COMMENTS

Leading the EPA to Stormwater: The Long Road to Construction Stormwater Regulation and the Role of Numeric Effluent Limitations

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I. INTRODUCTION

On December 1, 2009, the United States Environmental Protection Agency (EPA or Agency) issued its final construction and development (C&D) stormwater rule, representing a sea change in the Agency's approach to construction discharges under the Clean Water Act (CWA).[1] For the first time, discharges would be subject to a numeric effluent limitation and builders would be required to monitor regularly the level of turbidity in discharges and report monitoring results to a permitting authority. The rule was a significant revision of the EPA's relatively

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1. Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category, 74 Fed. Reg. 62,996 (Dec. 1, 2009) (to be codified at 40 C.F.R. pt. 450).

hands-off policy, which had manifested itself in widespread industry noncompliance and elicited immediate legal action from the building industry. In response to this industry pressure, the EPA had the numeric effluent limitation remanded back to itself for an eighteen-month period to reconsider the nature of the limitation.[2] By adding the numeric measure of pollutant discharge, the EPA gave itself a powerful regulatory tool. A numeric limitation ensures that a builder's on-site controls are preventing pollutants from reaching receiving waters and storm sewers. Additionally, through its regular monitoring and reporting requirements, the numeric limitation secures a stronger relationship between industry and regulatory authorities, thereby ensuring that the lack of enforcement and subsequent noncompliance and environmental harm characterizing prior EPA regulations will not be repeated. To best promote the goals of the CWA, the EPA should reinstitute the numeric effluent limitation for turbidity following remand.

This Comment will introduce the scale of the American construction industry and its impact on the nation's waters, trace the gradual application of the CWA to C&D stormwater discharges, and consider the role of numeric effluent limitations in construction stormwater regulation going forward.

II. THE NATURE OF CONSTRUCTION STORMWATER DISCHARGES

Construction stormwater pollution is necessarily the product of construction, and America does not lack for construction. In the decades following World War II, the United States experienced both an unprecedented level of prosperity and a massive population gain. Within twenty years of the war's end, the U.S. population increased by more than fifty million people, reaching the 200 million mark in 1965.[3] These population explosions were often localized in large metropolitan areas. The population of Los Angeles jumped from under four million to over eight million; the cities of Miami, Phoenix, and San Jose saw their populations more than triple in the same period.[4]

These increasing numbers initiated a process of community decentralization. As urban centers became increasingly dense or, for social reasons, less attractive to homebuyers, Americans moved to then-undeveloped suburban areas often accessible via newly constructed

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2. EPA's Unopposed Motion for Partial Vacature of the Final Rule, Remand of the Record, to Vacate Briefing Schedule, and to Hold Case in Abeyance, Wisc. Builders Ass'n v. EPA, No. 09-4113 (7th Cir. Aug. 13, 2010) [hereinafter EPA's Unopposed Motion].

3. ROBERT BRUEGMANN, SPRAWL: A COMPACT HISTORY 42 (2005).

4. *Id.* at 42-43.

interstate highway systems. In addition to the commercial enterprises established to support newly transplanted residents, the suburban landscape offered nonservice businesses large parcels of land at relatively inexpensive prices. Manufacturing facilities and factories were established or relocated to suburban developments and business parks, as were government offices and large corporate campuses.[5] While this shift is often expressed in the terms of relocation, from urban to exurban, the more accurate characterization of suburban development is expansion, or addition—more people, more homes, more buildings.

Facilitating this suburban expansion was a construction industry that had perfected a rapid construction model by reducing the costs of building and streamlining actual construction through large-scale production and standardization, applying industrial strategies to the construction of homes and businesses.[6] Using these high-volume construction techniques, the C&D industry today is able to develop approximately 2.2 million acres of land every year.[7] From 1978 to 2010, the industry averaged 1,465,245 home starts annually, the vast majority coming through the construction of single family homes.[8] That number peaked in 2005 when construction began on more than two million homes, but has declined as the housing market suffered the effects of recession as well as a nationwide foreclosure crisis.[9] Less than 600,000 homes were started in 2009 and 2010, both years representing all-time lows since data was collected, but the numbers are expected to rebound to above 1.5 million by 2012.[10] This dip in home starts should not be taken to signal the permanent decline of residential building. The pace of homebuilding correlates generally with national economic performance, and as the economy rebounds, the construction industry will respond to the associated increase in demand for new homes, especially considering the almost 100 million residents the United States is expected to add in

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5. *See id.* at 44-47. Many urban manufacturing areas and central business districts were located in aging buildings that had suffered from lack of adequate investment. The cost to put down roots in a new, suburban facility or office space was often less than continuing to invest in deteriorating urban locations, many of which were located in central city areas with declining property values and disappearing residents.

6. *See id.* at 43-44.

7. Memorandum from Walker B. Smith, Dir., Office of Regulatory Enforcement, EPA, 2003 Storm Water Compliance and Enforcement Strategy 11 (Aug. 14, 2003), *available at* http://www.epa.gov/compliance/resources/policies/civil/cwa/stwenfstrategy2003.pdf.

8. *See Annual Housing Starts (1978-2010)*, NAT'L ASS'N OF HOME BUILDERS, http://www.nahb.org/generic.aspx?sectionID=130&genericContentID=554 (last visited Apr. 9, 2011).

9. *Id.*

10. Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category, 74 Fed. Reg. 62,996, 63,031 (Dec. 1, 2009) (to be codified at 40 C.F.R. pt. 450).

the next thirty years.[11] If anything, the scope of the current residential foreclosure crisis is as much a reflection of the C&D industry's capacity to construct homes quickly and on a massive scale as it is an indictment of questionable lending policies.

The construction process produces a number of pollutants that can have a significant impact on surrounding environments, especially when development reaches the scale experienced in the United States in the last half century. Exhaust emissions from diesel-powered construction equipment and small airborne dust particles affect air quality, excavations can disturb buried pollutants, and on-site activities such as the use of electrical saws and generators produce noise pollution that affects nearby humans and animals. In addition, construction sites often harm local waters through the addition of pollutants to groundwater and through stormwater runoff, which transports on-site pollutants to nearby waters.

Stormwater runoff is a major source of water pollution in the United States, at times "comparable to, if not greater than, contamination from industrial and sewage sources."[12] Stormwater discharges are unique among pollution sources in that the volume of discharge is unrelated to activity at the discharge source. While an industrial facility's sulfur dioxide emissions correlate to its level of production, the amount of stormwater requiring control is determined by a wholly uncontrollable variable—the amount of rainfall. Control and regulation of stormwater is complicated by the highly variable nature of resulting discharges, which are influenced by "the severity of a particular storm event, the frequency of storm events, flow rates, absorption capacities of surrounding soils, [and] pollutant types and concentrations," among other factors.[13]

Construction is a transformative process, whether measured by the presence of structural additions to a property or the physical alterations required to prepare a site for construction. Sites selected for development typically must be cleared, graded, or excavated— processes that remove vegetation and root systems providing soil stability and invariably disturb soil—before building can begin on a site.[14] This loose

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11. *U.S. Population Projections*, U.S CENSUS BUREAU, http://www.census.gov/population/www/projections/summarytables.html (last visited Apr. 9, 2011).

12. Envtl. Def. Ctr., Inc. v. EPA, 344 F.3d 832, 840 (9th Cir. 2003) (quoting Richard G. Cohn-Lee & Diane M. Cameron, *Urban Stormwater Runoff Contamination of the Chesapeake Bay: Sources and Mitigation*, 14 ENVTL. PROF. 10, 10 (1992)).

13. John H. Minan, *General Industrial Storm Water Permits and the Construction Industry: What Does the Clean Water Act Require?*, 9 CHAP. L. REV. 265, 286 (2006).

14. Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category, 74 Fed. Reg. at 62,998; Richard Eldon Davis & Neil C. Johnson, *Permits, Best Management Practices, and Construction Sites: Don't Muddy the Water, or Else!*, 61 ALA. LAW. 330, 331 (2000).

soil is then vulnerable to stormwater runoff, transporting the soil off-site, along with any materials, chemicals, or other organic or mineral pollutants absorbed by the soil, and depositing it into receiving waters or storm sewers. The rate of runoff is often accelerated, and therefore more destructive, when a construction project requires areas of permeable soil to be compacted or covered by a nonpermeable surface, such as a paved street, so that the soil is unable to absorb water moving across its surface.

In general, construction sites discharge a limited quantity of nonorganic and toxic organic pollutants, usually fluids from on-site vehicles and machinery and construction material debris such as asphalt sealants, copper flashing, adhesive materials, and concrete admixtures.[15] The principal pollutants to be controlled on construction sites—and the principal concern of permit programs—are sediment and turbidity transported in stormwater runoff and through erosion.[16]

Sediment pollution is the "deposition of soil particles, both mineral and organic" into receiving waters.[17] Soil can contain colloids, silt, clay, and sand particles that are easily carried away by rain or snow-melt moving across disturbed or bare soil.[18] Depending on its density, soil will either remain suspended in flowing receiving water or quickly reach the water's bottom. Because stormwater runoff often deposits a large volume of sediment over a short period of time—an example would be the peak flow following an intense afternoon thunderstorm—the effect on receiving waters is similar to dumping and can have a violent effect on aquatic life.[19] Large discharges can smother roe, reduce oxygen levels in receiving water, block sunlight, disrupt feeding, and bury insects and aquatic vegetation that provide food for fish.[20]

In addition to its environmental and ecological impacts, sediment pollution has direct and powerful economic consequences. Without a stormwater control policy in place, sedimentation would cause more than $9.2 billion in damages *every year*—$1.6 billion in loss of water storage capacity, $1.3 billion in dredging expenses, $1.3 billion in flood damages, $1.7 billion in additional water treatment, $575 million in

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15. Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category, 74 Fed. Reg. at 63,011.

16. OFFICE OF WATER, EPA, STORM WATER MANAGEMENT FOR CONSTRUCTION ACTIVITIES: DEVELOPING POLLUTION PREVENTION PLANS AND BEST MANAGEMENT PRACTICES 3-1 (1992), *available at* http://www.epa.gov/npdes/pubs/chap03_conguide.pdf.

17. Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category, 74 Fed. Reg. at 63,011.

18. *Id.* at 63,010.

19. *See* Nw. Envtl. Def. Ctr. v. Brown, 617 F.3d 1176, 1180 (9th Cir. 2010).

20. *Id.*

damage to fisheries, and $2.7 billion in degradation of recreational waters.[21] Stormwater discharges from construction activities are especially potent sources of sedimentation, producing more water degradation per acre of land use than any other degradation source.[22] The total suspended solids concentration in water from uncontrolled construction sites can be more than 150 times greater than the concentration resulting from runoff from undeveloped land.[23]

Turbidity is not a specific physical pollutant, but rather a measure of light blockage in receiving waters caused by materials suspended in the water. The EPA defines turbidity as "an expression of the optical property that causes light to be scattered and absorbed rather than transmitted in a straight line through the water."[24] While turbidity is not what would be considered a traditional pollutant, the EPA believes that it "fits easily" within the CWA definition of "pollutant," which courts have consistently held is a broad and accommodating definition.[25] Turbidity is valuable from a monitoring standpoint as an "indicator" pollutant that signals the presence of other pollutants in discharges from construction sites, including metals and nutrients.[26] In its Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category Rule, which is discussed later in this Comment, the EPA cited this indicator quality as the reason it selected turbidity as the target of numeric limitations.[27]

Erosion is often the mechanism though which sediment and turbidity pollution reach receiving waters.[28] Its effects are felt both on- and off-site. On-site, erosion removes productive soils; off-site, erosion causes a multitude of problems similar to those resulting from sedimentation: "degrading water quality, impairing biological communities, silting streams, and causing localized flooding."[29] Rainfall

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21. David L. Hatchett, *Regulation of Construction Site Stormwater Runoff: We Can Do Better Than This*, 29 IND. L. REV. 153, 155 nn.21-22 (1995). These figures were calculated in 1985, before the 1987 Stormwater Amendments became effective, and are adjusted for inflation.

22. *Id.* at 156.

23. Memorandum from Walker B. Smith, *supra* note 7, at 11.

24. Proposed General NPDES Permit for Placer Mine in Alaska, 61 Fed. Reg. 3403, 3422 (Jan. 31, 1996).

25. Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category, 74 Fed. Reg. 62,996, 63,006 (Dec. 1, 2009) (to be codified at 40 C.F.R. pt. 450) (citing Nat'l Wildlife Fed'n v. Gorsuch, 693 F.2d 156, 174 n.56 (D.C. Cir. 1982)); Sierra Club v. Cedar Point Oil Co., 73 F.3d 546, 565 (5th Cir. 1996).

26. Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category, 74 Fed. Reg. at 63,006.

27. *Id.* at 63,006-07.

28. *Id.* at 62,998.

29. Hatchett, *supra* note 21, at 155.

on exposed soil results in rain splash, rills ("small channels typically less than one foot deep"), and sheetwash ("thin sheets of water flowing across a surface").[30] These erosive effects further destabilize soil, as well as convey now sediment-laden stormwater off-site, and, if the flow is not effectively controlled, it deposits the sediment into either municipal stormwater systems or directly into nearby waters.

While undeniably destructive and costly, sedimentation and erosion are relatively uncomplicated processes, and their remedies mirror this simplicity. Stormwater controls are implemented with basic goals in mind: minimize soil disturbance, stabilize disturbed soil, prevent off-site runoff from flowing across disturbed soil, slow runoff moving across a site, and remove sediment from on-site runoff before it leaves the site.[31] Construction companies plant vegetation or introduce a substitute such as mulch or hay mats, which stabilizes soil and slows the pace of on-site runoff. Additionally, low-tech solutions such as pools, passive sand filters, seep berms, and silt screens prevent sediment and turbidity from leaving a construction site, although smaller particles are able to reach receiving waters. These technologies relying principally on setting and filtration to remove sediments and turbidity are known as passive treatment systems.[32]

Often, phasing the construction process is the best way to control the discharge of on-site pollutants—for example, building in such a way that grading and clearing is minimized or, in areas with consistent rainy seasons, scheduling grading to reduce the possibility that bare soil will be exposed to rainfall.[33] The principle common to each erosion prevention strategy—the basic formula to prevent both sedimentation and erosion—is that water, whether in the form of direct precipitation, runoff, or snowmelt, does not come into contact with bare or disturbed soil.

III. REGULATION OF CONSTRUCTION STORMWATER DISCHARGES

Stormwater discharges, including discharges from the C&D category, are regulated under the CWA. Congress amended the Federal Water Pollution Control Act[34] (FWPCA) in 1972 to form the CWA, characterizing the new law as a means to "restore and maintain the

30. Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category, 74 Fed. Reg. at 62,998.

31. OFFICE OF WATER, EPA, *supra* note 16, at 3-1.

32. Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category, 74 Fed. Reg. at 63,012.

33. *Id.* at 63,011.

34. 62 Stat. 1155 (1948).

chemical, physical, and biological integrity of the Nation's waters."[35] Prior to the passage of the CWA amendments, regulation under the FWPCA had been generally ineffective because of "awkwardly shared" state and federal responsibility for further interpreting and enforcing the law.[36] The CWA, as an antidote, relies on a uniformly applicable permit, the National Pollutant Discharge Elimination System (NPDES) permit, which includes nationwide standards of performance.[37] The CWA operates by applying a blanket prohibition against the discharge from a point source "of any pollutant by any person"[38] into navigable waters except to the extent that the discharge is consistent with the terms of an NPDES permit.[39] NPDES permits regulate discharges by "plac[ing] limits on the type and quantity of pollutants that can be released" into receiving waters.[40]

A point source discharge, as defined by the CWA, is "any discernible, confined, and discrete conveyance . . . from which pollutants are or may be discharged."[41] In *South Florida Water Management District v. Miccosukee Tribe of Indians*, the Supreme Court of the United States held that a discharge need not be the original source of a pollutant to qualify as a point source.[42] Instead, the determinative factor is whether the discharge conveys the pollutant to navigable waters.[43] Nonpoint source discharges, which are not subject to NPDES permit requirements, are not defined within the CWA but have been described by the courts as pollution arising from "dispersed activities over large areas" that is "not traceable to any single discrete source."[44] Exclusion of nonpoint sources

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35. Clean Water Act § 101(a), 33 U.S.C. § 1251(a) (2006).

