

# PERSPECTIVES

on Georgia's Environment

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## Overview of EPA's Proposed Coal Ash Rule: Major Requirements and Industry Reactions

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On June 21, 2010, EPA proposed new rules, entitled "Hazardous Waste Management System: Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals from Electric Utilities" ("CCR Proposed Rule").<sup>1</sup> If adopted, these rules will regulate Coal Combustion Residuals (CCR)<sup>2</sup> under the Resource Conservation and Recovery Act (RCRA) for the first time. According to EPA, it proposed these rules "to address the risks from the disposal of CCRs generated from the combustion of coal at electric utilities and independent power producers."<sup>3</sup> The proposed rules apply to "all [CCRs] generated by electric utilities and independent power producers" and exclude "the placement of CCRs in minefills."<sup>4</sup>

In the CCR Proposed Rule, EPA requested comment on two different options—(1) Subtitle C hazardous waste regulation ("Subtitle C option"), and (2) Subtitle D non-hazardous, solid waste regulation ("Subtitle D option").<sup>5</sup> Additionally, EPA requested comment on its Subtitle "D Prime" option, a variation of the Subtitle D option ("Subtitle D Prime option"). While this article cannot provide in-depth analysis on every aspect of the proposed rules or on the many and varied arguments for and against EPA's proposal, the article provides a brief overview of the history of CCR regulation and outlines several major requirements under each of the proposed options.<sup>6</sup>

### Previous CCR Regulation and Catalyst for Proposed Rulemaking

Congress passed the RCRA Beville Amendment to address its concern that EPA may discourage using coal as a main source of energy generation in the United States. The sponsor of the amendment, Congressman Beville, explained that the amendment was to "encourage development of coal as a primary domestic source of energy, avoid unnecessary inflationary impact, and focus the efforts of [EPA] in implementing [RCRA] toward activities truly necessary to protect public health and the environment."<sup>7</sup> EPA was required to base its decision "on information developed or accumulated pursuant to [a] study, public hearings, and comment."<sup>8</sup>

In accordance with the Beville Amendment, EPA performed the required studies and reported to Congress. In its 1993 Regulatory Determination and 2000 Final Regulatory Determination, EPA determined that CCRs did not warrant hazardous waste regulation.<sup>9</sup> EPA stated, "We believe that subtitle D regulations are the most appropriate mechanism for ensuring that these wastes disposed in landfills and surface impoundments are managed safely."<sup>10</sup>

EPA is "revisiting" those decisions with its CCR Proposed Rule. EPA concedes that a major catalyst for proposing its current rulemaking was the December 22, 2008, failure of the Tennessee Valley Authority dike in Kingston, Tenn..<sup>11</sup>

### Estimates of Cost Provide an Extreme Range

EPA estimates that the annual industry-wide costs for compliance with its proposed rulemaking would be \$1.7 billion for the Subtitle C option; \$587 million for the Subtitle

## Contents

OSAH Reporter.....	6	EPA Initiating Rule Changes on Federal Water Quality Standard Regulations.....	22
Georgia's Red Clay: A Scientific and Regulatory Overview .....	8	2011 Newsletter Editorial Board.....	25
NEDC v. Brown – Abrogation of the Clean Water Act's Silvicultural Rule?.....	16	2011 Environmental Law Section Officers .....	25

D option; and \$236 million for the Subtitle “D Prime” option.<sup>12</sup> Industry estimates, however, are significantly higher. For example, according to the Utility Solid Waste Activities Group’s (USWAG)<sup>13</sup> estimates for total, non-annualized compliance costs, the Subtitle C option would cost “in the range of at least \$55.3 to \$74.5 billion, which is nearly three to four times EPA’s projected Subtitle C compliance costs of approximately \$20.3 billion.”<sup>14</sup>

## Common Requirements of Proposals

EPA’s proposed rulemaking provides several common elements between the Subtitle C and D options, including requirements for dam safety, groundwater monitoring, and liners and leachate collection.

## Dam Safety and Groundwater Monitoring

Under either alternative, EPA proposes to establish dam safety requirements in order to “address the structural integrity of surface impoundments to prevent catastrophic

releases,”<sup>15</sup> such as that of the TVA Kingston, Tenn., spill. Both options would also require groundwater monitoring in order to provide early detection of any groundwater contamination.<sup>16</sup>

## Liners and Leachate Collection

Both the Subtitle C and Subtitle D options would require liners and leachate collection systems for new disposal units (both surface impoundments and landfills) and lateral expansions of existing units and would require existing surface impoundments to dredge and install composite liners.<sup>17</sup> Additionally, both options require that if existing surface impoundments are not dredged and appropriate liners installed within five years, the impoundments must stop receiving CCRs within those five years and be completely closed within two additional years. However, there is an additional requirement (applicable to impoundments not dredged and lined) that may prevent utilities from receiving that full seven-year window in which to completely close: impoundments must complete closure within 210 days after discontinuing receipt of CCRs, irrespective of the seven-year closure requirement.<sup>18</sup>

## Subtitle C Option

In its first proposal, the Subtitle C option, EPA would have direct federal enforcement and would require states to adopt the rule. The rule would take effect in a particular state six months after the appropriate state regulatory authority promulgates the rule.<sup>19</sup> EPA would regulate CCRs destined for disposal as “special waste” under RCRA’s Subtitle C hazardous waste regulations by listing CCRs as a hazardous waste.<sup>20</sup> Such Subtitle C regulation would reverse EPA’s 1993 and 2000 Final Regulatory Determinations, in which EPA determined that Subtitle C regulation was unwarranted and that Subtitle D regulation was most appropriate.<sup>21</sup>

Subtitle C regulation would impose hazardous waste regulation on CCRs from the time CCRs are generated to the time of disposal. Subtitle C regulation would “apply to persons who generate, transport, treat, store or dispose of such waste and establish rules governing every phase of the waste’s management from its generation to its final disposition and beyond.”<sup>22</sup> Accordingly, facilities producing CCRs would be required to “obtain permits for the units that dispose of, treat, or, in many cases, store, CCRs.”<sup>23</sup>

Importantly, RCRA Subtitle C does not provide for a de minimis release exception. Rather, any material, regardless of how small, that is derived from a listed hazardous waste is subject to Subtitle C regulation.<sup>24</sup> Therefore, facilities producing CCRs may be subjected to liability for even those small releases that cannot be prevented.

