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**EPA ISSUES FINAL RULE - EFFLUENT GUIDELINES FOR DISCHARGES FROM CONSTRUCTION AND DEVELOPMENT SITES; MONITORING WILL BE REQUIRED STARTING AUGUST 2011; OTHER PROVISIONS PHASE IN; RULE EFFECTIVE 1/23/10**

The U.S. Environmental Protection Agency (EPA) on November 23, 2009 promulgated effluent limitations guidelines (ELGs) and new source performance standards (NSPS) to control the discharge of pollutants from construction sites. This rule requires construction site owners and operators to implement a range of erosion and sediment control measures and pollution prevention practices to control pollutants in discharges from construction sites. In addition, the rule requires certain construction site owners and operators to sample stormwater discharges and comply with a numeric standard for the pollutant turbidity in these discharges starting in August of 2011.

The final rule is intended to work in concert with existing state and local programs, adding a technology-based "floor" that establishes minimum requirements that apply nationally. Once implemented, these new requirements will significantly reduce the amount of sediment and other pollutants discharged from construction sites.

The rule requires all construction site owners and operators to implement a range of erosion and sediment control best management practices (BMPs) to reduce pollutants in stormwater discharges. Permittees are also required to implement a range of pollution prevention measures to control discharges from activities such as dewatering and concrete washout. *The rule contains stringent requirements for soil stabilization as well.*

EPA is phasing in the numeric limitation over four years to allow permitting authorities adequate time to develop monitoring requirements and to allow the regulated community time to prepare for compliance with the numeric limitation. Construction sites that disturb 20 or more acres at one time will be required to conduct monitoring of discharges and comply with the numeric limitation beginning 18 months after the effective date of the final rule. Beginning four years after the effective date of the final rule, the monitoring requirements and numeric limitation will apply to all sites that disturb 10 or more acres at one time.

This regulation is projected to reduce the amount of sediment discharged from construction sites by about 4 billion pounds each year, at an annual cost of about \$953 million, once fully implemented. It is expected that the cost of the rule will be \$204 million by 2012. The benefits from reducing discharges of sediment and turbidity include improved water clarity, protection of drinking water supplies, improvements in aquatic environments, and lessen the need for dredging of navigational channels and reservoirs.

The EPA Construction General Permit (CGP), which is set to expire on June 30, 2011, will be updated to include the new requirements when reissued. States which issue their own construction general permits, must incorporate new requirements into any new general permits issued after the effective date of the regulation, which is 60 days after publication in the Federal Register. The requirements also apply to individual permits issued by states or EPA. Therefore, the implementation date of the new requirements will vary depending on when states reissue their permits and whether projects are covered by individual or general permits.

EPA is promulgating a series of non-numeric effluent limitations, as well as a numeric effluent limitation for the pollutant turbidity. All construction sites will be required to meet the series of

non-numeric effluent limitations.

Construction sites that disturb 10 or more acres of land at one time will be required to monitor discharges from the site and comply with the numeric effluent limitation. EPA is phasing in the numeric effluent limitation over four years to allow permitting authorities adequate time to develop monitoring requirements and to allow the regulated community time to prepare for compliance with the numeric effluent limitation.

Construction sites that disturb 20 or more acres at one time will be required to conduct monitoring of discharges from the site and comply with the numeric effluent limitation beginning 18 months after the effective date of the final rule.

Construction sites that disturb 10 or more acres at one time will be required to conduct monitoring of discharges from the site and comply with the numeric effluent limitation beginning four years after the effective date of the final rule.

The total pollutant reductions, once fully implemented, will be approximately 4 billion pounds per year.

The effluent limitations will, for many sites, require an additional layer of management practices and/or treatment above what most state and local programs are currently requiring. Permitting authorities are required to incorporate these turbidity limitations into their permits and permittees are required to implement control measures to meet a numeric turbidity limitation in discharges of stormwater from their C&D sites. EPA is not dictating that specific technologies be used to meet the numeric limitation, but is specifying the maximum daily turbidity level that can be present in discharges from C&D sites.