36. EPA v. California *ex rel.* State Water Res. Control Bd., 426 U.S. 200, 202 (1976). Under the FWPCA, dischargers were often required to obtain permits from both state and federal permitting authorities and federal permit authority was shared by two federal agencies. The FWPCA also suffered because of its reliance on standards specifying "acceptable levels" of ambient pollution rather than requiring individual actors to minimize pollutant discharge. *Id.* at 202-03.

37. Clean Water Act § 402, 33 U.S.C. § 1342.

38. *Id.* § 1311(a).

39. The CWA exempts certain discharges from permitting requirements, including agricultural return flows and stormwater runoff from oil, gas, and mining operations. *Id.* § 1342(1).

40. S. Fla. Water Mgmt. Dist. v. Miccosukee Tribe of Indians, 541 U.S. 95, 102 (2004).

41. Clean Water Act § 502(14), 33 U.S.C. § 1362(14). Examples of conveyances listed in the CWA that may constitute point sources include pipes, ditches, channels, tunnels, wells, containers, concentrated animal feeding operations, and vessels and other floating crafts. *Id.*

42. *S. Fla. Water Mgmt. Dist.*, 541 U.S. at 105.

43. *Id.*

44. League of Wilderness Defenders v. Forsgren, 309 F.3d 1181, 1184 (9th Cir. 2002). To illustrate its description of nonpoint pollution, the court used as an example the thin layer of

from the NPDES program is logical, because the CWA operates by placing the burden on individual polluters to minimize their pollutant discharge at the point of discharge, so called "end of pipe" regulations. Individual, "discernible" point source discharges can be identified and controlled, whereas dispersed discharges, whose sources are less readily identifiable, are less likely to be effectively controlled by an individual polluter under an NPDES permit. Consistent with Congress's intent, courts generally read "point source" broadly and find that a point source exists when even relatively diffuse runoff is controlled through a man-made conveyance system.[45]

Although the CWA required stormwater dischargers to apply for NPDES permits within 180 days of its enactment, in 1987, more than fifteen years after the CWA was enacted, the EPA had yet to require the majority of stormwater discharges to apply for NPDES permits.[46] Not only had the EPA failed to subject most stormwater discharges to regulations, the Agency actively sought to remove forms of stormwater discharges from the scope of the NPDES program. In May 1973, just seven months after the CWA became law, the EPA excluded from permitting requirements any "[u]ncontrolled discharges composed entirely of storm runoff when these discharges are uncontaminated by any industrial or commercial activity," unless the EPA or state permitting agency identified the particular discharge as a significant contributor to pollution.[47] While this exclusion applied specifically to discharges from storm sewers, the regulation is one of the first examples of the EPA's hesitance to regulate discharges of stormwater, even when the discharge plainly satisfies the definition of point source by channeling or otherwise conveying the flow of stormwater into receiving waters.

Congress identified as the primary obstacle to stormwater regulation the sheer number of stormwater discharges subject to permitting under the broad definition of point source.[48] The scale of

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rubber particles from tires and copper shavings from brake linings that covers roads and parking lots. *Id.*

45. *See* Nw. Envtl. Def. Ctr. v. Brown, 617 F.3d 1176 (9th Cir. 2010) (holding that a series of ditches and culverts transporting runoff from logging roads to receiving waters is a point source under the CWA and therefore subject to NPDES requirements); *see also* Cordiano v. Metacon Gun Club, Inc., 575 F.3d 199 (2d Cir. 2009) (finding that a berm at a shooting range is not a point source because it does not collect or channel runoff).

46. *Brown*, 617 F.3d at 1193.

47. National Pollutant Discharge Elimination System, 38 Fed. Reg. 13,528, 13,530 (May 22, 1973) (to be codified at 40 C.F.R. pt. 125).

48. *Brown*, 617 F.3d at 1193 (citing 131 CONG. REC. 19,846, 19,850 (daily ed. July 22, 1985) (statement of Rep. Rowland)) ("Under existing law, the [EPA] must require [NPDES] permits for anyone who has stormwater runoff on their property. What we are talking about is

required regulation presented an "administrative nightmare" in the words of one senator,[49] and indeed, following passage of the CWA, the EPA promulgated rules exempting certain stormwater discharges from NPDES permitting requirements.[50]

In recognition of these administrative difficulties, as well as the unique character of stormwater discharges, Congress passed the 1987 Stormwater Amendments to the CWA.[51] The amendments established a two-tiered application of the NPDES process to stormwater discharges. Stormwater discharges that were identified as major contributors of pollutants would be addressed first in Phase I regulations; less damaging discharges were relegated to later Phase II regulations to be promulgated following agency study.[52] Included in the five stormwater discharge categories to be regulated in Phase I were discharges associated with industrial activities.[53] In 1990, the EPA announced that stormwater discharges from construction activities that disturb five or more acres of total land are considered discharges associated with industrial activity and therefore must be made pursuant to an NPDES permit under Phase I regulations.[54] In order to prevent developers from gaming the new system, the EPA stated that construction activity disturbing less than five acres of land is subject to Phase I regulations when part of a larger common plan of development disturbing more than five acres. This 1990 entry in the Federal Register, made just over twenty years ago, marked the first time that stormwater discharges from construction sites were regulated by the EPA under the CWA.

The five-acre threshold was challenged and invalidated in *Natural Resources Defense Council, Inc. v. EPA* in 1992.[55] While promulgating the Phase I rule, the EPA abandoned its initial one-acre threshold in favor of five acres both out of administrative concerns and because of a thinly supported determination that the five-acre measure would somehow

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potentially thousands of permits for churches, schools, residential property, runoff that poses no environmental threat[.]").

49. 131 CONG. REC. 15,616, 15,657 (daily ed. Jun. 13, 1985) (statements of Sen. Wallop).

50. *See, e.g.*, Silvicultural Activities, 40 C.F.R. § 122.27 (2006) (excluding from the definition of "point source" a variety of discharges associated with timber harvesting that result from "natural runoff").

51. Pub. L. No. 100-4, 101 Stat. 7 (1987).

52. *Brown*, 617 F.3d at 1194.

53. Clean Water Act § 402(p), 33 U.S.C. § 1342(p) (2006).

54. National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges, 55 Fed. Reg. 47,990, 48,033 (Nov. 16, 1990) (to be codified at 40 C.F.R. pts. 122, 123 & 124).

55. 966 F.2d 1292 (9th Cir. 1992).

identify sites that "amount to industrial activity."[56] Citing the absence of any adequate EPA justification for the rule, the United States Court of Appeals for the Ninth Circuit held that the five-acre limit was arbitrary and capricious, reasoning that the EPA failed to support its finding that construction projects disturbing less than five acres are nonindustrial in nature.[57] In 1999, the EPA issued its Phase II regulations, which required "small construction activity," those projects that disturb at least one acre of land but less than five acres, to obtain an NPDES permit in order to discharge stormwater.[58]

The Phase II regulations marked the last major expansion of the scope of EPA regulations applicable to stormwater discharges. As of 1999, every construction project that disturbs at least one acre of land, or is a component of a larger plan disturbing at least one acre of land, is required to obtain and adhere to the terms of an NPDES permit in order to comply with the CWA.