## Beneficial Reuse Exempted

Under EPA’s proposed Subtitle C option, those CCRs that are beneficially reused, as opposed to disposed, would



not be regulated as hazardous waste.<sup>25</sup> Importantly, though, EPA has not clearly indicated at which point in the process the determination is made regarding whether CCRs will be beneficially reused or whether they will be disposed—the very consideration necessary in order to determine whether particular CCRs would be regulated as hazardous.

### Subtitle D Option

Unlike the Subtitle C option, the Subtitle D option “would not regulate the generation, storage or treatment of CCRs prior to disposal.”<sup>26</sup> Subtitle D regulation would also not require federal permits.<sup>27</sup> The Subtitle D option would require implementation within 180 days after EPA promulgates its final rule—a shorter timeframe than that predicted for the Subtitle C option.<sup>28</sup>

### Subtitle D “Prime” Option

EPA is also considering an option entitled “D Prime.” This option is identical to the Subtitle D option, except it would not require existing surface impoundments to retrofit with liners and would not require closure. Instead, so long as they are protective of human health and the environment,<sup>29</sup> existing surface impoundments could “continue to operate for their useful life.”<sup>30</sup>

### Industry Views

Industry has voiced strong opposition to EPA’s proposed rulemaking, particularly to the Subtitle C option, and an overall support for the Subtitle D Prime option. While an array of arguments was posted to the EPA docket during the comment period, several recurring arguments are noteworthy.

### Unrealistic Timeframes

A major industry concern is that under both the Subtitle C and Subtitle D options, the timeframes for meeting the design and operating standards are unrealistic. USWAG explains that “even if sufficient manpower/equipment is available, some owners/operators will simply be unable to close their disposal units in the timeframes EPA proposes, due to the size of certain CCR impoundments and landfills.”

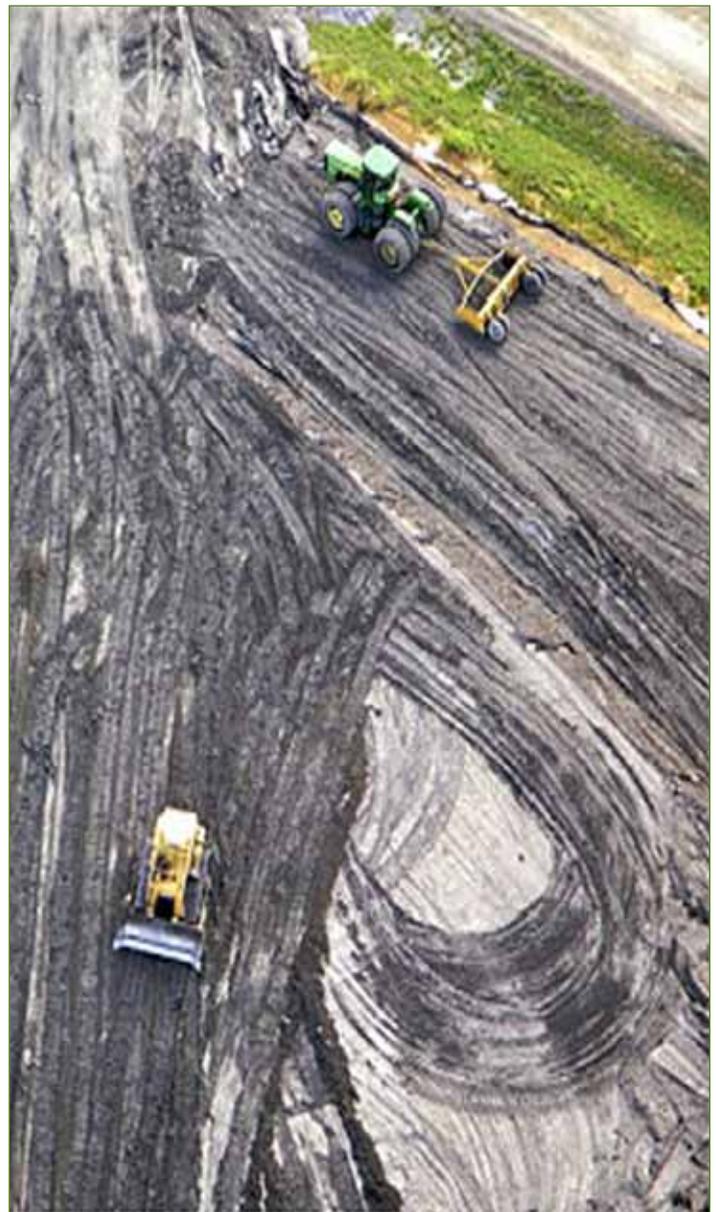
### Disposal Capacity Shortfalls

Another major concern of the Subtitle C option is, as EPA recognizes, “the very large volume of CCR material involved, and how it could overwhelm existing subtitle C disposal capacity.”<sup>31</sup> “[A]pproximately two million tons of hazardous waste are disposed of annually in hazardous waste landfills,” and the current amount of CCRs disposed of through land disposal and surface impoundments is approximately 75 million. Therefore, it is problematic that the national hazardous waste landfill capacity is only between 23.5 and 30.3 million tons – less than one year of national CCR disposal.<sup>32</sup> Furthermore, there are only twenty-one permitted commercial hazardous waste

disposal facilities in the entire United States<sup>33</sup> and many are substantial distances from the facilities generating CCRs.

