



# The Stormwater Quarterly

National Stormwater Center

Our 13th year

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## EFFECTIVE PERMITS WITH ENFORCEMENT = CLEAN WATER

### *Stormwater News*

**American cities need \$400 billion for water and sewer improvements.** The Water Quality Financing Act of 2007 (H.R. 720), approved by the House, will provide \$14 billion over a five year period for federal loan guarantees to municipalities. A companion bill passed by the House (H.R. 569) provides \$1.5 billion over five years for EPA sewer overflow control grants.

A day earlier, the Senate Environment and Public Works Committee scolded the EPA Administrator, Stephen Johnson, for the \$550 million cut in EPA'S budget. Senator Barbara Boxer called the budget proposal "shocking," highlighting a \$400 million cut to wastewater treatment projects

**President Bush has issued an executive order limiting EPA use of "guidance" documents.** The order is intended to prevent EPA (and other regulatory agencies) from using guidance documents as regulations, thereby imposing legal obligations. Any guidance issued must identify a "specific market failure" that justifies government intervention.

Executive Order No. 12,866 can be read in its entirety by [clicking here](#).

**EPA guidance on evaluation of municipal stormwater permits is available.** Download at [MS4 Evaluation Guidance](#). It can be used for full program evaluations or components. The Guide is for NPDES authorities to evaluate Phase I and Phase II MS4 programs for compliance and the need for assistance.

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### **EPA's Stormwater Program at Risk of Failure - Can it be Fixed ?**

It looks like the 1991 EPA mandated Stormwater Program is failing to accomplish the Clean Water Act goal to improve the quality of the Nation's Waters.

Congress, in 1987, viewed state water quality reports and decided that contaminated stormwater runoff must be controlled. EPA responded with a permit program without measurable performance standards and one that depends on polluters to select their own pollution controls. That clearly has not worked very well.

California has taken the position that EPA's model construction permit is "inadequate" and published a draft construction permit with enforceable conditions.

This *Quarterly* has examples of permits where government directs specific conditions, not generalities. Included are examples of enforcement actions that are not adequate to deter polluters.

A guest editorial by Fred Heitman implores governmental authorities to enforce stormwater permits. They can make a difference in cleaning up the Nation's waters.

It may be several years until stormwater permits are issued nation-wide with conditions and limitations that will achieve the intent of the Clean Water Act. Before that happens, let's give enforcement a chance. \*

## Are SEPs For Real or Just Gimmicks

# Industry Fines Reduced With Environmental Projects

The relationship between permit violations and the amount of the penalty is difficult to determine. One reason is that many violators choose to perform a “Supplemental Environmental Project” (SEP) rather than pay a larger fine to the government. SEPs allow permit violators to look “green” by performing a community service. But too often the community service is in reality a self-service.

### **Coal Pile Runoff**

The Alabama Port Authority is subject to a \$30,000 fine for 39 separate permit violations from coal pile runoff. The coal was placed on open-sided docks not designed to contain loose elements, allowing coal sediments to enter the water.

Water trucks are now used to dampen the roads, and trees and shrubs have been planted to intercept the coal dust. A provision in the consent order allows the Alabama Port Authority to offset a portion of the fine by a SEP. Under the consent order, the Authority could reduce the fine by 1/3 by improving environmental conditions at their operation, not in the community.

### **Failure to Inspect**

Five bus companies, owned and operated by Peter Pan Bus Lines, have agreed to pay \$237,179 in stormwater permit penalties. Three bus maintenance garages in New England had stormwater permits, but each garage failed to conduct monthly inspections and site evaluations. Two other companies failed to obtain a stormwater discharge permit or prepare an oil-spill prevention plan.

As a SEP, the company agreed to equip 268 passenger buses – nearly all its New England fleet – with new crankcase filters by the end of December, and to provide documentation

confirming that the work has been performed. The new filters will reduce oil leakage from each bus by one to six gallons of oil per year, substantially reducing a significant source of stormwater contamination from the bus parking lots.

### **Discharging without a permit**

A \$1 million fine was paid by an egg processing facility near Wakefield, Nebraska. The M.G. Waldbaum Company discharged stormwater runoff from poultry waste without an NPDES permit at one of the seven poultry farms they operate. To make things worse, the company dumped process sludge rather than spreading it on the ground.

Waldbaum agreed to build a wastewater treatment plant at a cost of \$416 million. How many years did Waldbaum avoid treatment cost while causing environment damage. Was the \$1 million fine adequate? Was the \$416 million treatment plant just a SEP?

The city was fined \$20,000 for allowing the Waldbaum Company to overload the city’s treatment lagoons.