IV. THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

CWA provisions and EPA and state regulations are made applicable to builders and other discharges by the terms of an NPDES permit. The NPDES provisions in section 402 embody a cooperative federalism structure, authorizing either the EPA or an EPA-approved state authority to administer the permitting program.[59] A state wishing to administer its program must demonstrate that it possesses adequate administrative capabilities and meets minimum federal requirements in order to take primary responsibility for issuance of NPDES permits.[60] While approved states administer their NPDES programs, the EPA determines the minimum national pollution standards that each state must include in its NPDES program. States are allowed to promulgate more stringent standards than the EPA-created federal standard, but cannot regulate below the EPA's standards. State-level administration is the norm. Today, the EPA is the primary permitting authority in only four states—

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56. National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges, 55 Fed. Reg. at 48,036.

57. *Natural Res. Def. Council*, 966 F.2d at 1306.

58. 40 C.F.R. § 122.26(b)(15) (1996).

59. Clean Water Act § 402(a)-(b), 33 U.S.C. § 1342(a)-(b) (2006).

60. National Pollutant Discharge Elimination System, 56 Fed. Reg. 40,948, 40,951 (Aug. 16, 1991) (to be codified at 40 C.F.R. pt. 122).

Idaho, Massachusetts, New Hampshire, and New Mexico—as well as the District of Columbia.[61]

NPDES permits are issued in two forms: the individual permit and the general permit. Individual permit holders, usually the owner or operator of a site featuring a point source, apply to the appropriate permitting agency (a state administrator or the EPA), who then considers site-specific conditions, including topography, soil-type, and rainfall patterns,[62] to determine the terms and conditions of the permit.[63] General permits, as their name suggests, lack the site-specific considerations and tailored permit requirements that characterize individual permits. Instead, a general permit will apply to a significant number of point sources that often discharge into multiple receiving waters.[64]

Dischargers engaged in construction activity constitute the largest category of dischargers in the NPDES program,[65] and they avoid individual permits almost as a rule. The EPA estimates that less than one half of one percent of construction sites are regulated pursuant to individual permits, which are preferable only in the cases of projects involving very large construction sites that impact sensitive watersheds.[66] The EPA and state permitting agencies developed specific construction general permits (CGP) in response to this universal preference. In light of the general permit's monopoly of the construction industry and its position as the chief vehicle of construction stormwater regulation, the history and function of the general permit warrant deeper examination.

Initially, the EPA issued only individual permits, not in response to any CWA foreclosure on general permits, but as a simple failure to develop the concept fully. The Agency balked at the prospect of issuing individual permits for hundreds of thousands of stormwater discharges, fearful of both the administrative burden inherent to such regulation and the possibility that such demanding stormwater regulation would divert resources from "more pressing and identifiable environmental problems"

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61. *Authorization Status for EPA's Stormwater Construction and Industrial Programs*, EPA, http://cfpub.epa.gov/npdes/stormwater/authorizationstatus.cfm (last visited Apr. 5, 2011).

62. Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category, 74 Fed. Reg. 62,996, 63,011 (Dec. 1, 2009) (to be codified at 40 C.F.R. pt. 450).

63. Jeffery M. Gaba, *Generally Illegal: NPDES General Permits Under the Clean Water Act*, 31 HARV. ENVTL. L. REV. 409, 410 (2007).

64. *Id.*

65. Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category, 74 Fed. Reg. at 62,998.

66. *Id.* at 63,001.

like industrial process wastewater and municipal sewage.[67] As a result, the EPA either missed deadlines to issue regulations or promulgated exemptions from NPDES requirements for entire categories of stormwater point sources. In *Natural Resources Defense Council, Inc. v. Costle*, the Natural Resources Defense Council (NRDC) challenged the EPA's authority to issue these categorical exemptions.[68] The NRDC argued that the exemptions represented an impermissible agency overreach that conflicted with the CWA's clear prohibition against the discharge of pollutants unless accomplished pursuant to the terms of an NPDES permit or explicitly exempted by the CWA itself.[69] The United States Court of Appeals for the District of Columbia Circuit agreed with the NRDC, invalidating the categorical exemptions and requiring that the exempted discharges be permitted.[70]

In its arguments, the EPA explained its understanding of the CWA's regulatory scheme as mandating a two-step process: "first, that the Administrator establish national effluent limitations and, second, that these limitations be incorporated in the *individual* permits of dischargers."[71] While the court ruled that administrative infeasibility was not an adequate justification for an outright exemption from the NPDES program, it also suggested that the EPA had assumed an unnecessarily narrow interpretation of its permitting options, finding that such administrative infeasibility "may result in adjustments in the permit programs."[72] The court echoed the position of both the district court and the NRDC that the CWA allows the use of general permits, noting that section 402 did not describe the required scope of an NPDES permit, and that such an "area-wide" permit is a "well-established means for coping with administrative exigency."[73]

The EPA issued its first CGP in 1992. In order to discharge legally pursuant to a CGP, a discharger, typically the owner or operator of the C&D site who is normally a developer, builder, or contractor, submits to the appropriate permitting agency a Notice of Intent (NOI) to discharge under the general permit. The administrator approval required for an individual permit, a major siphon of administrative resources, is absent in the general permit process. The NOI is not an application for an NPDES

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67. National Pollutant Discharge Elimination System, 56 Fed. Reg. 40,948, 40,950 (Aug. 16, 1991) (to be codified at 40 C.F.R. pt. 122).
68. 568 F.2d 1369 (D.C. Cir. 1977).
69. *Id.*
70. *Id.* at 1383.
71. *Id.* at 1377 (emphasis added).
72. *Id.* at 1379.
73. *Id.* at 1381.

permit, but instead operates as an acknowledgment by the discharger of both its eligibility for the permit and its obligation to discharge consistent with the terms and conditions of the permit.[74] Once the builder submits an NOI, the permitting authority assumes a supervisory role—monitoring the builder's discharges as necessary to ensure compliance with CGP requirements, which is theoretically accomplished through on-site inspections and, when necessary, enforcement actions.[75]

The current CGP became effective on June 30, 2008. The key features of the current permit are best management practices requiring the minimization of pollutant discharges using control technology that reflects "best engineering practices based on EPA's best professional judgment."[76] As part of the CGP, a permittee is required to develop an individualized Stormwater Pollution Prevention Plan (SWPPP) outlining the builder's strategy for controlling stormwater discharges. The SWPPP describes potential on-site pollutant sources and the control technologies to be installed to reduce the discharge of pollutants.[77]

The current EPA CGP does not require any monitoring by a permit holder beyond weekly or biweekly visual checks of on-site controls and, while requiring builders to log the inspections, does not require the permit holder to make any regular reports to its permitting authority.[78] In a sense, the permit operates on a good faith standard; absent the infrequent EPA or state inspection, its requirements are obligations only to the extent that the builder actually complies by conducting site inspections and then taking steps to self-correct its own noncompliance or alerting the permit authority to its noncompliance.

V. EFFLUENT LIMITATION GUIDELINES

One of the central components of many NPDES permits is an effluent limitation guideline, a regulatory mechanism that was developed in response to weaknesses in prior water legislation. In addition to its administrative failings, the FWPCA, as the first modern effort to regulate

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74. Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category, 74 Fed. Reg. 62,996, 63,000 (Dec. 1, 2009) (to be codified at 40 C.F.R. pt. 450) (citing Texas Indep. Producers & Royalty Owners Ass'n v. EPA, 410 F.3d 964, 977-78 (7th Cir. 2005)).

75. Minan, *supra* note 13, at 278-79.

76. Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category, 74 Fed. Reg. at 63,000.

77. EPA, DEVELOPING YOUR STORMWATER POLLUTION PREVENTION PLAN: A GUIDE FOR CONSTRUCTION SITES (2007), *available at* http://www.epa.gov/npdes/pubs/sw_swppp_guide.pdf.