EPA received comments encouraging the Agency to include controls in the final rule on stormwater discharges that occur after construction activity has ceased or what they call "post-construction" stormwater discharges. These discharges are outside the scope of the final rule; however the Agency understands that there is a need to address discharges from newly developed and redeveloped sites, such as commercial buildings, roads, or parking lots, in order to protect the water quality of our nation's waters. As the urban, suburban and exurban human environment expands, there is an increase in impervious landcover and stormwater discharges. This increase in impervious landcover on developed property reduces or eliminates the natural infiltration of precipitation. The resulting stormwater flows across roads, rooftops and other impervious surfaces, picking up pollutants that are then discharged to our nation's waters. In addition, the increased volume of stormwater discharges results in the scouring of rivers and streams; degrading the physical integrity of aquatic habitats, stream function and overall water quality. In July 2006, EPA commissioned the National Research Council (NRC) to review the Agency's program for controlling stormwater discharges under the CWA and recommend steps the Agency should take to make the stormwater program more effective in protecting water quality. The NRC Report *Urban Stormwater Management in the United States* (DCN 42101) states that stormwater discharges from the built environment remain one of the greatest challenges of modern water pollution controls, "as this source of contamination is a principal contributor to water quality impairment of waterbodies nationwide." The NRC report found that the current regulatory approach by EPA under the CWA is not adequately controlling all sources of stormwater discharges that are contributing to waterbody impairment. NRC recommended that EPA address stormwater discharges from impervious landcover and promote practices that harvest, infiltrate and evapotranspire stormwater to prevent it from being discharged, which is critical to reducing the pollutant loading to our nation's waters.

EPA has committed to and begun a rulemaking addressing stormwater discharges from newly developed and redeveloped sites under CWA section 402(p). EPA has published a draft Information Collection Request, 74 FR 56191 (October 30, 2009) for public comment that will seek information and data to support the rulemaking, and plans to complete this rule in the fall of

2012.

EPA believes that stormwater discharges from C&D sites in their entirety are "industrial waste," a nonconventional pollutant under the CWA, thus EPA is not obligated to single out specific constituents or parameters in the discharge. EPA is also statutorily obligated to promulgate a best available demonstrated control technology (BADT) for NSPS for *all* pollutants from new sources, even if the only pollutants from C&D sites were conventional pollutants.

Discharges associated with construction activity are also expected to contain varying concentrations of metals and toxic organic compounds, some of which may be contributed by equipment used onsite for grading and other construction activities, as well as various construction materials used on-site (such as asphalt sealants, copper flashing, roofing materials, adhesives, and concrete admixtures). Metals are also naturally present in soils and, by removing vegetative cover and increasing erosion and sediment loss, there will likely be an increase in the amount of metals discharged from the C&D site. Metals can also be present as a contaminant from previous activity on the site (such as may occur in redevelopment of industrial areas) or as a contaminant or additive in fertilizers and other soil amendments. Fuels and lubricants are maintained onsite to refuel and maintain vehicles and equipment used during construction activities. These products, should they come in contact with stormwater and other site discharges, could contribute toxic organic pollutants. Pathogenic pollutants can be present in stormwater that comes into contact with sanitary wastes where portable sanitation facilities are poorly located or maintained. Also, trash and other municipal solid waste can be carried away by stormwater.

Nutrients can be present in construction site discharges, either as naturally-occurring components of the soil or due to previous activities on the site, such as enrichment due to agricultural activities. In addition, activities during construction activity, such as hydroseeding, can increase nutrients levels in the soil.

The non-numeric effluent limitations contained in the final rule are as follows:

**a. Erosion and Sediment Controls**

Permittees are required to design, install and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. At a minimum, such controls must be designed, installed and maintained to:

- i. Control stormwater volume and velocity within the site to minimize soil erosion;
- ii. Control stormwater discharges, including both peak flowrates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and streambank erosion;
- iii. Minimize the amount of soil exposed during construction activity;
- iv. Minimize the disturbance of steep slopes;
- v. Minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site;
- vi. Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration, unless infeasible; and
- vii. Minimize soil compaction and, unless infeasible, preserve topsoil.

**b. Soil Stabilization Requirements**

Permittees are required to, at a minimum, initiate soil stabilization measures immediately whenever any clearing, grading, excavating or other earth disturbing

activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days. Stabilization must be completed within a period of time determined by the permitting authority. In arid, semiarid, and drought-stricken areas where initiating vegetative stabilization measures immediately is infeasible, vegetative stabilization measures must be initiated as soon as practicable.

#### c. Dewatering Requirements

Permittees are required to minimize the discharge of pollutants from dewatering trenches and excavations. Discharges are prohibited unless managed by appropriate controls.