The White House Council on Environmental Quality (CEQ) stated that adding CCRs to the hazardous waste system would add approximately “130 million tons per year to [the approximate 2.5 million tons of hazardous waste disposed of annually],” which would cause some facilities “to shut down temporarily, or permanently, due to the lack of viable hazardous waste disposal options.”<sup>34</sup> Furthermore, the Association of State and Territorial Solid Waste Management Officials (ASTSWMO) estimated:

Assuming all CC[Bs] will be disposed in commercial Subtitle C landfills, the 2013 capacity will be exhausted within 3 months. Even if beneficial use continues at its current rate, the 2013 capacity will be exhausted in less than 6 months. In the unlikely event that beneficial use continues at its current rate *and* half of the coal fired utilities seek



Subtitle C permits for the disposal facilities that they manage, the 2013 capacity will be consumed in less than one year.<sup>35</sup>

## Site-Specific Determinations and Alternative Liners

Another industry concern is that EPA's composite-liner requirement, under both the Subtitle C and Subtitle D options, does not allow for site-specific determinations and alternative liners. Industry argues that in many cases liners are not necessary in order to protect human health and the environment and that where liners are, in fact, necessary, alternative liners will provide more than adequate protection.<sup>36</sup>

## Beneficial Reuse

Perhaps the most recurring argument in the docket opposing Subtitle C regulation of CCRs is that regulating CCRs as a hazardous waste will diminish, if not completely eliminate, the beneficial reuse market.

As general background, "In 2008, nearly 37% (50.1 million tons) of CC[B]s were beneficially used . . .,"<sup>37</sup> including in such applications as concrete, cement, and wallboard.<sup>38</sup> EPA has noted, "Beneficially using CC[B]s as a substitute for industrial raw materials contributes (a) \$4.89 billion per year in energy savings, (b) \$0.081 billion per year in water savings, (c) \$0.239 billion per year in GHG (i.e., carbon dioxide and methane) emissions reduction, and (d) \$17.8 billion per year in other air pollution reduction."<sup>39</sup>

EPA asserts that the Subtitle C option may increase CCR beneficial use<sup>40</sup> because driving up the cost of CCR disposal under the Subtitle C option would force utilities to beneficially reuse more CCRs.<sup>41</sup> EPA also asserts that any stigma resulting from Subtitle C regulation will be "significantly reduce[d]" by listing CCBs as a "special waste" under RCRA's hazardous waste regulations.<sup>42</sup> Industry, on the other hand, asserts that EPA's "special waste" designation will not alleviate such stigma and will have the same result as simply calling CCRs a "hazardous waste."

In reality, materials that are "hazardous waste listed or identified" under RCRA Subtitle C are subject to the statute.<sup>43</sup> As EPA acknowledges, "Wastes listed as special wastes will generally be subject to the same requirements under RCRA subtitle C and CERCLA as are hazardous wastes."<sup>44</sup> Thus, EPA's "special waste" designation does not alleviate the stigma of Subtitle C listing by terming CCBs "special waste." Tom Adams, Executive Director of the American Coal Ash Association (ACAA), testified before the House Subcommittee on Rural Development, Entrepreneurship and Trade, to the following:

Many in the concrete industry do not believe EPA's assertion that the exemption would provide all the

protection needed. Many do believe that a lawyer could make a simple argument to a jury that the fly ash in the disposal facility has exactly the same physical and chemical characteristics as the fly ash in the concrete in a home, hospital, daycare center, or school. Therefore if it is hazardous in the disposal facility, it must be hazardous in those structures thereby opening the door to financial claims. Even if a claim is found to be minimal, the costs of legal defense are something firms want to avoid.<sup>45</sup>

## What Industry Wants

Industry fully recognizes the impact that will be caused by any of the options presented by EPA's three proposed options. If EPA imposes RCRA CCR regulation, industry seems to support a modified Subtitle D Prime option as most appropriate. Industry emphasizes that Subtitle D provides necessary safeguards, many that are the exact requirements as EPA's Subtitle C option, while avoiding the unnecessary additional costs and compliance burdens posed by Subtitle C regulation. Industry also advocates for state-implementation of any CCR regulatory program, so as to avoid unnecessary and costly overlap between state and federal enforcement and the ability to consider site-specific conditions as opposed to an across-the-board approach.

## Now What?

EPA's public comment period closed on November 19, 2010. The next step in the administrative process will be EPA's promulgation of a final rule, which will also be published in the Federal Register. The exact time for this release is not clear. EPA notes on its website, "EPA understands the need to move quickly to address the environmental and public health concerns posed by coal ash. . . . EPA will need to fully evaluate all of the information and comments it receives on this proposal and will consider all of this information in making a final Agency decision."<sup>46</sup>

### (Endnotes)

- 1 75 Fed. Reg. 35128 (June 21, 2010)
- 2 EPA defines Coal Combustion Residuals as "fly ash, bottom ash, boiler slag . . . , and flue gas desulfurization materials . . . that were generated from processes intended to generate power." *Id.* at 35128, 35137. EPA explains CCRs can be "managed in either wet or dry disposal systems." *Id.* "In wet systems, materials are generally sluiced via pipe to a surface impoundment. The material can be generated wet, such as FGD, or generated dry and water added to facilitate transport (*i.e.* sluiced) through pipes. In dry systems, CCRs are transported in its dry form to landfills for disposal." *Id.*
- 3 *See* 75 Fed. Reg. at 35128.
- 4 *Id.* at 35129. EPA notes that the U.S. Department of