### **Illicit Discharge**

A Dearborn, Michigan waste treatment facility and three of its former executives have been criminally charged for regularly discharging untreated wastewater into the city sanitary sewer system and making false statements to cover up what they were doing.

The company treats industrial waste and was allowed to discharge specific amounts under a pretreatment permit. However, the offenses involved millions of gallons of untreated waste. Don’t expect these corporate executives to be offered a SEP, maybe probation instead of jail. \*

# Illicit Discharger Pays \$412 M to Avoid Jail

Hamilton Sundstrand Corporation of Windsor Locks, Connecticut, pleaded guilty of violating the Clean Water Act by discharging hexavalent chromium and copper to the Farmington River. The company agreed to five years probation and a fine of \$1 million, plus contributions and facility upgrades of \$11 million.

The NPDES permit has numerical limits for discharges of hexavalent chromium and copper to the river. When grab samples revealed hexavalent chromium levels above permit limits, employees either altered or omitted the data on monthly DMRs.

Hamilton Sundstrand also admitted that its employees transferred the contents of a tank containing chelated copper to the wastewater treatment system. To prevent overloading the treatment system, employees discharged tens of thousands of gallons of contaminated wastewater to the Farmington River.

In addition to the \$1 million fine, Hamilton Sundstrand has also agreed to make a contribution in the amount of \$5.4 Million to the Supplemental Environment Programs (SEP) Account, and to eliminate all process wastewater discharges to the Farmington River at a cost of \$5,600,000.

The president of Hamilton Sundstrand will make regular certifications that the company is in compliance with the requirements of the Clean Water Act.

ED: What should stockholders do? Instead of sharing profits with owners of the company, the company executives used profits to avoid jail time for their criminal behavior. The purpose of the NPDES certification is to hold management accountable for the discharges from their operations. \*

## Stormwater News

(Continued From Page 1)

**The Supreme Court will soon decide if Arizona can administer the NPDES Permit Program.** The 9th Circuit U.S. Court of Appeals vacated EPA's approval of Arizona's authorization because EPA did not consider the impact on endangered and threatened species. A Supreme Court ruling upholding that decision would put into question the delegation of all state NPDES programs, because EPA has not considered Endangered Species Act issues in granting authority for any state NPDES program and claims that it does not have the authority to do so.

**A federal judge ruled that the Corps of Engineers violated the law by issuing mountaintop removal mining permits that allowed headwater streams to be permanently buried.** The March ruling will affect dozens of pending mining permits in West Virginia, Kentucky, southern Virginia, and eastern Tennessee.

The U.S. District Court for the Southern District of West Virginia determined that stream destruction caused by mountaintop removal coal mining cannot be fixed through mitigation. Mountaintop removal mining uses explosives to blast mountain tops to access seams of coal. As a result, waste rock and debris are dumped into streams.

**The primary SIC is no longer the sole basis for a stormwater permit in New York.** The new Multi-Sector General Permit, effective March 28, states that if more than one industrial activity occurs at a facility, those industrial activities are considered to be co-located and the facility must comply with all of the applicable industrial requirements for those activities, regardless of the primary SIC code. This is the only MSGP in the Nation like this.

**The State of Washington will continue issuing permits to control the use of aquatic pesticides in and around water.** This is in spite of EPA's ruling that a pesticide applied according to the federal label is not a pollutant under the federal Clean Water Act and is not subject to NPDES permitting. The EPA ruling has caused legal ambiguity and is being appealed in 11 circuit courts throughout the Nation. Washington will wait for court decisions before changing its practice of controlling aquatic pesticide use with permits. \*

## Enforcement by the Numbers

# Turbidity Sampling in Construction Permits

Georgia, Washington, and Oregon require many construction permittees to sample for turbidity. California's draft construction permit would require permittees to measure turbidity, pH and total petroleum hydrocarbons (TPH).

*Turbidity* measures the cloudiness of water. A collaborated turbidity meter measures light traveling through a water column. The light is scattered by the suspended organic and inorganic particles in the water.

The meter, called a nephelometer, uses a detector that is setup beside the light beam. Light reaching the detector is from small particles scattering the source beam. Turbidity is recorded in Nephelometric Turbidity Units (NTU).

### **Georgia**

State law in Georgia restricts construction projects from a discharge resulting in the turbidity of receiving waters being increased by more than ten NTUs for waters classified as trout streams or more than twenty-five NTUs for waters supporting warm water fisheries.

The stormwater construction general permit includes the limitations and has a variable sampling schedule. The first rainfall event greater than or equal to 0.5 inches in 24 hours after the first implementation of BMPs; followed by sampling any rainfall event greater than or equal to 1.0 inches in 24 hours but no more than one event per calendar month.