#### d. Pollution Prevention Measures

Permittees are required to design, install, implement, and maintain effective pollution prevention measures to minimize the discharge of pollutants. At a minimum, such measures must be designed, installed, implemented and maintained to:

- i. Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;
- ii. Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials present on the site to precipitation and to stormwater; and
- iii. Minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures.

#### e. Prohibited Discharges

The following discharges from C&D sites are prohibited:

- i. Wastewater from washout of concrete, unless managed by an appropriate control;
- ii. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
- iii. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; and
- iv. Soaps or solvents used in vehicle and equipment washing.

#### f. Surface Outlets

When discharging from basins and impoundments, permittees are required to utilize outlet structures that withdraw water from the surface, unless infeasible.

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### Changes to the Non-Numeric Effluent Limitations since EPA's Earlier Rulemaking Proposal

EPA made a number of changes to the non-numeric effluent limitations for the final rule. EPA does not view these changes as making the final rule requirements less stringent than those contained in the proposal, but rather views these changes as necessary adjustments that make the requirements applicable to all types of construction activities. EPA has determined that many of the requirements, as proposed, could not be implemented on every construction site due to technical reasons. In general, some requirements were eliminated, while others were revised to include "unless infeasible" language, recognizing that not every site will be able to implement every one of the proposed requirements. Also, the requirements were re-arranged to separate erosion and sediment control requirements from soil stabilization and pollution

prevention requirements. However, EPA believes that most practices can be implemented on most sites, and where a practice is feasible and necessary for effective control of pollutant discharges from stormwater runoff, this rule requires that it be implemented. The changes made, by section of the proposed rule text, along with the rationale for the changes are as follows:

**§ 450.21(a):** The definition of when erosion controls are considered effective has been deleted since effectiveness varies based on site-specific parameters. In addition, the proposed language was limiting in that there may be other objective measures of effectiveness that were not described by EPA. The requirement to stabilize exposed soils has been incorporated into a "Soil Stabilization" section in the final rule at § 450.21(b).

**§ 450.21(a)(4):** The requirement to minimize the amount of soil exposed at any one time has been removed as the soil stabilization language at § 450.21(b) requires immediate stabilization.

**§ 450.21(a)(5):** The requirement to preserve natural vegetation was removed as there are cases where preserving the natural vegetation may not be compatible with the ultimate land use. The requirement to preserve topsoil was changed to include "unless infeasible," recognizing that it may not always be feasible to preserve topsoil depending on the ultimate land use.

**§ 450.21(a)(6):** The language regarding minimizing soil compaction was simplified and now includes "unless infeasible," and the requirements for deep ripping and decompaction and incorporation of organic matter to restore infiltrative capacity were deleted because the use of these techniques is dependent upon the ultimate land use.

**§ 450.21(a)(7):** The requirement for providing and maintaining natural buffers around surface waters was combined with the requirement to direct discharges to vegetated areas found in § 450.21(b)(9) and now includes "unless infeasible."

**§ 450.21(a)(8):** The requirement to minimize the construction of stream crossings was deleted as the construction of stream crossings on a particular project is determined by consideration of a number of factors, and simply minimizing the number based on erosion and sediment control considerations may conflict with other considerations. EPA has determined that this requirement is best left to the discretion of the permitting authority.

**§ 450.21(a)(9):** The requirement to sequence/phase construction activities was deleted. EPA believes that permittees should consider sequencing or phasing for projects, particularly for larger or longer-duration projects. Phasing construction so that less than 10 acres of land are disturbed at any one time is one way for owners or operators of construction sites to comply with the rule without having to sample discharges and meet the numeric limitation in Option 4. EPA believes that this is appropriate because of the environmental benefits of such sequencing. However, EPA has determined that this is a site-specific consideration best addressed by the permitting authority.

**§ 450.21(a)(11):** The requirement to implement erosion controls on slopes was deleted as the soil stabilization requirements encompasses all types of stabilization, not just on slopes.

**§ 450.21(a)(12):** The requirement to establish temporary or permanent vegetation to stabilize exposed soils was deleted as vegetative controls may not always be the most appropriate stabilization measures. The selection of appropriate stabilization techniques is best left to the discretion of the permitting authority.

**§ 450.21(a)(13):** The requirement to divert stormwater that runs onto the site away from disturbed areas of the site was deleted as this may not always be feasible, or, in certain instances, may increase off-site erosion.