78. EPA, NPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES—FACT SHEET (2008), *available at* http://www.epa.gov/region4/water/permits/documents/r4-finalcpg_factsheet_8.pdf.

water pollution on a national level, was unsuccessful because it developed control standards that focused on the acceptable level of water pollution, the "tolerable effects," rather than addressing the actual causes of water pollution.[79] As a result, the EPA and state agencies had difficulty developing and enforcing standards that regulated individual discharges, the actual source of pollutants dictating water quality.[80] Mindful of these shortcomings, in enacting the CWA, Congress provided two types of standards incorporated into NPDES permits: acceptable water quality standards and, for the first time, effluent limitation guidelines.[81]

Section 304(b) of the CWA requires the EPA to develop effluent limitation guidelines (ELGs) that provide a "minimum, technology-based threshold" for continued improvements to the water quality of point source discharges.[82] An effluent limitation is "any restriction . . . on quantities, rates, and concentrations of chemical, physical, biological, and other constituents" discharged into waterways.[83] Effluent limitations are nationally applicable in order to "provide uniformity among the federal and state jurisdictions enforcing the NPDES program and prevent the 'Tragedy of the Commons' that might result if jurisdictions can compete for industry and development by providing more liberal limitations than their neighboring states," essentially creating a regulatory floor that state permit programs must respect.[84]

Technology-based limitations are fixed by determining the achievable level of pollutant reduction given the current capabilities of pollution control technologies.[85] In promulgating technology-based standards, an agency considers both technological and economic factors to assemble what can be thought of as a regulation based on feasibility.[86] One of the goals associated with a technology-based standard, regardless of the specific pollutant targeted, is the development of better control technologies. "Congress intended to use the standards as a means to 'force' the introduction of more effective pollution control technology."[87]

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79. EPA California *ex rel.* State Water Res. Control Bd., 426 U.S. 200, 202 (1976).

80. *Id.* at 202-03.

81. National Pollutant Discharge Elimination System, 56 Fed. Reg. 40,950, 40,951 (Aug. 16, 1991) (to be codified at 40 C.F.R. pt. 122).

82. Effluent Guidelines Plan, 65 Fed. Reg. 53,008, 53,009 (Aug. 31, 2000).

83. Clean Water Act § 502(11), 33 U.S.C. § 1362(11) (2006).

84. Natural Res. Def. Council, Inc. v. Costle, 568 F.2d 369, 1378 (DC Cir. 2004).

85. Our Children's Earth Found. v. EPA, 527 F.3d 842, 845 (9th Cir. 2008).

86. *See* ROBERT V. PERCIVAL ET AL., ENVIRONMENTAL REGULATION: LAW, SCIENCE, AND POLICY 264 (6th ed. 2009).

87. Chem. Mfrs. Ass'n v. Natural Res. Def. Council, Inc., 470 U.S. 116, 155 (1985) (Marshall, J., dissenting).

To spur new stormwater management practices and realize the corresponding reduction in pollutants discharged, the CWA establishes three different technology-based standards applicable to stormwater discharges. For discharges that existed at the passage of the CWA in 1972, a step-up ELG standard governed. Polluters were required to employ controls meeting a best practicable control technology currently available (BPT) standard by July, 1 1977, and later a best available technology economically achievable standard.[88]

The most stringent standard—in theory, the standard most likely to encourage effective control technology—applies to discharges created after the passage of the CWA in 1972, a classification that includes every future discharge of stormwater from a construction project.[89] The new source pollution standard (NSPS) applicable to ELGs for new discharges is a best available demonstrated control technology (BADT) standard, meaning that the level of control on-site must achieve the pollutant discharge reduction realized using the best available technology.[90]

One variation of the technology-based ELG is the numeric ELG, which requires a permit holder to measure the amount of a specific pollutant discharged and ensure that the level of that discharge does not exceed a predetermined numeric quantity. Numeric limitations are included in NPDES permits for a range of discharges, including municipal storm sewers,[91] coal mining operations,[92] and airports.[93] A numeric standard measures the actual level of pollution discharged from a point source, and, in so doing, ensures that the controls used on-site are in compliance with the technology-based standard applicable to the source, such as the BADT standard for construction sites.[94]

After a slow start, the EPA eventually embraced the use of ELGs as effective enforcement tools, promulgating regulations at a rapid pace. By

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88. Clean Water Act § 301(b), 33 U.S.C. § 1311(b).

89. Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category, 74 Fed. Reg. 62,996, 63,027-28 (Dec. 1, 2009) (to be codified at 40 C.F.R. pt. 450). The EPA grappled with whether an individual construction site should be considered a "new source" subject to a NSPS. In its proposed rule, the EPA concluded that a construction site could not be considered a "new source" because the site itself could not be constructed. However, following the court order to promulgate ELGs and NSPS, the EPA revised its definition of "new source" to include construction activity that commences after February 1, 2010. A construction site avoids NSPS requirements only if construction activity began prior to that date. *Id.*

90. Clean Water Act § 306(a)(1), 33 U.S.C. § 1316(a)(1).

91. *See* City of Abilene v. EPA, 325 F.3d 657 (5th Cir. 2003).

92. *See* Citizens Coal Council v. EPA, 447 F.3d 879 (6th Cir. 2006).

93. *See* Buchholz v. Dayton Int'l Airport, No. C-3-94-435, 1995 WL 811897 (S.D. Ohio Oct. 30, 1995).

94. Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category, 74 Fed. Reg. at 63,024-25.

2000, guidelines had been established for more than fifty industrial categories and regulated effluent from approximately 45,000 facilities.[95] Pollutant reductions resulting from ELGs are arguably significant, with the EPA estimating that the limitations prevent the discharge of more than one billion pounds of toxic pollutants annually.[96]

VI. ISSUES FACING THE CONSTRUCTION STORMWATER PROGRAM

During its two decades of operation, the EPA construction stormwater program has been hampered by two interrelated, persistent issues: slow-moving and cautious EPA regulation and resulting widespread industry noncompliance. More than 82,000 construction firms operate in the United States, and many of these operate on different sites simultaneously.[97] The sheer number of sites to be monitored, paired with infrequent EPA enforcement, has created an industry culture in which under-compliance with NPDES requirements is often the norm. In 1999, in its assessment of the success of Phase I regulations, the EPA found that only about one third of construction sites required to apply for a CGP actually sought coverage under a permit.[98] Additionally, the EPA believed that compliance among permitted builders was poor.[99] The EPA noted that compliance failures likely resulted from a lack of EPA on-site monitoring presence, which is itself a requirement only to the extent that builders subject to an NPDES permit are not required to report their level of compliance to the EPA.[100] Noncompliance is not unique to construction stormwater policy, but instead plagues most stormwater programs as a result of the program's similar lack of measurable requirements and reliance on self-monitoring.[101]

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95. Effluent Guidelines Plan, 65 Fed. Reg. 53,008, 53,009 (Aug. 31, 2000).

96. *Id.* at 53,010.

97. Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category, 74 Fed. Reg. at 63,023.

98. Memorandum from Walker B. Smith, *supra* note 7, at 1 n.2.

99. *Id.* at 1.

100. It should be noted that noncompliance is not necessarily a result of a builder's attempt to skirt regulations. Although the control technologies involved are low-cost and low-tech, a construction site can present a relatively complex control space, depending on the soil type, topography, and levels of precipitation, among other variables. The number of EPA and industry compliance aids highlight this difficulty. *See, e.g.*, *Stormwater Compliance Cards—English and Spanish*, NAT'L ASS'N OF HOME BUILDERS, http://www.nahb.org/generic.aspx?genericContentID=89113 (last visited Feb. 20, 2011).

101. G. Tracy Mehan, III, *Urban Stormwater Management in the United States*, AM. LAW INST. (2009). "EPA's program has monitoring requirements that are so benign as to be of little use for the purposes of program compliance. Most dischargers have no measurable, enforceable requirements. Instead, the stormwater permits leave a great deal of discretion to the regulated community to set their own standards, develop their own pollution control schemes, and to self-

To combat noncompliance, the EPA developed a two-pronged strategy relying on education and outreach programs and a narrow enforcement policy under which well-known market participants were targeted in hopes that any penalty levied against them would convince other noncompliant builders to meet their NPDES obligations.[102] The first target, naturally, was Walmart, which is one of the largest commercial developers in the United States, building more than 200 Walmart, Walmart Supercenter, and Sam's Club stores each year.[103] The government alleged violations relating primarily to inaction by Walmart at twenty-four sites in nine states, including failure to obtain NPDES permits before starting construction, failure to develop plans to control runoff, failure to install adequate sediment and erosion control technologies, and failure to inspect sites.[104] To the EPA, this general indifference toward CWA stormwater requirements, or failure to prioritize compliance with those requirements, resulted from the Agency's failure to encourage compliance effectively.[105] Walmart eventually agreed to pay a $3.1 million civil penalty, implement more effective control technologies at its construction sites, and, most significantly, establish a comprehensive site inspection program that required Walmart to submit a quarterly report to the EPA and state plaintiffs that includes each site inspection report signed by a Walmart construction manager as well as any compliance issues contained in the inspection reports and the actions taken to correct the problems.[106] The reporting provision highlights the EPA's recognition of a common sense principle: a stronger reporting/monitoring relationship between builders and permitting authorities will increase industry compliance.

This targeted litigation strategy was implemented before Phase II regulations became effective, meaning the compliance at those sites disturbing between one and five acres of land, which the EPA estimates

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monitor. Current statistics on the states' implementation of the stormwater program, compliance with stormwater requirements, and the ability of states and EPA to incorporate stormwater permits with pollution limits are uniformly discouraging."

102. Memorandum from Walker B. Smith, *supra* note 7, at 1-2.

103. Press Release, EPA, U.S. Announces Major Clean Water Act Settlement with Retail Giant Wal-Mart (May 12, 2004).

104. *Id.*

105. Memorandum from Walker B. Smith, *supra* note 7, at 1-2.

106. Consent Decree, United States v. Wal-Mart Stores (No. Civ. A. 04-301 GMS, Del., July 28, 2004), *available at* http://www.epa.gov/compliance/resources/decrees/civil/cwa/walmart2-cd.pdf.

includes tens of thousands of projects,[107] was not included in the noncompliance estimations. However, assuming that large builders, those who would typically build above the five-acre threshold, have access to resources and expertise making them more capable of NPDES compliance, there are likely major noncompliance issues involving smaller companies under the EPA's radar.[108]

VII. *NATURAL RESOURCES DEFENSE COUNCIL, INC. V. EPA:* MANDATORY EFFLUENT LIMITATION GUIDELINES

The two major obstacles affecting construction stormwater regulation, industry noncompliance and agency passivity, came face-to-face with the requirements of the CWA in the pivotal 2008 *Natural Resources Defense Council, Inc. v. EPA* (*NRDC*) lawsuit.[109] The Ninth Circuit's holding in *NRDC* initiated the rulemaking process that brought the EPA to its present regulatory crossroads. The suit dealt with a determination of the EPA's obligations under section 304(m) of the CWA. Section 304(m) requires the EPA to identify point source categories for which ELGs have not been created, and, once a category has been identified, to establish the ELGs no later than three years after publication of the report identifying the category for effluent limitations.[110] The three-year promulgation schedule was the result of Congress's continued frustration with the "slow pace" at which the EPA promulgated regulations.[111]

In the March 30, 1999 Federal Register, the EPA stated that it would begin development of ELGs for the C&D industry, specifying that the ELGs would be applicable to both discharges associated with new development and those associated with redevelopment projects.[112] This announcement triggered the section 304(m) process, under which the EPA was now obligated to develop ELGs for the construction industry within three years—by March 30, 2002. That deadline passed, and, instead of establishing ELGs, the EPA in 2004 announced its decision to preserve the existing framework of federal, state, and local controls for

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107. Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category, 74 Fed. Reg. 62,996, 63,024 (Dec. 1, 2009) (to be codified at 40 C.F.R. pt. 450).

108. *Id.*

109. 542 F.3d 1235 (9th Cir. 2008).

110. Clean Water Act § 304(m), 33 U.S.C. § 1314(m) (2006).

111. *NRDC*, 542 F.3d at 1251 (quoting S. Rep. No. 99-50, at 3 (1985)).

112. Effluent Guidelines Plan Update and Notice of Public Meeting, 64 Fed. Reg. 15,158, 15,158 (Mar. 30, 1999).

construction stormwater discharges.[113] The Agency offered several explanations for the decision to maintain the status quo, identifying both the cost imposed on the regulated community and what it expected to be a limited reduction in sediment runoff resulting from the implementation of ELGs for construction stormwater.[114]

Seizing on the EPA's failure to promulgate the ELGs as required by section 304(m), the NRDC brought suit in the Ninth Circuit, seeking a declaratory judgment establishing that the EPA was required by the CWA to promulgate ELGs following its announced intention to do so.[115] The court analyzed section 304(m) under *Chevron, U.S.A., Inc. v. Natural Resources Defense Council, Inc.*[116] and found that the provision was unambiguous and that Congress's intent was clear: "the EPA must promulgate ELGs . . . for the point-source categories it lists in any plan it publishes under § 304(m)."[117] The EPA's argument that the three-year period should be viewed as a planning mechanism, and not as a hard deadline, was dismissed by the court. The court recognized section 304(m) as a tool to combat the EPA's tendency to promulgate ELGs at a slow rate, and concluded that this goal would be "completely frustrated" if section 304(m) did not require actual promulgation within the three-year window.[118] Because it determined that the EPA's duty to promulgate ELGs was nondiscretionary, the court ordered the Agency to comply with the district court's December 1, 2009 deadline for the issuance of effluent limitations for the construction industry.[119]

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113. Effluent Limitations Guidelines and New Source Performance Standards for the Construction and Development Category, 69 Fed. Reg. 22,472, 22,472 (Apr. 26, 2004) (to be codified at 40 C.F.R. pt. 450). Prior to deferring to the existing system, the EPA in 2002 published a list of three potential strategies to regulate stormwater discharge from construction sites. Only one proposed strategy included an ELG component. Effluent Limitations Guidelines and New Source Performance Standards for the Construction and Development Category, Proposed Rule, 67 Fed. Reg. 42,644, 42,644 (June 24, 2002) (to be codified at 40 C.F.R. pts. 122 & 450).

114. Effluent Limitations Guidelines and New Source Performance Standards for the Construction and Development Category, 69 Fed. Reg. at 22,477.

115. *NRDC*, 542 F.3d at 1251.

116. 467 U.S. 837 (1984). The *Chevron* test is a two-step analysis for courts to determine the validity of an agency's interpretation of a statute that it administers. In step one, the court determines whether Congress has directly spoken to the precise question at issue in unambiguous statutory language. If Congress has, then an agency is barred from promulgating a regulation contravening that intent. Under step two, if the statute is silent or ambiguous to the specific issue, the court determines whether the agency's interpretation is based on a permissible construction of the statute. If the agency's interpretation is sufficiently reasonable, and therefore permissible, the court must defer to the agency's interpretation.

117. *NRDC*, 542 F.3d at 1250.

118. *Id.* at 1252.

119. *Id.* at 1250.

VIII. FINAL CONSTRUCTION STORMWATER RULE AND INDUSTRY CHALLENGE

The EPA responded to the court's order in *NRDC* with a decidedly ambitious rule. For the first time, the EPA applied a numeric ELG to construction stormwater, a regulatory mechanism that provides an objective picture of a site's environmental impact to both the builder and permitting authority.[120] All previous C&D stormwater policy, in its entire regulatory lifetime, focused on the types of technology required on-site to control pollutant discharge, never on an actual end-of-pipe measure of an individual site's impact on receiving waters. This numeric addition constituted a major shift in the way EPA approached construction stormwater regulation, and was, in general, a departure from the Agency's historically reluctant attitude towards stormwater regulation.

Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category (December 1 Final Rule) was published in the Federal Register as a final rule on December 1, 2009, the exact deadline established by the district court in *NRDC*.[121] Acknowledging that there were no national performance standards or monitoring requirements for stormwater discharges from construction activities, the EPA characterized the new rule as the first national ELG and NSPS applicable to every construction site subject to NPDES permit requirements.[122] The bulk of the new provisions were technology-based and altogether familiar. C&D dischargers were ordered to reach effluent reductions achievable under a BPT standard in six impact categories, relating principally to erosion controls, sedimentation controls, and pollution prevention measures.[123] The pollution prevention methods included prohibitions against discharges of fuels, oils, cleaning agents, and chemical compounds, identifying specifically those pollutants associated with on-site vehicles.[124] Both small and large construction activities were subject to the rule's provisions.[125] While these provisions are significant in that they apply as a nationwide minimum standard for on-site controls, the requirements were relatively uncontroversial and resembled the requirements of the current CGP.

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120. *See* Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category, 74 Fed. Reg. 62.996, 62,998 (Dec. 1, 2009) (to be codified at 40 C.F.R. pt. 450).

121. *Id.*

122. *Id.*

123. 40 C.F.R. § 450.21 (2010).

124. *Id.* § 450.21(e).

125. *Id.* § 450.11(a). Only C&D projects that disturbed less than one acre were exempt from the rule's provision.

Conspicuous among these familiar provisions was the numeric limitation on turbidity. It is important to remember that the court in *NRDC* required only that the EPA establish ELGs; the Agency could have promulgated exclusively nonnumeric guidelines similar to the rule's sediment and erosion control provisions and satisfied the court's order. Instead, the EPA elected to move regulations a step further and establish a numeric ELG measuring turbidity discharges.[126] Individual states had applied numeric limitations to construction permits, but the rule made the numeric ELG the national standard to be incorporated into every state CGP as well as EPA permits. The turbidity regulation set a daily maximum limitation of 280 nephelometric turbidity units (NTU), which is a measurement of the clarity of water as it leaves a construction site.[127] The rule is somewhat flexible in its use of the daily maximum measure, which uses the average of samples taken during a day to determine whether the turbidity level is below 280 NTU.[128] So, a high NTU reading, potentially tied to a short, violent rainstorm, is permissible as long as it is counteracted by low readings taken during the same day.

The implementation of a numeric limitation is significant for two major reasons. First, it provides builders a means to gauge the actual effectiveness of sediment and erosion controls. By allowing a builder to quantifiably measure the success of its on-site controls, the builder can both determine the effectiveness of current controls and identify control technology or control placement that could be altered to ensure compliance with its NPDES permit. The numeric limitation is not an end unto itself; by complying with the 280-NTU limitation, a builder additionally demonstrates that its on-site control technologies are in compliance with the technology-based requirements for the C&D category.[129] The EPA noted its compliance-minded motivation for including the turbidity ELG, stating that the numeric limitation was "the best way to quantifiably ensure industry compliance" with the CWA.[130]

Second, the EPA is for the first time requiring builders to monitor turbidity levels and then report that data to permitting authorities. The monitoring requirement is such a departure from previous construction stormwater regulation that the EPA characterized the provision as a "sea

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126. *Id.* at § 450.22(a).

127. *Id.*

128. Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category, 74 Fed. Reg. 62,996, 63,048 (Dec. 1, 2009) (to be codified at 40 C.F.R. 450).

129. *Id.* at 63,024-25.

130. *Id.* at 63,024.

change" for industry.[131] Prior to the December 1 Final Rule, the EPA had required only visual inspection of construction discharges in order to satisfy the requirements of a CGP.[132] Under the new rule, the EPA, while leaving the establishment of monitoring and reporting procedures to permitting agencies, expects a permit holder to take at least three samples per day while a discharge event is occurring[133] (in the absence of rain or snowmelt, monitoring is not required) and expects a builder to submit a monthly report to its permitting authority.[134]

In recognition of the regulatory shift imposed by this "sea change," the numeric turbidity ELG was to take effect in a phased four-year rollout.[135] By August 1, 2011, construction activities disturbing twenty or more acres would be required to comply with the ELG; construction activities disturbing ten or more acres would be required to be in compliance by February 2, 2014.[136] The EPA expected the numeric limitation, once it is applied to the full ten-acre threshold, to affect more than 21,000 projects annually on a total of 623,000 acres of land.[137] The rule was in no way a superficial gesture; as issued in the December 1 Final Rule and once extended to the full ten-acre threshold, the EPA estimated that the rule would eliminate the discharge of seventy-seven percent of the pollutants currently discharged by construction sites.[138]

The magnitude of the regulatory shift the new rule represented can be measured by the legal challenges filed shortly after its publication in the Federal Register. The Wisconsin Builder's Association (WBA) and National Association of Home Builders (NAHB) filed suit against the EPA in December 2009, arguing, among other things, that the EPA had failed to consider relevant site data in setting the 280-NTU guideline; the Small Business Administration (SBA) filed a petition that also claimed deficiencies in the data used to set the ELG.[139] Specifically, the industry plaintiffs argued that the EPA based its conclusion that the 280-NTU limit was achievable using passive treatment systems on NTU data

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131. *Id.* at 63,050.

132. *Id.* at 63,047. Monitoring is already required under certain state CGPs, including California, Georgia, Oregon, Vermont, and Washington.

133. *Id.* at 63,048.

134. *Id.* at 63,053.

135. 40 C.F.R. § 450.22(a) (2010).

136. *Id.* In recognition of the degree to which the amount of precipitation controls daily NTU, the turbidity limit did not apply to discharges resulting from a storm event in the same day that is larger than the local two-year, twenty-four-hour storm. *Id.* § 450.22(b).

137. Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category, 74 Fed. Reg. at 63,024.

138. *Id.* at 63,051.

139. EPA's Unopposed Motion, *supra* note 2.

collected from sites that actually employed active treatment systems—a costlier and more complicated method relying on the pumping of stormwater or mechanical filtration.[140] The Agency had quietly conceded as much in the final rule, noting that its analysis was not based on "actual firm-specific data," the standard data basis used when promulgating ELGs.[141] The Agency blamed the short deadline imposed by the district court in *NRDC* for this failure.[142] The WBA additionally argued that the data relied on by the EPA to demonstrate the feasibility of the 280-NTU ELG actually supported a less stringent standard at 800 NTU.[143]

In recognition of this deficiency in on-site passive treatment system data and what it characterized as subsequent improper interpretation, the EPA moved for an order vacating and remanding the numeric ELG back to the agency for eighteen months.[144] The EPA wanted an opportunity to "re-examine" the 280-NTU limit through another round of notice and comment rulemaking to "narrow or eliminate" the basis of industry claims and, if necessary, revise the ELG in order to defend it in court.[145] The balance of the rule, the erosion and sediment controls and pollutant regulations, would remain in effect during the remand. The United States Court of Appeals for the Seventh Circuit granted the EPA's motion on August 24, 2010.[146]

IX. DECISION TIME: CONSIDERING THE NEW RULE AFTER REMAND

With its numeric turbidity ELG remanded, and working under a court order to produce an effluent limitation by a fixed deadline, the EPA finds itself in a familiar position with a familiar issue to address: how should the Agency regulate stormwater discharges from the C&D category? The Ninth Circuit's holding in *NRDC*, coupled with the recent remand, create a defined regulatory space within which the EPA will address C&D stormwater discharges. *NRDC* established one boundary: the Agency is required by the CWA to promulgate some form of ELG to

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140. Brief for Plaintiff at 37-40, Wisc. Builders Ass'n v. EPA, Nos. 09-4113, 10-1247, 10-1876 (7th Cir. July 9, 2010).

141. Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category, 74 Fed. Reg. at 63,033.

142. *Id.*

143. Brief for Plaintiff, *supra* note 140, at 37-38.

144. EPA's Unopposed Motion, *supra* note 2, at 4-5.

145. *Id.* at 5. Numeric limitations are historically vulnerable to industry claims of insufficient support data. *See, e.g.*, Leather Indus. of Am. v. EPA, 40 F.3d 392 (D.C. Cir. 1994) (holding that the EPA had inadequate information to establish numeric limitations on sludge taken to municipal landfills).

