

Some examples of product BMPs are silt fence, erosion control blankets, hydroseeding, gravel bags at drain inlets, and storage containers for preventing rain from coming in contact with chemicals. These are sometimes referred to as structural BMPs.

Non-structural BMPs are good habits, practices, or strategies. Some examples are doing routine vehicle maintenance under controlled shop conditions rather than on a construction site, educating employees on stormwater issues upon hire and as jobsite issues arise, scheduling soil disturbing activities for the dry season or between storms, and stabilizing the ground as soon as possible to prevent erosion from rain and wind.

BMPs are also divided into categories of temporary and permanent. An example of a temporary BMP would be the temporary straw applications that are used until permanent sod is installed. An example of a permanent BMP would be a grassy swale that receives stormwater from a new parking lot and commercial building roof before it flows into a creek. As stormwater moves through the swale, some pollutants in the runoff may be trapped in the grass. Additionally, some of this runoff will filter into the soil, thus recharging the groundwater table and protecting the creek from increased levels of

erosive runoff. Temporary and permanent BMPs are increasingly required on new projects.

Generally, regulators do not require that specific BMPs be used, although operators are obligated to select the BMPs that will be most effective for their operations. Selecting BMP solutions can be challenging, as one site may differ greatly from the next.

While regulators emphasize actual results over the use of specific BMPs, through time certain BMPs have gained acceptance in the stormwater industry for delivering results and are now expected to be standard procedure. One example of a BMP that should be standard procedure is not placing a portable toilet on top of a drain inlet; a 50-foot buffer zone should be used in case of leaks or spills during servicing, etc.

To this end, many different agencies and associations across the country have developed manuals of BMPs. Sharing and borrowing generally are common. This has improved industry practices and minimized the need to “re-invent the wheel.”

BMP documents typically include the following:

1. a description
2. typical applications
3. limitations
4. specifications
5. inspection, maintenance, and repair requirements

Landscape-specific BMPs

For landscape contractors, the operations yard and the construction site are the usual areas of concern.

At the operations yard, the following BMPs are typically employed:

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

On a construction site that disturbs one acre or more, landscape crews must 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 info, inspection reports, responsible persons, all the subcontractors on site, the selected BMPs, etc. The drawings will show locations for each BMP.

If the landscape contractor is the prime contractor on the site, her or she should inform the subcontractors and obtain their signatures verifying that they have read and understand the SWPPP. If the landscape contractor is a subcontractor on the site, he or she should be sure to review the SWPPP permit as well as the existing site conditions before commencing work. In summary, landscape contractors are responsible for their operations; they should be proactive and not assume that others are responsible for taking the lead on pollution prevention and permit compliance.

Here are some typical BMPs found in a SWPPP:

1. **Stockpile Management:** Covering stockpiles and protecting from storm flow erosion at the base. This includes keeping materials out of the gutter flow zone.
2. **Street Sweeping:** Sweeping at day's end or more often if needed since sediments can migrate off site via vehicle tires.
3. **Material Usage:** Same as for the operations yard.
4. **Erosion Control:** Quality landscaping is erosion control. If the landscape is not finished, stabilize exposed soil with straw, blankets, plastic sheeting, etc.
5. **Wind Erosion Control:** Use water or physical cover (blankets, etc.) to prevent wind erosion. The local air quality district 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, sediment ponds and so forth are meant to remove sediment that has mixed with water. A common misconception is that these measures filter out sediment as water passes through them. 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 from the water with which they became mixed.
7. **Non-stormwater Discharge:** 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 that also need adjustment. This runoff can go unnoticed during non-rainy days even though pollutants are picked up en route to the gutter.

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.
- 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.

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 off material. Don't use leaf blowers to push debris into drain inlets.
2. Become knowledgeable in the proper selection and installation of products and materials for erosion and sediment control. Misunderstanding and misapplication is incredibly common and reflects poorly on the industry. The resulting pollutant discharges might be worse than having done nothing!
3. Don't damage the BMPs that 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 in the minimum amount necessary.

- c) Never apply chemicals during or immediately before predicted rain or wind events, or anytime when wind exceeds five miles per hour.
- 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 by the state. 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

Landscape contractors, as members of the green industry, should have a special connection to water quality. Contractors should know the law, understand the BMPs and how to apply them, know how their operations can contribute pollutants, and be able to manage their activities and employees. Landscape contractors should be proactive, not reactive. Staying in compliance and making a difference doesn't always mean spending dollars. Sometimes it's just a matter of having pride in what we do.

These guidelines are intended to provide a range of general information about stormwater quality best management practices (BMPs) and related issues faced by landscape contractors on job sites in California. These guidelines do not address site-specific applications or the entire scope of federal, state and local regulations. Landscape contractors must seek advice from a stormwater professional to determine the applicability of the information provided for any general use or site-specific purposes. Users of these guidelines assume all liability directly or indirectly arising from using this information.

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Other Internet Resources

California State Water Resources Control Board: Stormwater Page
<http://www.swrcb.ca.gov/stormwtr/index.html>

California Stormwater Quality Association (CASQA)

<http://www.casqa.org/>

Change In Storm Water Regulations Impact Small Construction Projects: Article

<http://www.lhfconstructlaw.com/CM/WhatsNew/WhatsNew99.asp>

National Pollutant Discharge Elimination System

<http://cfpub.epa.gov/npdes/>

Stormwater Authority - information, news, resources on stormwater

<http://www.stormwaterauthority.org/>

Stormwater Best Management Practice (BMP) Handbooks (from CASQA)

<http://www.cabmphandbooks.com/>

Stormwater Pollution Prevention Plans for Construction Activities

<http://cfpub.epa.gov/npdes/stormwater/swppp.cfm>

Western Chapter International Erosion Control Association

<http://www.wcieca.org/>