- Interior and EPA will address management of CCRs in minefills in separate regulatory action. Id.
- 5 Id. at 35128.
- 6 For an in-depth analysis of the proposed rules and industry reactions, see EPA's docket for Docket ID No. EPA-HQ-RCRA-2009-0640, *available at* <http://www.regulations.gov/search/Regs/home.html#searchResults?N=0&Ne=11+8+8053+8098+8074+8066+8084+1&Ntk=All&Ntx=mode+matchall&Ntt=EPA-HQ-RCRA-2009-0640>.
- 7 126 Cong. Rec. 3361 (1980).
- 8 § 3001(b)(3)(C); 42 U.S.C. § 6921(b)(3)(C).
- 9 65 Fed. Reg. 32214 (May 22, 2000); 58 Fed. Reg. 42466 (Aug. 9, 1993).
- 10 65 Fed. Reg. at 32214, 32221.
- 11 Id. The failure resulted in the release of approximately 5.4 million cubic yards of fly ash into a branch of the Emory River. After the dike's failure, EPA began inspection of ash ponds around the nation, and ultimately, EPA issued the CCR Proposed Rule.
- 12 75 Fed. Reg. at 35213.
- 13 In its comments, USWAG described itself as follows: USWAG is an association of over one hundred and ten utilities, utility operating companies, energy companies, and associations, including the Edison Electric Institute ("EEI"), the American Public Power Association ("APPA"), and the National Rural Electric Cooperative Association ("NRECA"). Comments of USWAG, Docket No. EPA-HQ-RCRA-2009-0640 (Nov. 19, 2010) [hereinafter "USWAG Comments"] at 1.
- 14 USWAG Comments at 8, 71 (citing EPRI, 2010, Cost Analysis of Proposed National Regulation of Coal Combustion Residuals from the Electric Generating Industry, EPRI, Palo Alto, CA: 2010. 1022296 at 4-1); 75 Fed. Reg. at 35213.
- 15 Id. at 35128.
- 16 Id. at 35246 (proposed 40 C.F.R. § 257.90).
- 17 See 75 Fed. Reg. at 35343-45 (proposed 40 C.F.R. §§ 257.70-.72).
- 18 Id. at 35253 (proposed 40 C.F.R. § 257.100(j) - (k)).
- 19 Id. at 35188. Specifically, the rule would become effective "six months after promulgation of the federal rule in States and other jurisdictions where EPA implements the hazardous waste program (Iowa, Alaska, Indian Country, and the territories, except Guam) and in authorized States, six months after the State promulgates its regulations that EPA has approved via the authorization process (unless State laws specify an alternative time)." Id.
- 20 Id. at 35166.
- 21 Id. at 35128.
- 22 Id. at 35135.
- 23 Id. at 35133.
- 24 See 40 C.F.R. § 261.3(c)(2).
- 25 Id. at 35166.
- 26 75 Fed. Reg. at 35134.
- 27 Id. Note that a major argument raised by industry is that EPA has understated its enforcement authority under the Subtitle D option. See, e.g., USWAG Comments Part XI.D.
- 28 75 Fed. Reg. at 35195.
- 29 Id. at 35244 (proposed 40 C.F.R. § 257.71(g)).
- 30 Id. at 35134.
- 31 d. at 35158.
- 32 Id.
- 33 Data from Environmental Health and Safety Online, *available at* <http://www.ehso.com/cssepa/tsdf/landfills.php>
- 34 Interagency Working Comments on Draft Rule under EP 12866 at 17. The statement of the CEQ reflects the fact that existing landfills and surface impoundments do not meet the proposed hazardous waste liner requirements and will not be able to simply "obtain interim status and convert to RCRA Subtitle C status." 75 Fed. Reg. at 35158. Conversion to dry ash handling, collection, and disposal would likely be necessary unless new wet disposal facilities were permitted and constructed.
- 35 ASTSWMO, FEDERAL REGULATION OF DISPOSAL OF COAL COMBUSTION WASTE FROM COAL FIRED POWER PLANTS: COST ISSUES AFFECTING STATE ENVIRONMENTAL PROGRAMS 6 (2009), [http://astswmo.org/files/resources/CCW/ASTSWMO\\_CCW\\_PhaseII\\_Survey\\_Report.pdf](http://astswmo.org/files/resources/CCW/ASTSWMO_CCW_PhaseII_Survey_Report.pdf) [hereinafter "ASTSWMO Phase II Survey Report"] at 6.
- 36 See, e.g., USWAG Comments at 182.
- 37 75 Fed. Reg. at 35156,
- 38 See id. at 35162.
- 39 Id. at 35155.
- 40 Id. at 35185-87.
- 41 Id. at 35187.
- 42 Id.
- 43 See, e.g., RCRA §§ 3004(a), 3005(a) (stating EPA must establish regulations for and require permits for treatment, storage, or disposal of "hazardous waste identified or listed under this subchapter").
- 44 75 Fed. Reg. at 35136.
- 45 Statement of Thomas H. Adams, Executive Director, American Coal Ash Association, before the House Small Business Subcommittee on Rural Development, Entrepreneurship and Trade (July 22, 2010) (Doc. No. EPA-HQ-RCRA-2009-0640-0075); see also Testimony of Craig H. Benson, PhD, PE, DGE, Wisconsin Distinguished Professor, University of Wisconsin-Madison, before the House Small Business Subcommittee on Rural Development, Entrepreneurship and Trade (July 22, 2010); Testimony of William H. Gehrmann, President, Headwaters Resources, Inc., before the House Subcommittee on Rural Development, Entrepreneurship and Trade Committee on Small Business (July 22, 2010).
- 46 EPA, Frequent Questions: Coal Combustion Residues (CCR) - Proposed Rule, *available at* <http://www.epa.gov/osw/nonhaz/industrial/special/fossil/ccr-rule/ccrfaq.htm#8> (last visited Nov. 30, 2010).

# OSAH Reporter

By John C. Bottini, Esq., King & Spalding, Atlanta.

## Water Permitting

*Upper Chattahoochee Riverkeeper, Inc. v. F. Allen Barnes, Director, Environmental Protection Division*, Docket No. OSAH-BNR-WQC-1107476-60-Miller. On Dec. 8, 2010, Administrative Law Judge Kristin L. Miller resolved cross-motions for summary determination in the appeal of an NPDES permit issued to Forsyth County for the combined discharge from the County's Fowler and Shakerag Wastewater Reclamation Facilities (the "Fowler/Shakerag WRF").

