

# Developments in Clean Water Law

## NACWA's 2007 Law Seminar

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# Tilting at Windmills:

*Stormwater and Numeric Water Quality Standards*



## Tilting at Windmills: *Stormwater and Numeric Water Quality Standards*

- An admirable goal
- An admirable motivation
- Loyal followers
- Willingness to suffer for the dream
- Wholly unrealistic (not based on sound science)

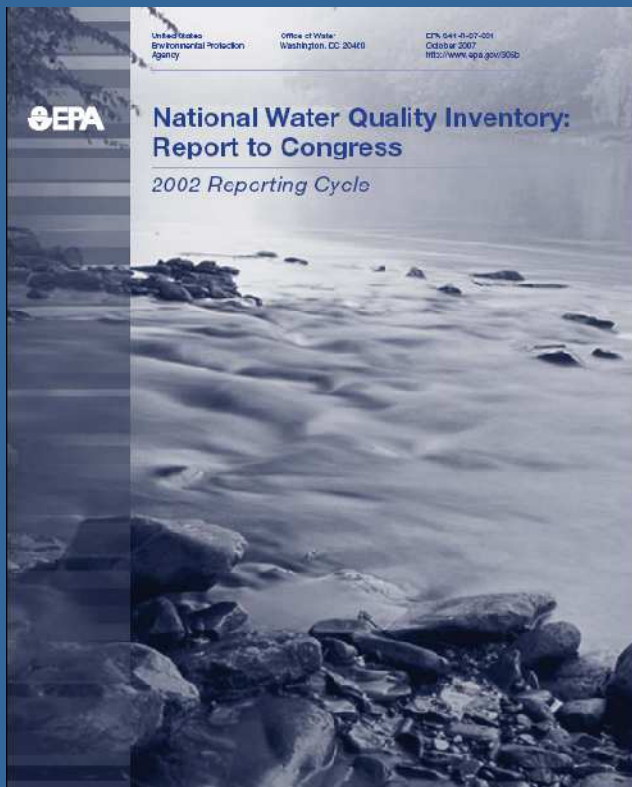


# The Clean Water Act (1972) (Abridged)

1. States set water quality standards (designated uses + water quality criteria = WQS), which need EPA approval
2. Point source dischargers obtain NPDES permits with effluent limitations that meet WQS
3. U. S. waters become fishable and swimmable, and we all live happily ever after



# EPA's October 2007 Water Quality Report to Congress (2002 Reporting Cycle)



**Water quality in assessed river  
and stream miles**

**Total Stream Miles 3,692,830**

**Stream Miles Assessed  
695,540 (19% )**

**51% Good**

**45% Impaired**

**4% Good but Threatened**

# The CWA is failing!

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- To achieve its objectives
- To achieve its goals
- In spite of billions of dollars poured into compliance by municipalities, industry and taxpayers

# What is the problem?

- Water Quality Standards are being set based upon old, flawed models that do not reflect today's peak flow problems.
- Using flawed models results in permit limits that are more stringent than necessary to meet WQS.
- Water quality standards will not be met so long as they continue to be developed using flawed models. In the meantime, billions of dollars will be spent without significantly improving water quality.

# The CWA as Implemented

## A Quixotic Quest

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- Meeting water quality standards, goals and objectives set on critical, low flow assumptions and modeling during periods of peak flow (wet weather)
- Assessing water bodies and segments based on solely on biological assessments based solely on models based on expected populations, without supporting chemical or physical monitoring or data



# Nationwide Urban Runoff Program (NURP): Final Report (1983)

- Examined:
  - quality characteristics of urban runoff and similarities or differences at different urban locations
- the extent to which urban runoff is a significant contributor to water quality problems across the nation
  - performance characteristics and the overall effectiveness and utility of management practices for the control of pollutant loads from urban runoff

# 1987 Water Quality Act

- Added Section 402(p) for stormwater
- Required NPDES permits for stormwater discharges from municipal separate storm sewer (MS4) and stormwater discharges associated with industrial activity
- Created Section 319 for nonpoint source demonstration project funding

# Permit requirements

- Industrial discharges - shall meet all applicable provisions of this section and section 1311 of this title
- Municipal discharges - shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers; and shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.