**§ 450.21(b):** The sediment control requirements were combined with the erosion control requirements into a new section titled "Erosion and Sediment Controls" at § 450.21(a) in the final rule regulatory text. The requirement to install sediment controls prior to commencement of construction and to maintain during all phases of construction activity was deleted as the timing of implementation of controls is site-specific. Maintenance of controls is inherent in permits and it is not necessary to include this requirement in the national rule.

**§ 450.21(b)(1):** The requirement to establish and maintain perimeter controls was deleted, as the need for perimeter controls is dictated by site topography. The requirement to discharge stormwater from perimeter controls through vegetated buffers and functioning stream buffers was deleted. This

requirement now applies to all discharges, unless infeasible, as described at § 450.21(a)(6).

§ 450.21(b)(2): The requirement to control discharges from silt fences using a vegetated buffer or filter strip was deleted as this may not always be feasible, depending on the site location or climate.

§ 450.21(b)(3): The requirement to minimize slope length and to install linear sediment controls and slope breaks on erodible slopes was deleted as the need for these controls is dictated by site-specific considerations and is best left to the discretion of the permitting authority.

§ 450.21(b)(4): The requirements to establish construction entrances and exits and to utilize wheel wash stations were deleted as it may not always be feasible to utilize wheel wash stations (for example, in remote areas). The need for construction entrances and exits are dependent on site configuration.

§ 450.21(b)(5): The requirement to remove sediment from paved surfaces daily and the prohibition on washing sediment and other pollutants into storm drains were deleted. The need for these requirements depend on site configuration (i.e., if storm drains discharge to a sediment control or discharge off-site).

§ 450.21(b)(6): The requirement to implement controls to minimize the introduction of sediment and other pollutants to storm drain inlets was deleted (for the same reason as § 450.21(b)(5) above).

§ 450.21(b)(7): The language regarding dewatering was changed to be specific to dewatering trenches and excavations. This language is now found at § 450.21(c).

§ 450.21(b)(8): All language regarding sediment basins was deleted (see Section VII.A).

§ 450.21(b)(9): The requirement to direct discharges from sediment controls to seep berms and level spreaders and to utilize spray or drip irrigation systems was changed. This requirement now applies to all discharges, but is more general in that it does not specify techniques, but rather requires all discharges to be directed to vegetated areas, unless infeasible (now found at § 450.21(a)(6)). This provides more flexibility for permittees to select appropriate techniques.

§ 450.21(c): The language describing examples of effective pollution prevention measures was deleted and instead the new requirement at § 450.21(d) is to "design, install, implement and maintain effective pollution prevention measures" as this language is not limiting to those measures described in the proposal. In addition, pollution prevention requirements in the final rule are presented separately from a series of "prohibited discharges". At proposal, these two concepts were presented together.

§ 450.21(c)(1): Discharges of construction waste, trash and sanitary wastes are not prohibited in the final rule, but rather the requirement is to minimize the exposure of a variety of materials to precipitation and stormwater (now found at § 450.21(d)(2)). EPA has determined that a requirement to minimize exposure to precipitation and stormwater, rather than a strict prohibition on the discharge of these materials, is a more appropriate requirement as it may not always be feasible to prevent these materials from being discharged from the site.

§ 450.21(c)(2): Concrete washout is now addressed separately at § 450.21(d)(1), and discharges are allowed if managed by appropriate controls. The concrete washout provision is not a prohibition, as are discharges from other sources, because there are technologies available to treat concrete washout. Therefore, discharges of wastewaters from concrete washout are allowed if managed by appropriate controls. Wastewater from washout of form release oils and curing compounds have been added to the list of prohibited discharges at § 450.21(d)(2).

§ 450.21(c)(4): The requirement was changed to clarify that the prohibition is on the discharge of soaps and solvents.

§ 450.21(c)(5): The requirement was changed so as not to prohibit the discharge of wash waters but rather to control discharges from equipment and vehicle washing and wheel wash, recognizing that wash waters can be managed using appropriate controls.

§ 450.21(c)(6): "Building products" were added to the list of materials, and spills and leaks are addressed in a separate requirement (§ 450.21(d)(3)).

§ 450.21(c)(7): The requirement to prevent runoff from contacting areas with uncured concrete was deleted, as this may not be feasible on some sites (such as bridges, roads, etc.).

**§ 450.21 Effluent limitations reflecting the best practicable technology currently available (BPT).**

Except as provided in 40 CFR 125.30 through 125.32, any point source subject to this subpart must achieve, at a minimum, the following effluent limitations representing the degree of effluent reduction attainable by application of the best practicable control technology currently available (BPT).