Five of the six counts were based on alleged violations of Georgia's "antidegradation" rule, which was amended in 2005 to mirror federal regulations. The rule prohibits the degradation of "high quality waters" — a designation that EPD has applied to all Georgia waters — absent satisfaction of certain requirements: (1) EPD must find that "a lowering of water quality is necessary to accommodate important social and economic development;" (2) EPD must find that effluent limits in the permit are sufficient to protect all existing uses; and (3) EPD must demonstrate that "there shall be achieved the highest statutory and regulatory requirements for all point sources."

As to the first, EPD's policy has been to focus on the need to approve a new or expanded discharge. Because EPD believes that any new or expanded discharge will result in "a lowering of water quality" to some extent, EPD has treated this as a binary determination to be answered by providing evidence that additional wastewater capacity is needed and by ruling out the "no-discharge" alternative (usually land application). Miller concluded, however, that it is not enough to show that "a lowering of water quality is necessary." Instead of focusing on the necessity for allowing a new or expanded discharge, Miller determined that the inquiry should focus on the necessity for allowing the specific level of degradation authorized by the permit. Adopting recommendations provided by EPA in 2005 (but rejected at the time by EPD), Miller indicated that this demonstration will require an alternatives analysis to assess different treatment technologies. This analysis will be the focus of an evidentiary hearing in the next stage of the case.

As to the remaining substantive requirements of the antidegradation rule, Miller dismissed the Petitioner's claims that the discharge will interfere with swimming in the Chattahoochee River and that EPD had failed to show that "there shall be achieved the highest statutory and regulatory requirements for all point sources." The Petitioner had argued that the latter requirement required EPD to impose effluent limitations at least as stringent as the most stringent limitations contained in any other permit issued by EPD.

In addition to challenging the permit under Georgia's antidegradation rule, the Petitioner also alleged that the NPDES permit was invalid under the State's "anti-backsliding" regulations, which incorporate federal regulations by reference. These regulations prevent the renewal, reissuance, or modification of an NPDES permit which contains effluent limitations less stringent than those in the previous permit. Judge Miller held that the anti-backsliding regulations did not apply to Forsyth County's permit. Judge Miller concluded that because the permit at issue was for a new facility, located at a new location, and with a new discharge point, the facility's permit was a "new permit" that was not subject to the anti-backsliding regulations.



*Altamaha Riverkeeper, Inc., et al. v. F. Allen Barnes, Director, Environmental Protection Division*, Docket Nos. OSAH-BNR-WQC-1031706-98-WALKER, OSAH-BNR-WW-1031708-98-WALKER. On July 23, 2010, Administrative Law Judge Ronit Z. Walker addressed cross-motions for summary determination in consolidated cases challenging both the NPDES and surface water withdrawal permits issued for Plant Washington, an 850 MW coal-fired power plant to be built by Power4Georgians, LLC (“P4G”) in Washington County.

The Petitioners moved for summary determination as to three challenges to the NPDES permit. In Counts I and IV of the Petition, Petitioners alleged that the effluent limitations in the NPDES permit fail to comply with the temperature and pH water quality standards, respectively. Walker denied Petitioners’ motion for summary determination on these counts, noting that temperature and pH water quality standards apply to the receiving waters, not to the permitted discharge itself. Walker also dismissed Petitioners’ claim that the NPDES permit does not comply with both substantive and procedural requirements of Georgia’s antidegradation rule. The Court held that Petitioners had failed to properly suggest permit conditions or limitations that would cure any substantive violation of the antidegradation rule. Walker held that Petitioners’ procedural claim — that EPD had issued the NPDES permit without a requisite antidegradation finding — was not supported by the undisputed facts. Judge Walker did, however, grant summary determination on Petitioners’ claim that the NPDES permit inappropriately allowed the use of an internal monitoring point (an outfall to an on-site equalization basin) without setting forth a supporting justification in the fact sheet that accompanied the permit, as required by applicable law.

The Petitioners likewise moved for summary determination on a number of their challenges to the surface water withdrawal permit. The Petitioners’ motion was denied on two counts, on account of the existence of material issues of fact, but was granted as to Petitioners’ claim that EPD had authorized an interbasin transfer without complying with applicable procedures. The interbasin transfer claim raised an issue of first impression in Georgia: whether the withdrawal of water from one river basin for use by a facility located in a different river basin constitutes an “interbasin transfer,” even if the water not consumed by the facility is returned to the original basin. Walker relied on the plain language of Georgia’s Water Quality Control Act and Comprehensive State-wide Water Management Plan to conclude that the permitted withdrawal for consumption in a neighboring river basin met the definition of “interbasin transfer,” regardless of whether the unconsumed water was returned to the basin of origin. Accordingly, Walker held that EPD was required to comply with the procedural requirements for interbasin transfers set forth in the Water Quality Control Act prior to issuing the surface water withdrawal permit.

Walker granted summary judgment in favor of P4G and EPD on Petitioners’ claim that the surface water withdrawal permit was inconsistent with common law notions of reasonable use of riparian property rights. The Court held that the permitted water withdrawal was governed by statute and rule, not by common law, and in any event, the Petitioners had failed to allege that the permitted withdrawal would impair the riparian property rights of others. Finally, Walker granted P4G’s and EPD’s motion to dismiss Petitioners’ challenge to the permitted non-depletable flow, on the ground that Petitioners failed to allege what non-depletable flow they believed would be sufficient to accommodate all present and future downstream users. The Petitioners subsequently filed an amended challenge to the non-depletable flow, specifically stating what non-depletable flow amount they believe is required to protect potential downstream users under the surface water withdrawal permit.

Pursuant to a consent order proposed by all parties, both the NPDES and surface water withdrawal permits were remanded to EPD for further permitting proceedings consistent with Judge Walker’s order.

## Air Permitting

*Fall-Line Alliance for a Clean Environment, et al. v. F. Allen Barnes, Director, Environmental Protection Division*, Docket No. OSAH-BNR-AQ-1031707-98-WALKER. On Dec. 16, 2010, Administrative Law Judge Ronit Z. Walker reversed the issuance of an Air Quality Permit to P4G for the construction and operation of Plant Washington. The Petitioners challenged the sufficiency of EPD’s best available control technology (“BACT”) emission limitation for sulfuric acid mist, the applicant’s air dispersion modeling for particulate matter, and EPD’s maximum achievable control technology (“MACT”) analyses for several categories of hazardous air pollutants (“HAPs”). After a 10-day evidentiary hearing, Walker denied Petitioners’ challenge to the permit’s sulfuric acid mist BACT emission limitation, the air dispersion modeling claim, and the claim that the permit was required to contain individual MACT emission limitations for dioxin/furans. Walker did agree with the Petitioners that EPD had failed to properly set the MACT emission limitations for non-mercury metal HAPs (via the surrogate filterable particulate matter) and organic HAPs (via the surrogate carbon monoxide), and thus reversed the permit on these two grounds. The specific error Walker found in EPD’s MACT analysis concerns the “MACT floor” requirement, which provides that a MACT emission limitation be no less stringent than the “level of control achieved in practice by the best controlled similar source.” Walker held that EPD erred in setting the MACT floors by placing too much reliance on permitted emission limitations, as opposed to stack test results, as an indicator of what “level of control” other facilities had “achieved in practice.”

# Georgia's Red Clay: A Scientific and Regulatory Overview

by Sara N. Blankenship

## Introduction

When it rains in many parts of Georgia, the streams and rivers run orange as small particles of clay adhere to the passing water molecules.<sup>1</sup> These “colloidal clay” particles have proven difficult to address in Georgia’s Erosion and Sedimentation and Stormwater Management programs because the particles do not settle out of suspension and are not easily contained or captured and removed by standard best management practices. Yet the harm that colloidal clay particles cause ecologically, aesthetically, and economically to Georgia’s rivers and streams is significant.

This article presents a scientific and regulatory overview of colloidal clay. Part I explains the physical and chemical properties of colloidal clay, the harm it can cause to aquatic environments, and its economic impact. Part II explains: (A)

the existing regulatory framework for addressing colloidal clay; (B) the most effective and commonly used best management practices to combat the harm caused by colloidal clay; and (C) additional steps Georgia could take to protect state waters.

## Scientific Overview

Soil colloids are the smallest type of suspended sediment particle, generally measuring less than 10 microns.<sup>2</sup> One type of soil colloid, colloidal clay, is a particle of clay that has been broken down to the extent that it cannot break down any further.<sup>3</sup> The presence of colloidal clay, as well as other substances such as phytoplankton, bacteria and dissolved organic matter in water results in a high level of total suspended solids (TSS). Turbidity due to colloidal clay or larger, suspended clay particles frequently occurs in soft (low alkalinity), poorly-buffered waters.<sup>4</sup> The most common source of colloidal clay turbidity is runoff from clear-cut watersheds and construction.

Waters affected by sedimentation can be monitored by measuring settleable solids, TSS, and turbidity. Settleable solids are those that are heavy enough to naturally settle out of suspension in still water. TSS is a measurement of the total mass of suspended particles in water. TSS is measured by filtering a water sample and weighing the solids on a filter. Turbidity is also a measurement of the amount of suspended particles in a water; however it measures how clear the water appears. The greater the amount of TSS in water, the murkier or muddier the water appears and the higher its measured turbidity.<sup>5</sup> Turbidity is measured in terms of light penetrability, and is often reported in nephelometric turbidity units (NTUs). Georgia’s Erosion and Sedimentation Act (E&S Act) defines NTUs as “[n]umerical units of measure based upon photometric analytical techniques for measuring light scattered by finely divided particles of a substance in suspension.”<sup>6</sup> Thus, the cloudier the water, the higher NTU reading it will have.

Turbidity reduces the amount of sunlight that can penetrate the water, impairing primary production such as algal growth.<sup>7</sup> This lack of photosynthesis in the water affects the amount of oxygen in the water, which can then affect the populations of fish and other aquatic species. Oxygen levels can even reach critically low levels making aeration of the impaired water necessary if aquatic life is to be sustained.<sup>8</sup> The reduced light penetration also affects the predator-prey balance in the ecosystem by limiting sight-feeding predator species’ vision.<sup>9</sup>



Very high levels of turbidity can also adversely affect fish by clogging their gills and impairing respiration. This problem is often compounded when pollutants such as fertilizers and pesticides, which are hydrophobic and therefore not attracted to water molecules, readily attach to the colloidal clay. This results in the fish also having very high levels of toxicity.<sup>10</sup> The affected fish also may suffer from reduced rates of reproduction.<sup>11</sup>

Colloidal clay molecules are hydrophilic, meaning that they are attracted to water molecules and can therefore stay in suspension *indefinitely*. Colloidal clay particles are also negatively charged ions (anions) and thus attract positively charged ions (cations).<sup>12</sup> Hydrophobic pollutants, such as fertilizers and pesticides, are frequently cations and thus readily bind to colloidal clay. When clay particles become surrounded by positively charged ions, the particles repel each other and do not become heavy enough to precipitate out.<sup>13</sup> Therefore, removal of these pollutants is very difficult.

Poorly managed agricultural and construction activities cause the highest rates of erosion and sedimentation, with construction activities being the most detrimental.<sup>14</sup> Most of the pollution from construction activities is in the form of suspended solids due to soil erosion.<sup>15</sup> In fact, “construction phases can produce far higher loads of solids and pollutants in the soil, like phosphorous, than in any finished land use.”<sup>16</sup> In 2002, the Georgia Soil and Water Conservation Commission reported that, “forested lands lose an average of 0.36 metric tons [of soil], agriculture sites lose an average of 5.5 metric tons, and construction sites lose an average of 73.3 metric tons per year.”<sup>17</sup> In 1997, the Environmental Protection Agency (EPA) found that soil erosion is the largest contributor to non-point source pollution in the United States, and in 2000, concluded that “soil loss from construction sites can be 20 times that of agricultural lands.”<sup>18</sup>

Soil erosion and runoff from construction and agricultural sites results in downstream turbidity and an increase in petroleum hydrocarbons from the use of large machinery and vehicles. Petroleum hydrocarbons, like pesticides, have a high affinity for sediment and are toxic to aquatic life at low concentrations. Therefore, the presence of colloidal clay, which in some cases is viewed as more of an aesthetic problem,<sup>19</sup> could actually be masking water quality problems due to the existence of hydrocarbons. If the affected water is tested only for turbidity and not for other pollutants, there could be instances where water with a safe and acceptable turbidity levels could nevertheless be toxic.

In addition to harming aquatic environments and impairing water quality, erosion and sedimentation can cause terrestrial damage. Such damage to the land can be very costly to repair. Repairs to combat the effects of erosion often involve replacing the soil that has been eroded and fixing any structures that have been damaged as a result of the erosion.

In addition, it is often necessary to remove eroded sediment that has ended up on another site. One study estimated the cost of such removal to range from \$2.50-\$4.00 per cubic yard.<sup>20</sup> On the other hand, preventative measures cost as little as \$0.10-\$0.15 per cubic yard.<sup>21</sup> Preventative measures continue to be inexpensive in terms of costs of materials and labor. Colloidal clay, which is found on almost every development site in Georgia,<sup>22</sup> requires the use of preventative measures because once it is released from a site, its physical and chemical properties make it almost impossible to capture and remove.<sup>23</sup>

## Regulatory Overview

### What is Georgia Doing to Control Colloidal Clay?

Georgia relies upon a number of statutes and regulations to address stormwater runoff and sediment pollution. This section examines how the following statutes and manuals directly and/or indirectly regulate colloidal clay pollution: Georgia’s Erosion and Sedimentation Act, along with the guidance set forth in the *Manual for Erosion and Sedimentation Control in Georgia* (the *Green Book*); the *Stormwater Management Manual* (the *Blue Book*); the Water Quality Control Act; and the *Coastal Stormwater Supplement* to the *Stormwater Management Manual*.

### The Erosion and Sedimentation Act

In 1975, the Georgia Erosion & Sedimentation Act (E&S Act or Act) was signed into law.<sup>24</sup> Under Georgia’s E&S Act, permits are required for certain land-disturbing activities.<sup>25</sup> A “land-disturbing activity” is defined in the Act as “any activity which may result in soil erosion from water or wind and the movement of sediments into State water or onto lands within the State, including, but not limited to, clearing, dredging, grading, excavating, transporting, and filling of land, but not including agricultural practices as described in paragraph (5) of Code Section 12-7-17.”<sup>26</sup> One condition of permits issued pursuant to the E&S Act is the proper application and maintenance of Best Management Practices (BMPs). BMPs are defined as, “[a] collection of structural practices and vegetative measures which, when properly designed, installed, and maintained, will provide effective erosion and sedimentation control.”<sup>27</sup> In sum, under Georgia law, all projects that involve land-disturbing activities must be properly permitted, employ appropriate BMPs, and follow all other guidelines set forth under state law.

The E&S Act also sets turbidity standards to ensure that erosion and sedimentation do not adversely affect state waters. These standards are exceeded if: (1) there is an increase greater than 25 nephelometric turbidity units for waters supporting warm water fisheries, or (2) there is an increase greater than 10 nephelometric turbidity units for trout waters.<sup>28</sup> Georgia’s E&S Act does not list NTU standards for freshwaters or tidal saltwaters.<sup>29</sup>

The E&S Act's standards and regulations are compiled in the *Manual for Erosion and Sedimentation Control in Georgia*, also known as the *Green Book*. These standards and regulations, as well as the permits issued under the E&S Act, primarily concern the management of stormwater runoff that occurs during construction. Therefore, the BMPs and turbidity standards contained in the *Green Book* are only applicable to "construction stormwater runoff" and not to "post-construction stormwater runoff."

## The Stormwater Management Manual

Georgia's *Stormwater Management Manual* (hereinafter referred to as the *Blue Book*) also contains regulations and standards for controlling stormwater runoff, sedimentation, and erosion. The *Blue Book* covers what the *Green Book* does not: post-construction stormwater runoff. The *Blue Book* outlines three types of stormwater control categories based upon their effectiveness in removing the "annual average total suspended solids (TSS) load in typical post-development urban runoff."<sup>30</sup> The three categories are: (1) General Application Structural Controls, which are presumed to be able to remove 80 percent of TSS; (2) Limited Application Structural Controls, which must be used in conjunction with other measures to achieve the 80 percent TSS removal and are generally used only for water quality treatment; and (3) Detention Structural Controls, which are only used for water quantity control.<sup>31</sup>

When implementing post-construction stormwater management control, much like in pre-construction and construction stormwater management, project managers must take into consideration differences in terrain, the type of soils, and in some cases the existence of special watersheds and streams. To aid in this endeavor, the *Blue Book* identifies special waters and streams that are most sensitive to sedimentation and high turbidity levels including trout streams, streams with high water quality, and waters where shellfish harvesting occurs.<sup>32</sup> These special waters are roughly synonymous with the waters listed in the E&S Act that have specific NTU standards.

## Georgia's Water Quality Control Act

Georgia's Water Quality Control Act<sup>33</sup> (WQC Act) establishes water quality standards for the State.<sup>34</sup> These water quality standards implement federal EPA and Clean Water Act standards and guidelines. The WQC Act also reinforces the standards contained in the *Green Book* and *Blue Book*. For colloidal clay, the most relevant sections of the WQC Act are those that define turbidity standards. The WQC Act establishes general water quality criteria for all waters of the state, one of which provides that "[a]ll waters shall be free from turbidity which results in a substantial visual contrast in a water body due to a man-made activity."<sup>35</sup> Colloidal clay clearly colors water, and thus falls squarely within the scope of the WQC Act's water quality criteria.