# Phase 1

- Published November 16, 1990 (55 FR 47990)
- Eleven categories of stormwater discharges associated with industrial activity
- Discharges from MS4s located in areas with a population of 100,000 or more (Phase I
- sources)



# Requirements for Medium and Large MS4s (40 CFR 122.26(d))

- Identify major outfalls and pollutant loadings;
- Detect and eliminate non-stormwater discharges to the system;
- Reduce pollutants in runoff from industrial, commercial, and residential areas; and
- Control stormwater discharges from new development and redevelopment areas

## Phase II

- Implemented certain exemptions and waivers
- Requires NPDES permit coverage for stormwater discharges from:
  - Small MS4s located in “urban areas
  - Construction activity disturbing between 1 and 5 acres of land

## Urbanized Areas

- Determined by Bureau of the Census
- Central place and the adjacent densely settled surrounding area (urban fringe)
- together have a residential population of at least 50,000 and an overall population density of at least 1,000 people per square mile

# Types of Permits

- Individual Permit – facility specific; terms, conditions and limitations based on what can be discharged without causing violations of water quality standards
- General Permit – issued by permitting authority to cover numerous dischargers that have same or similar types of operations, wastes, and which need same or similar monitoring and effluent limitations



# 2002 Water Quality Report

- In the 17% of shoreline miles not fully supporting their uses, pathogens and metals were the leading causes of impairment, and urban related runoff /stormwater, unknown/unspecified and industrial discharges were listed as top sources of impairment.
- An also-ran for rivers and streams, lakes

**And yet . . . . .**

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**Stormwater control is a top EPA  
enforcement priority**

# “Critical, Low-flow Conditions”: The Low Down on Low Flow

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“Water quality standards should protect water quality for designated uses in critical low-flow situations.” *Water Quality Standards Handbook, Second Edition, 1994*

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*Water Quality Standards Handbook, Second Edition, 1994*

*Water Quality*



# Water Quality Criteria

- Set by EPA under Section 304(a)
- Criteria to accurately reflect “the latest scientific knowledge” on, among other things, the identifiable effects on health and welfare (including fish, wildlife, aesthetics and recreation) which may be expected from the presence of pollutants in any body of water
- Usually expressed in concentrations + effects

# EPA Guidance for Aquatic Life Design Flows

- Numeric water quality criteria should apply at all flows that are equal or greater than:
- For acute criteria – 1Q10 or 1B3
- For chronic criteria – 7Q10 or 4B3

# EPA Guidance for Human Health Design Flows

- For non-carcinogens – 30Q5
- For carcinogens – harmonic mean flow (calculated by dividing the number of daily flows by the sum of the reciprocals of those daily flows)

# ***Defenders of Wildlife v. Browner***

**191 F.3d 1159 (9th Cir. 1999)**

- For industrial dischargers, the permit must "meet all applicable provisions of this section and section 1311 of this title." § 402(p)(3)(A).
- For municipal storm-water discharge, permits "shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system design and engineering methods, and such other provisions as the Administrator . . . determines appropriate for the control of such pollutants." §402(p)(3)(B)(iii).

# *Friends of Pinto Creek v. EPA, Appeals No. 05-70785 9<sup>th</sup> Cir. 2007*

- Filed October 4, 2007
- Cites 40 C.F.R. § 122.4, noting the “plain language” of the regulation, that no permit may be issued to a new discharger if the discharge will contribute to the violation of water quality standards, unless
- Under 40 CFR 122.4(i) the discharger demonstrates sufficient loading capacity and that dischargers are subject to compliance schedules to bring segment into compliance with WQS

# Building Ass. Of Dan Diego County v. State of California

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- 124 Cal. App. 4<sup>th</sup> 866 (2007)
- What does MEP really mean?

# The Clean Water Act

- Will never meet its goals and objectives so long as standards, TMDLs, permit limits and waste load allocations are based on patently inaccurate flow assumptions and requirements, i.e., critical low flow calculations, especially when setting requirements during periods of peak flows (wet weather)

# Wet Weather Standards

- Must be adopted and utilized when regulating stormwater discharges, CSOs and SSOs, and for assessing waters if we are to have true, science-based standards
- Should be based on design flows calculated for peak flow periods
- Should measure the time-limited impacts on aquatic life rather than assuming a steady-state flow



# The Quixotic Quest

- We need to base water quality criteria and standards on realistic flow conditions and assumptions, or else we are merely tilting at windmills.



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# Municipal Separate Storm Sewer System (MS4) Program Evaluation Guidance

- Primarily for use by NPDES authorities to evaluate the quality of Phase I and Phase II MS4 programs
- Published January 1, 2007
- (EPA-833-R-07-003)
- [http://www.epa.gov/npdes/pubs/ms4guide\\_with\\_appendixa.pdf](http://www.epa.gov/npdes/pubs/ms4guide_with_appendixa.pdf)

# National Menu of Best Management Practices (BMPs) for NPDES Stormwater

- <http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm>