

### Introduction

Nearly 40 percent of all surveyed bodies of water in the U.S. do not meet the Environmental Protection Agency's (EPA's) water quality standards because of untreated polluted runoff that is often discharged directly into those water bodies.

This water pollution results in the destruction of fish and aquatic habitats, loss in aesthetic value and threats to public health due to contaminated food, drinking water and recreational waterways.

The 1972 Clean Water Act (CWA) prohibits the discharge of any pollutant from a point source into a U.S. body of water unless that discharge is authorized by a National Pollutant Discharge Elimination System (NPDES) permit.

### Definitions

A **pollutant** has broad definitions in the CWA and can include any type of industrial, municipal and agricultural waste discharged into the water.

Some examples of pollutants include dredged soil, sewage, garbage, chemical waste, biological waste, radioactive materials, pesticides, discarded equipment, rock, sand and cellar dirt.

A **point source** is any confined and discrete conveyance such as a pipe, ditch, storm drain, channel, tunnel or container. This can include vessels or other floating craft from which pollutants are discharged.

A **U.S. body of water** is any navigable water, interstate waters and oceans out to 200 miles from the coast.

### The Clean Water Act: Phase I

The CWA was amended by Congress in 1987. This amendment required the EPA to establish phased NPDES requirements for storm water discharges. The EPA published the Phase I NPDES permit application requirements for certain industries and large municipal separate storm sewer systems in 1990. More than 100,000 industrial facilities were directly affected by this requirement.

Typical industrial facilities include but are not limited to:

- Manufacturing facilities
- Hazardous waste treatment and storage
- Landfills
- Sewage treatment plants

- Recycling facilities
- Power plants
- Mining operations
- Oil and gas operations
- Airports
- Transportation facilities
- Construction activities

Phase I also included the medium and large MS4s. An MS4 is any municipal separate storm sewer system in an incorporated place that serves a population of over 100,000 people.

### The Clean Water Act: Phase II

The EPA promulgated application requirements for Phase II Storm Water Program in August of 1995. Phase II required all small MS4s that discharged pollutants into a U.S. body of water to have an NPDES permit. A small MS4 is a municipal separate storm sewer system that services populations of less than 100,000. Construction activities disturbing between one and five acres must also be permitted. All Phase II regulated entities must be permitted by March of 2003.

Regulated small MS4s and construction sites must design programs to reduce their discharge to the "maximum extent practicable," protect water quality and satisfy the water quality requirements of the CWA.

The Phase II rule also defines the storm water management program as a program comprised of the following six "Best Management Practices" or BMPs:

- Public education and outreach
- Public participation and involvement
- Illicit discharge detection and elimination
- Construction site runoff control
- Post-construction runoff control
- Pollution prevention and good housekeeping

### The NPDES Permit

An NPDES permit will specify the acceptable level of a pollutant in a discharge. Acceptable levels are determined by the State or Federal EPA.

NPDES permits are issued by states that have obtained approval from the EPA or through the EPA Regions in

states without approval. The permits require the facility to sample its discharges and report to the regulatory agency the results.

Federal laws provide the EPA with various methods of taking enforcement against permit violators. These enforcements include correcting violations, monetary fines, and civil and criminal actions against willful violators.

The facility monitoring reports are public documents that are available to the general public. If any member of the general public finds a facility violating its NPDES permit, legal action can be taken.

The CWA limits the lengths of NPDES permits to five years. The permits can be renewed at any time after the permit holder applies. Most NPDES permits include the following:

- A site map showing topography and/or drainage areas and site characteristics
- An estimate of the total surface drained by each outfall
- A description of significant materials exposed to rainfall
- Information on significant leaks and spills in the last three years

It also includes quantitative testing data for the following parameters:

- Any pollutant limited in an effluent guideline to which the facility is subject
- Any pollutant listed in the facility's NPDES permit for process wastewater
- Oil and grease, pH, BOD, COD, TSS, total phosphorus, nitrate plus nitrite nitrogen, and total Kjeldahl nitrogen
- Certain pollutants known to be in the discharge

### **Commonly Asked Questions**

**Q.** Which water samplers are more effective for deep water sampling?

**A.** Both Kemmerer bottles and Van Dorn bottles work using the same principle. They can be lowered in an open position to a desired depth and tripped closed using a messenger. A Van Dorn bottle is more desirable for deeper depths and the Kemmerer should be used for collecting surface samples.

**Q.** How does the regulatory agency determine the discharge limits of the NPDES permit?

**A.** Each year, the state must submit a Water Quality Management plan to the Regional Administrator. The

WQM is a comprehensive plan which describes the state of the water quality and a listing of the point sources contributing to the pollution. Through a series of calculations, the State determines the discharge limits.

### **Sources for more information**

40 CFR Part 122

Clean Water Act

[www.epa.gov](http://www.epa.gov)

[www.epa.gov/OW](http://www.epa.gov/OW)

[www.benmeadows.com](http://www.benmeadows.com)

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