



BMP FACT SHEET

REGULATORY CHANGES & IMPLICATIONS 2010

This fact sheet provides a brief overview of some of the more important regulatory changes (*State and Federal*) and the implications to both the Construction and Development industry.

New and Future Requirements: By now, most within the construction and development (*C&D*) industries are familiar with or have some idea of the implications of the U.S. Environmental Protection Agency (*EPA*) new effluent limitations guidelines (“*ELG*” - 2010), the State of California’s new Construction General Permit (“*CGP*” - 2010) and the State of California new standards for qualified practitioners (*QSD / QSP*) authorized to develop and/or implement Storm Water Pollution Prevention Plans (*SWPPP*). Now the simple question is how will these new rules and requirements affect how all of us do business within the field daily. The answer or answers are not as simple and clear as the question; however, our goal is to help provide you with some guidance.

The U.S. Environmental Protection Agency (*EPA*) has finalized (2010) its new effluent limitations guidelines (*ELGs*) for the construction and development (*C&D*) point source category which coincides with other industrial discharges, including manufacturing, agriculture and service industries. The *EPA* is required by the Clean Water Act (*CWA*) to publish an *ELG* program plan every other year, specifically on how the agency plans to develop new effluent guidelines and revise existing ones. *ELGs* are technology-based national regulations that control the discharge of pollutants to surface waters and to publicly owned treatment works. During the past decade the *EPA* has worked on developing *ELGs* for the *C&D* industry and then was sued by the Natural Resources Defense Council and other agencies over its failure to promulgate *ELG* regulations for the *C&D* industry. Long story short, the court found that the *EPA* has a mandatory duty to promulgate effluent guidelines for an industrial category listed in the biennial effluent guidelines plan. The court ordered the *EPA* to publish proposed regulations in the Federal Register by December 1, 2008, and publish final regulations for the *C&D* category by December 1, 2009. As ordered the *EPA* published its final regulations for public comment and now these guidelines are in effect nationally.

How will the US EPA’s new *ELG* affect your development project?

National effluent guideline regulations specify the maximum allowable levels of pollutants (*i.e POCs*) that may be discharged by facilities within an industrial category or subcategory which includes the construction and development industry. Even though the limits are based on the performance of specific technologies, they do not usually require the industry to use these technologies; rather, the **regulations allow the industry to use any effective alternatives to meet the numerical pollutant limits**. Effluent guidelines may also be based on best management practices (*BMPs*).



The rule will be phased in over time and will only take effect once the State agency issues a new Construction General Permit (*i.e.* 2014). When the rule takes effect in California it will establish a set of numeric effluent guideline (ELG) limitations requiring dischargers to provide and maintain effective erosion control measures, sediment control measures and other pollution prevention measures to minimize and control the discharge of pollutants (*i.e.* POCs) in storm water and other wastewater from construction sites. This may not seem much different than existing regulations; however, the rule will significantly affect how storm water issues will be addressed and monitored on larger projects (*i.e.* 20 acres or more, then 10 acres or more).

The rule specifies particular minimum BMPs to meet the numeric driven effluent limitations requiring effective erosion control and pollution prevention. Eventually, within the City of San Luis Obispo projects disturbing ten (10) acres or more will be required to install sediment basin(s) to contain and settle sediment from storm water runoff. The rule will require minimum standards of design for sediment basins; however, alternatives that control sediment discharges in a manner equivalent to sediment basins would be authorized where approved by the permitting authority. In addition, the new rule establishes specific sampling and testing requirements for larger projects as presented herein. **Before you build a sediment pond the new rule does not take effect in California until 2014.**

The New ELG (2010) requires contractors to collect and sample storm water discharges!

These guidelines will eventually (*i.e.* 2014) require contractors and/or developers of projects of a certain size, risk factor and “type” to collect and analyze storm water samples at predetermined discharge locations. The EPA regulation is already effective nationally, and all permits issued by the agency or states must incorporate the final rule requirements over time.