Compliance sampling is conducted in receiving waters and not at the end-of-pipe. Also, it does not appear to apply to discharges to municipal drainage systems. A recent settlement with a contractor failing to obtain a permit and failure to install BMPs resulted in a fine of \$7,500.

### **Washington**

Construction sites disturbing more than 5 acres must sample their discharge weekly using a turbidity meter. But, sites which disturb 1 to 5 acres may sample weekly using a transparency tube or turbidity meter. These are end-of-pipe measurements.

Sampling is required at all discharge points where stormwater (or authorized non-stormwater) is discharged off-site. The benchmark value for turbidity is 25 NTU and the benchmark value for transparency is 31 cm.

Construction projects must report, within 24 hours, high stormwater turbidity results greater than or equal to 250 NTUs.

### **Oregon**

Permittees discharging into impaired water bodies listed for turbidity or sedimentation must sample each discharge point weekly using a field turbidity meter occurring during regular working hours at the construction site. The benchmark value is 160 NTUs.

### **California**

The draft construction permit published by the California Water Resources Control Board in March has several major changes. One is to use numeric end-of pipe action levels (AL) and numeric effluent limitations (NEL).

The AL for turbidity is 500 NTU. The NEL for turbidity is 10 NTU where advanced treatment is required. Advanced treatment is required if the soils contain more than 10% (by weight) particle sizes smaller than 0.02 mm.

Exceeding action levels and effluent limitations requires immediate corrective actions, and exceeding the NEL is a permit violation.

*(Turbidity Sampling Continued on Page 6)*

## Emphasis on Water Quality Impacts and Measuring Results

# Green Development - Major Requirement of San Diego County Municipal Permit

The municipal stormwater permit issued to San Diego County looks like a water quality permit rather than a point source permit issued under Section 402 of the Federal Clean Water Act. The permit imposes controls and measures that will show results in the waterways and beaches.

The permit requires on-site retention and ambient stream sampling. The MS4 permit is designed to measure reductions of stormwater pollution and apply pressure on developers to control pollution through green design.

The 119-page permit, was issued January 24 to San Diego County, the Port District, and the Airport Authority.

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[http://www.swrcb.ca.gov/rwqcb9/programs/sd\\_stormwater.html](http://www.swrcb.ca.gov/rwqcb9/programs/sd_stormwater.html)

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The permit advances the use of “low impact development” (LED) by developers. Typical LED methods include the infiltration of water from roof and street gutters where polluted water can percolate and filter into the earth rather than into storm drains.

Hydromodification will be a permit restriction for future priority projects. These projects can expect limitations on increases of runoff discharge rates and durations to prevent erosion, sediment generation, and habitat impacts.

Recently, the Building Industry Association of San Diego County said that complying with the regulations would cost taxpayers \$250 million over five years and tack \$20,000 or more onto the cost of a new home.

However, Water Control Board members have said those figures were inflated but they do acknowledge the permit's requirements would cost additional money.

## **Prohibited Activities**

There are 18 prohibited discharges. Number fourteen prohibits the discharge of sediment, turbidity or discoloration in waters of the state.

*The discharge of sand, silt, clay, or other earthen materials from any activity, including land grading and construction, in quantities which cause deleterious bottom deposits, turbidity or discoloration in waters of the state or which unreasonably affect, or threaten to affect, beneficial uses of such waters is prohibited.*

It's unclear if the prohibition applies to sediment discharges into municipal storm sewers.

## **Low Impact Design (LID) for Priority Development**

Municipalities must conduct a preconstruction review of construction projects. This is to require LID to maximize infiltration, provide retention, slow runoff, minimize impervious footprint, direct runoff from impervious areas into landscaping, and construct impervious surfaces to minimum widths necessary.

Priority development projects will be required to control the rate of runoff. Construction activity must not generate silt pollution or cause erosion of stream beds and banks.

Projects with low traffic areas and appropriate or amendable soil conditions should install infiltration devices. These may include the construction of a portion of walkways, trails, overflow parking lots, alleys, or other low-traffic areas with permeable surfaces, such as pervious concrete, porous asphalt, unit pavers, and granular materials.

## Post Construction Maintenance

Developers must submit proof of a mechanism under which ongoing long-term maintenance of all structural post-construction BMPs will be conducted.

## Sampling

Permittees are required to conduct analytical and biological stream monitoring at specified locations. Samples must be taken twice during wet weather events and twice during dry weather flow events.

Sampling parameters include conventional pollutants, nutrients, hydrocarbons, pesticides, and metals. Also, acute and chronic toxicity must be determined.