**(a) Erosion and Sediment Controls.** Design, install and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. At a minimum, such controls must be designed, installed and maintained to:

- (1) Control stormwater volume and velocity within the site to minimize soil erosion;
- (2) Control stormwater discharges, including both peak flowrates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and streambank erosion;
- (3) Minimize the amount of soil exposed during construction activity;
- (4) Minimize the disturbance of steep slopes;
- (5) Minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site;
- (6) Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration, unless infeasible; and
- (7) Minimize soil compaction and, unless infeasible, preserve topsoil.

**(b) Soil Stabilization.** Stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating or other earth disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days. Stabilization must be completed within a period of time determined by the permitting authority. In arid, semiarid, and drought-stricken areas where initiating vegetative stabilization measures immediately is infeasible, alternative stabilization measures must be employed as specified by the permitting authority.

**(c) Dewatering.** Discharges from dewatering activities, including discharges from dewatering of trenches and excavations are prohibited unless managed by appropriate controls.

**(d) Pollution Prevention Measures.** Design, install, implement, and maintain effective pollution prevention measures to minimize the discharge of pollutants. At a minimum, such measures must be designed, installed, implemented and maintained to:

- (1) Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;
- (2) Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials present on the site to precipitation and to stormwater; and

(3) Minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures.

(e) **Prohibited Discharges.** The following discharges are prohibited:

- (1) Wastewater from washout of concrete, unless managed by an appropriate control;
- (2) Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
- (3) Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; and
- (4) Soaps or solvents used in vehicle and equipment washing.

(f) **Surface Outlets.** When discharging from basins and impoundments, utilize outlet structures that withdraw water from the surface, unless infeasible.

**§ 450.22 Effluent limitations reflecting the best available technology economically achievable (BAT).**

Except as provided in 40 CFR 125.30 through 125.32, any point source subject to this subpart must achieve, at a minimum, the following effluent limitations representing the degree of effluent reduction attainable by application of the best available technology economically achievable (BAT).

(a) Beginning no later than August 2, 2011 during construction activity that disturbs 20 or more acres of land at one time, including non-contiguous land disturbances that take place at the same time and are part of a larger common plan of development or sale; and no later than February 2, 2014 during construction activity that disturbs ten or more acres of land area at one time, including non-contiguous land disturbances that take place at the same time and are part of a larger common plan of development or sale, the following requirements apply:

(1) Except as provided by paragraph (b) of this section, the average turbidity of any discharge for any day must not exceed the value listed in the following table:

<b>Pollutant</b>	<b>Daily Maximum Value (NTU)<sup>1</sup></b>
<b>Turbidity</b>	<b>280</b>

<sup>1</sup>Nephelometric turbidity units.

(2) Conduct monitoring consistent with requirements established by the permitting authority. Each sample must be analyzed for turbidity in accordance with methods specified by the permitting authority.

(b) If stormwater discharges in any day occur as a result of a storm event in that same day that is larger than the local 2-year, 24-hour storm, the effluent limitation in paragraph (a)(1) of this section does not apply for that day.

(c) **Erosion and Sediment Controls.** The limitations are described at § 450.21(a).

(d) **Soil Stabilization.** The limitations are described at § 450.21(b).

(e) **Dewatering.** The limitations are described at § 450.21(c).

(f) **Pollution Prevention Measures.** The limitations are described at § 450.21(d).

(g) **Prohibited Discharges.** The limitations are described at § 450.21(e).



(h) *Surface Outlets*. The limitations are described at § 450.21(f).

The **December 1, Federal Register notice** for the final rule contains incorrect compliance dates for the turbidity limitation for sites disturbing 20 or more acres at one time. This error appears on page 63050 of the preamble to the final rule as well as in the rule text at 450.22(a) on page 63058. Both the preamble and the rule incorrectly state this date as August 2, 2010. The correct date is August 1, 2011. EPA will be issuing a correction notice to address this error.

**County and state officials are concerned about this final federal rule. Brownfields site redevelopment could become more difficult because certain exceptions that states grant to Brownfields sites appear to be lacking. There also appears to be no "grandfather" clause for developments stalled due to current economic conditions, with rework of site plans potentially needed. State officials are waiting for more information on their responsibilities under this rule. All parties involved in development and redevelopment should watch how this rule will be implemented very carefully because construction costs could significantly increase at some sites, and certain projects could become impractical.**

**For more information, call Gary R. Brown, P.E. at 610-265-1510 Ext. 234.**

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