All construction sites must implement specified Best Management Practices (BMPs) for erosion, sediment and pollution control. Eventually, larger sites, ten (10) plus acres will be required to comply with a turbidity limit of 280 NTU (*nephelometric turbidity units*). Once the turbidity limit applies, storm water must be sampled and analyzed.

The good news, if you are planning a project of the size just indicated within the City of San Luis Obispo before 2014 you will not have to comply with the US EPA NTU standards of 280. Why? Simply since the trigger that sets off this new requirement for each state is the issuance of a new Construction General Permit by each state. Fortunately, the State of California reissued its permit just before the US EPA’s new NTU standard was finalized. However, when the State of California reissues its CGP in 2014, then larger projects will have to comply with the new EPA ELGs. **But, the just issued CGP for California (July 1, 2010) has numeric action levels (NALs) and effluent limits for turbidity and pH.** The numeric action level (NAL) for turbidity is 250 NTU, which is less than the EPA ELG of 280 NTU. The action level for pH is a range from 6.5 to 8.5. **These numeric action levels within the**



State of California are expected to apply to more than 90% of construction sites that disturb one or more acres in 2011.

Storm Water Monitoring:

Risk Factor and Type Assessments: Risk factor assessments for general development projects and “type” assessments for Linear Use Projects (*LUPs – overhead and underground utility projects*) will be determined on a project by project basis. Under California’s new CGP construction projects that are designated Risk Level II and III require testing for pH levels, total dissolved solids (TDS) and NALs during rain events of 0.5 inch or more. Although, testing for TDS and conductivity do not indicate the presence of any specific contaminant, monitoring these parameters generally is a good way to determine an increase in the concentration of dissolved (*ionic non-visible*) chemical constituents. If test results indicate a high TDS or conductivity level it is a red flag to investigate potential pollution sources. Chemicals used in landscaping and in materials such as cement can dissolve into storm water runoff and even into underground seeps and springs leading directly into our local waterways. Additionally, acidic or basic pollutants impact the quality of our water by altering the pH. Residual chemicals from cement and gypsum, for example, have a high pH. Monitoring is required because altering the pH alters the types and amounts of chemical constituents in water, thereby, its toxicity. Changes in pH directly impact the ecosystem when they exceed the narrow range (*6.5 to 8.5 pH units*) required by biota to live in the creek waters. Cement or specifically the catalyst agent in cement has the same pH level as liquid draino – 13. California’s new NPDES requirements set the pH range limit of 6.5 to 8.5 pH units. Experts indicate that this limit range is ± 1 standard deviation beyond typical runoff pH from a California highway construction site.

The goal of the State Water Quality Board in implementing increased monitoring and reporting requirements is to evaluate the effectiveness of best management practices (BMPs) on effluent pollution and the impact that construction activities have on receiving waters. Because pollutants from construction sites generally result when building and landscaping materials are exposed to rain, the best preventative action is to cover and contain building materials that can alter the pH as well as increase turbidity in the runoff. It is not always possible, however, to cover and contain chemicals such as pesticides and fertilizers used in building and landscaping. However, the proper handling of residual concrete, left over paints, solvents and cleaners is a significant step towards reducing our impact on the environment.

Sampling Procedures / Processes: Because the detection limit for pH analyses must be 0.2 pH, litmus paper and other colorimetric analyses are not expected to be adequate. A pH meter that meets the detection limit will be required. A turbidity meter that meets the 1-NTU detection limit can be purchased for about \$800. Meters for pH range in cost, starting at about \$25. Meters must be calibrated to a standard in compliance with manufacturer specifications.



The contractor may choose to collect or have someone collect the turbidity samples and transport them to a lab for analysis. Samples will be required at all discharge points and upstream of the site for comparative purposes. For larger projects, there may be several areas where water is leaving the site in gutters, entering storm drains and other concentrated flow conveyances, and traveling through or over perimeter BMPs such as silt fence, gravel bag berms and fiber rolls.