## End-of-Pipe Sampling

Flowing coastal storm drains will be sampled monthly for total coliform, fecal coliform, and enterococcus. Paired samples from the storm drain discharge and coastal water (25 yards down current of the discharge) will be collected and compared to evaluate the impact after mixing..

Frequency of sampling of coastal storm drains are reduced to every other month where bacterial indicators are low, where paired samples show minimum impact or where year-to-year improvement is achieved. \*

## EPA Endorses Green Design for Runoff Control

EPA's statement supporting green infrastructure to solve stormwater, CSO, Nonpoint Source, and other water quality problems was published on the EPA web site.

Assistant Administrator Benjamin Grumbles wrote about green approaches several cities are using, as highlighted in last year's NRDC report, *Rooftops to Rivers: Green Strategies for Controlling Stormwater and Combined Sewer Overflows* (June 2006). The memo also

discusses the many benefits associated with green infrastructure techniques. The memo: [http://www.epa.gov/npdes/pubs/greeninfrastructure\\_h2oprograms\\_07.pdf](http://www.epa.gov/npdes/pubs/greeninfrastructure_h2oprograms_07.pdf) The NRDC at <http://www.nrdc.org/water/pollution/rooftops/contents.asp> \*

## Turbidity Sampling

(Continued From Page 4)

Medium and high risk construction projects must sample discharges from all drainage areas associated with construction. They must analyze samples for pH, turbidity and TPH.

The sample location must represent the worst quality storm water discharge in each drainage area based on visual observation of the water and upstream conditions. Sampling is required one business day after the initial ½ inch of measured precipitation from a storm event, and every one inch thereafter.

Stormwater that is detained after a storm event producing precipitation of ½ inch or more at the time of discharge also must be sampled.

## Why Turbidity?

If the concern is the release of sediment for a construction site, then there are three common measurements - suspended solids using analytical chemistry, turbidity using a meter and transparency using a field tube.

Direct correlation of these measurements is difficult. Turbidity is a pollutant indicator. It shows not only the presence of suspended and dissolved inorganic material such as silt and clay, but also inorganic material in the sediment.

Many states have numeric water quality standards for turbidity. Generally they are expressed in NTUs above background. This makes it more difficult to use the same NTU number for end-of-pipe measurements. However, turbidity is an easy and quick measurement. \*

**GUEST EDITORIAL**  
**J. Fred Heitman, CSI, CFP**

**ENFORCEMENT NEEDED FOR STORMWATER REGULATIONS TO WORK**

Recently EPA declared that the stormwater program was not working as designed to clean up the Nations waters. That is not surprising to people who are actively working in stormwater permitting throughout the country.

The reason that the regulations are not working as intended is that permittees are not properly implementing the regulations. Throughout the country there is blatant disregard for stormwater regulations; not only by permittees but also by regulatory agencies including state permitting agencies as well as MS4s.

I spend a lot of time traveling the country doing stormwater work. The common thread that I see is the lack of enforcement of the stormwater regulations by MS4s and states. The failure, then, falls upon EPA. It is EPA's responsibility to see that these regulations are enforced. Instead EPA has required that states develop permits, but not enforce these permits.

In state after state I see construction projects with inadequately maintained silt fences as perimeter controls. In many states contractors openly disregard stormwater regulations and the state by not implementing even the barest minimum of controls. I have stopped and asked why don't these contractors don't abide by their permit requirements.

Too often these sites do not even have a permit. If they have a permit usually only the minimum controls are in place and these are not maintained. The prevailing opinion is that there is so little chance that the state will catch them or that there will be any significant consequences that the contractor ignores the permit requirements.

There are parts of the country where stormwater regulations are enforced as intended. In southern California, parts of Maryland, Texas, Colorado and a few other locales stormwater is taken seriously. However, in my experience, there is no state that has uniformly good enforcement of the stormwater regulations. I wish that we had actual data to determine if, in these relatively small areas of active enforcement, water quality is improved or not. If these data exist I am not aware of those results.

If the stormwater program is to work as designed then we must have consistent, uniform enforcement of the existing regulations. For several years we have been waiting for EPA to finalize their enforcement of some large national homebuilders and box stores.

The EPA sets the example and EPA is failing in its responsibility to lead the effort to enforce the stormwater regulations. When EPA gets serious about enforcing the regulations then they will require the same from states who will require this of the MS4s. Right now all are following EPA – and nothing is happening at any level.

We don't need more or different regulations. They will not work either without enforcement. Instead we need universal, consistent enforcement of the current stormwater regulations. After we achieve that level of commitment from EPA, states and MS4s then, and only then, can we truly assess whether or not the stormwater program is cleaning up the problem. \*

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