146. Order, Wisc. Builders Ass'n v. EPA, Nos. 09-4113, 10-1247, 10-1876 (7th Cir. Aug. 24, 2010).

regulate stormwater discharges from construction activities. The EPA-initiated remand presents the other boundary, which is measured from two possible points. Either the 280-NTU ELG provided in the December 1 Final Rule represents the proper level of regulation, and the requested remand simply provided the EPA an opportunity to cross legal Ts and dot legal Is to ensure that the ELG will survive any future industry attacks, or the 280-NTU limitation is an unfeasible value based on the analysis of inadequate data. In the latter scenario, any numeric turbidity limitation that emerges from the remand will be less restrictive or the EPA will abandon the numeric limitation and return to a nonnumeric standard.

The EPA has several options in reconfiguring the ELG during this remand period. The Agency can choose to: (1) abandon numeric limitations in favor of traditional, nonnumeric technology-based limitations, (2) treat the numeric limitation as a benchmark rather than an obligation, (3) increase allowable daily average NTU, or (4) preserve the rule in its final rule form. Additionally, from a broad perspective, in this ruling the EPA is defining its role in the regulation of construction stormwater: will the Agency take the assertive posture it assumed under the new rule, or will it withdraw itself and leave innovation in stormwater regulation in the hands of state CGPs?

Abandoning a numeric effluent limitation would weaken the EPA's regulatory grip on C&D discharges provided by the numeric ELG. Adopting this strategy would, in many ways, be a practical reversion to construction stormwater regulation before the December 1 Final Rule was issued. In place of the specific 280-NTU limitation, the acceptability of turbidity levels would be determined by a technology-based standard similar to the standards applicable to sedimentation and erosion under the December 1 Final Rule. The monitoring and reporting requirements would likely be vacated, as the data populating the reports—the numeric turbidity measures—would not exist. In the absence of a standard requiring regular site inspections by representatives of the permitting authority, the adoption of a nonnumeric limitation has the potential to continue present levels of noncompliance, which the EPA itself attributed to a lack of agency presence on-site.[147]

A benchmark operates similarly to a numeric ELG. An acceptable numeric level of turbidity is determined, and permit holders are required to keep the daily average turbidity below that limitation. Benchmarks for turbidity have already been incorporated into some state construction

147. Memorandum from Walker B. Smith, *supra* note 7, at 1.

permits, including those of Oregon and Georgia.[148] Unlike a numeric ELG, a daily average exceeding the permissible NTU is not a violation of the builder's NPDES permit. Instead, it would trigger a review process conducted by the permitting authority following notice from the builder of its noncompliance.[149] Benchmarks primarily serve to ensure that a site's SWPPP is successfully implemented.[150] In choosing between a numeric ELG and a benchmark, a permitting authority must consider the consequences and effects on industry compliance. While a benchmark violation initiates administrative review, discharges in excess of a numeric ELG result in civil penalties.[151] A benchmark that includes regular monitoring and reporting requirements has the potential to remedy many of the issues associated with previous C&D regulation if permitting authorities are given timely data allowing them to respond to noncompliance. But, from a motivational standpoint, it is unlikely that a benchmark, with its administrative penalty, will encourage builders to comply with regulations to the extent that a numeric ELG, with its significant civil penalty, can ensure compliance. The goal of the C&D effluent limitation is to increase industry compliance in order to prevent further degradation of receiving waters. The numeric turbidity ELG, as promulgated, is a more persuasive vehicle for that goal than a benchmark limitation.

The EPA's third and fourth options preserve the numeric turbidity ELG at either its proposed 280-NTU level or at a less stringent level allowing a higher daily average NTU. The goal of the EPA in issuing its ELG should be increasing compliance with NPDES permits in order to reduce the discharge of pollutants from construction sites. As evidenced in other areas of environmental regulation, including the successful regulation of sulfur dioxide under the Clean Air Act,[152] once a pollutant is

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148. Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category, 74 Fed. Reg., 62,996, 63,025 (Dec. 1, 2009) (to be codified at 40 C.F.R. pt. 450). Oregon's benchmark is set at a stringent 160 NTU limit, while Georgia determines the permissible numeric limitations based on the size of a construction site in relation to the receiving watershed. *Id.*

149. *Id.* at 63,023.

150. Santa Monica Baykeeper v. Kramer Metals, Inc., 619 F. Supp. 2d 914, 922-23 (C.D. Cal. 2009).

151. Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category, 74 Fed. Reg. at 63,025.

152. 42 U.S.C. § 7401 (2006). Title IV of the Clean Air Act addressed the emission of sulfur dioxide, a contributor to acid rain, in a two-phased cap-and-trade program. Phase I targeted larger power plants and capped emission rates at 2.5 mmBtu. Phase II expanded the pool of facilities subject to SO_2 regulations and capped emissions rates at 1.2 mmBtu, with gradual annual reductions. By 2006, SO_2 emissions had been reduced to 9.4 million tons, meeting the EPA's 9.5 million-ton limit four years ahead of schedule. *See Acid Program 2007 Progress*

regulated pursuant to a specific numeric limitation, future regulations are often able to ratchet down the level of permissible discharge. The CWA allows the EPA, when appropriate, to revise an effluent limitation annually, so the initial limitation in no way determines the eventual scope of regulation.[153] With this in mind, the initial NTU level that the EPA selects may not be as important as the fact that the EPA has established a numeric limitation. From a pollution control perspective, a lower acceptable NTU level is the best regulation, as it would prevent the greatest amount of sediment pollution from entering receiving waters. However, from a long-term regulatory perspective, the most important EPA action is establishing a foothold numeric ELG. As discussed above, the evolution of construction stormwater regulation has been anything but swift, but its trajectory has been a consistent expansion—expanding the scope of its application to include smaller and smaller construction sites and increasing the technology standards for on-site pollution controls. The implementation of an initial numeric limitation is the next logical regulatory action. For this reason, the EPA should prioritize the promulgation of some form of numeric ELG for turbidity and then focus on reducing the level of permissible turbidity through further regulation.

In many ways, turbidity is the ideal pollutant to serve in the EPA's numeric ELG pilot program. Turbidity can be measured on-site and relatively inexpensively[154] with a handheld turbidimeter, whereas another pollutant considered a candidate for numeric limitations, total suspended solids, requires off-site laboratory analysis.[155] The use of handheld testers provides builders the additional advantage of offering an immediate, real-time picture of the effectiveness of control technologies in their SWPPP. Also, as a so-called indicator pollutant because of the additional pollutants often absorbed by or comingled with turbidity-causing sediments, a measurement of turbidity provides a statement of the general water quality of a discharge; efforts to minimize turbidity will necessarily have a minimizing effect on these associated pollutants. In this sea change period, turbidity provides a relatively builder-friendly measure to ease the transition. A numeric turbidity ELG is essential as both a means for builders to gauge the effectiveness of on-site controls,

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Report, EPA, http://www.epa.gov/airmarkt/progress/arp07.html (last visited Apr. 9, 2011); THE CLEAN AIR ACT HANDBOOK 426-28 (Robert J. Marineau, Jr. & David P. Novello eds., 2004).

153. Clean Water Act § 304(b), 33 U.S.C. § 1314(b) (2006).

154. At the time of this writing, February 2011, a product search for handheld turbidimeters yields results ranging in price from approximately $700 to $1000. One turbidimeter can be used to monitor simultaneous builds as well as on subsequent projects.

155. Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category, 74 Fed. Reg. at 63,020.

alerting them to needed control adjustments, and for permitting authorities to measure industry compliance and initiate enforcement actions as necessary. When the EPA reissues its C&D ELG in 2012, the best interests of the NPDES program and CWA will be served by maintaining a numeric ELG for turbidity.

X. CONCLUSION

In promulgating the December 1 Final Rule, the EPA took a significant step towards preventing the discharge of pollutants into the nation's waters. By requiring builders to comply with a numeric effluent limitation for turbidity, the EPA both offered the industry a way to gauge, in real time, the effectiveness of their on-site control technologies and provided permitting authorities a channel to monitor construction sites to ensure that builders are in compliance with NPDES permit requirements. Both effects promote the CWA's vision of unpolluted American waters. The EPA should therefore reinstitute a numeric effluent limitation.