Sampling and testing procedures are highly regulated and require chains of custody paperwork which clearly document the date, time, the exact location of each sample, the sampler's name and title and much more. Samples will have to be taken during rain events and collected in approved containers for analysis. Since, most storm water flow is on the ground extreme care and caution must be taken during sampling. Somehow, the water on the ground has to be collected into a bottle without affecting the conditions of the storm water itself. Scoops can be used to collect water from concentrated flow areas and then transfer the water into the bottles. When using a scoop or transfer device, care should be taken not to touch the collection device to the ground, otherwise sediment from the ground could be disturbed and add to sediment already in the water flow.

It is recommended that samples be collected from depressed areas that allow the sample container to be placed in flow without touching the surfaces. A sample bottle can sometimes be filled directly after removing a drain inlet grate. Samples can be collected directly into bottles if there is adequate flow.

Analyzing in the Field: Analyzing the samples within the field will most likely lead to results that more accurately reflect the true conditions of the site. pH values can change within 15 minutes. Samples can be measured by following meter instructions that will be made part of the Storm Water Pollution Prevention Plan for the project. Generally, a sample is transferred into a smaller cuvette that is placed in the turbidity meter. The button is pushed, then NTU can be read directly from the meter. The pH is measured by placing a probe in the sample, and a button again allows for a direct reading. Remember that if you are going to be taking numerous samples, then carefully wash off all instruments between each sampling procedure to avoid the carry over of any pollutants (*i.e. sediment*) from one sampling location to the next.

Sampling requirements will be project specific and depend upon who has authority and / or an interest in the project. Currently, the City allows trained and qualified individuals to handle the sampling and testing process. For Caltrans projects a Qualified Professional (*i.e. a PE, Geologist, QSD / QSP*) will have to over see the process.



What do you do when your sampling analysis exceeds the 250 NTU?

If the discharge levels exceed allowable NAL's then corrective actions will be required. Corrective actions will be dependent upon individual site conditions and characteristics. Larger projects may require the implementation of an active treatment system. The technology basis for the turbidity limit is active treatment systems, which consists of polymer-assisted clarification followed by filtration. Active treatment systems are typically used in conjunction with other sediment controls to improve pollutant removals, especially of fine-grained and slowly settling or non-settleable particles and turbidity contained in storm water. The EPA has identified several demonstrated technologies capable of achieving significant reductions of these particles. Electro-coagulation, polymer clarification and chitosan-enhanced filtration treatment technologies are demonstrated as being capable of achieving low levels of turbidity in storm water discharges. These active treatment systems add polyacrylamides or chitosan, which is a natural polymer, to the storm water on site. Due to the polymers being the opposite charge of a soil particle, when the polymer mixes with sediment-laden water, the polymer and soil particles attach to one another and form larger particles that should settle out more quickly.

Caution should be taken, however, when using polymers. If the polymers do not attach to the soil particles before leaving the site, they can attach to the gills of fish and cause suffocation.

State of California new standards for qualified practitioners (QSD / QSP): By September 2, 2011 anyone preparing a SWPPP will be required to have past a state exam certifying that they are a Qualified SWPPP Developer. Also, by September 2, 2011 anyone inspecting or supervising the inspection of sites requiring a SWPPP shall have past a state exam certifying that they are a Qualified SWPPP Practitioner. Candidates to take the QSD / QSP exam shall currently be a licensed Certified Professional Erosion Sediment Control, a Certified Professional Storm Water Quality, a Civil Engineer or Registered Geologist/Hydrologist in addition to verifiable years of experience in storm water management related to the construction and development industry.

For additional information concerning the U.S. Environmental Protection Agency (EPA) new effluent limitations guidelines ("ELG" - 2010), the State of California's new Construction General Permit ("CGP" - 2010) and the State of California new standards for qualified practitioners (QSD / QSP) please refer to the websites listed under our "Resource & Links" section.