To ensure compliance with this turbidity standard, the WQC Act requires those involved in land-disturbing activities to comply with all relevant permits and to implement the "proper design, installation, and maintenance of best management practices."<sup>36</sup> The inclusion of regulations for land-disturbing activities in the WQC Act further strengthens the significance and the importance of the use of the most effective BMPs under the E&S Act and Stormwater Management regulations to prevent the release of colloidal clays from a site at all stages of development, including pre-development, actual construction, and post-construction.

## The Coastal Stormwater Supplement to Georgia's Stormwater Management Manual

In April 2009, the first edition of the *Coastal Stormwater Supplement* to Georgia's *Blue Book* (hereinafter the *Supplement*) was published.<sup>37</sup> The *Supplement* was devised to enable Georgia's regulatory agencies and developers to better manage and prevent the deleterious effects of erosion and sedimentation in the waters of Georgia's hydrologically and ecologically fragile coastal area. The *Supplement* calls for improving stormwater management by better controlling stormwater runoff during all the stages of a site's development, including better control of post-construction runoff from existing sites.<sup>38</sup> This improved stormwater management will be achieved through integrating natural resource protection (which advocates "environmentally sensitive site planning and design techniques") and Georgia's current stormwater management measures.<sup>39</sup> The *Supplement* thus marks a shift in Georgia's regulatory approach from primarily mitigation measures to an emphasis on preventative *and* mitigation measures.

Pursuant to the *Supplement*, natural resource protection is to be achieved by implementing "green infrastructure practices." These practices are holistic in scope in that they are to be developed during a project's planning phase, implemented throughout the duration of the project, and maintained once construction has ended. These practices fall into three broad categories: site planning, site design, and low impact development.<sup>40</sup> Examples of specific green infrastructure practices include, but are by no means limited to: using permeable surfaces/pavement, reducing clearing and grading, preserving the area's natural drainage features, preserving riparian buffers, and using vegetated filter strips.<sup>41</sup>

It is important to note that the integrated measures detailed in the *Supplement* are not only designed for managing construction stormwater runoff. The *Supplement* is also designed to provide guidance for site planning as well as preventing and managing pre-construction, actual construction, and post-construction runoff. For BMPs and practices related to handling stormwater runoff during construction, the *Green Book* should be referred to.<sup>42</sup> By combining the *Supplement's* green infrastructure practices

with the existing pre-construction BMPs found in the *Green Book*, construction sites in Georgia will be able to significantly reduce the quantity of construction stormwater runoff while also improving the water quality of the stormwater leaving the site. Improving a site's stormwater runoff quality may result in the post-construction BMPs outlined in the *Blue Book* being more effective in removing the lower levels of colloidal clay that may still exist.

## What are the Most Common and Effective Best Management Practices to Remove Colloidal Clay and Reduce Turbidity?

This section will provide an in-depth analysis of which BMPs are most effective at either preventing the addition of colloidal clay or removing it from stormwater runoff. It will also discuss those BMPs that, while commonly prescribed by the *Green Book* and *Blue Book*, are ineffective at removing colloidal clay from water.

### Flocculants

The best way to remove colloidal clay is by adding a polymer or other substance, often called a flocculant, to the affected soil or water. Flocculants attach themselves to colloidal clay particles, thereby shrinking the existing surrounding layer of attached cationic hydrophilic particles, such as pesticides. The attached flocculants are able to attract other clay particles in a process called flocculation. Flocculation results in larger particles called flocs.<sup>43</sup> By changing the amount of ionization on each particle, particles

of colloidal clay can combine with each other in a process called coagulation. Once flocculation and coagulation occur, the clay and connected particles are heavy enough to settle out of the water. This is important since, “[s]ettling is the most effective removal method for suspended solids.”<sup>44</sup> Commonly used flocculants are anionic polyacrylamide (PAM), aluminum sulfate ( $Al_2(SO_4)_3$ ), and ferric iron ( $Fe^{3+}$ ).<sup>45</sup> These substances cause the colloidal clay to combine and precipitate out without leaving ion concentrations or affecting the water quality.

### Anionic Polyacrylamide (PAM)

PAM is a water soluble, synthetic polymer designed to minimize soil erosion caused by water and wind.<sup>46</sup> PAM binds soil particles together and is especially effective on soils with high clay content. In fact, the use of anionic PAM is intended for sites that contain high amounts of fine silt, clay, or colloidal solids.<sup>47</sup> PAM comes in several forms: a powder, a stock solution (where the powder is added to water), an emulsion, and floc logs (gel blocks of PAM).<sup>48</sup> PAM can also be blended with other flocculants, making a polymer blend that will work most efficiently for the specific type of soil present at the site. PAM or PAM blend flocculants must meet the following criteria: (1) they must be anionic or negatively charged (cationic polymers are extremely toxic to aquatic organisms); (2) they must be certified as potable drinking water grade; and (3) the manufacturer must provide a toxicological report conducted and approved by a third-party.<sup>49</sup>

PAM can be added to the soil, thereby preventing erosion before any runoff occurs on the site, or it can be added to water that has already been impaired by high colloidal clay turbidity levels. Depending on the soil and/or topography of the site, this could mean that as little as 5-10 pounds of PAM will need to be applied per acre.<sup>50</sup> Therefore, the application of PAM serves as both an erosion prevention measure and a water treatment technique.

PAM works extremely well when used in conjunction with other BMPs.<sup>51</sup> In fact, Georgia's E&S Program requires that PAM be used with other BMPs, oftentimes vegetated or forested filter strips.<sup>52</sup> The use of PAM as a secondary BMP can effectively trap the remaining colloidal clay sediments. This improves both the water quality and appearance of the discharge/stormwater runoff.<sup>53</sup> It is therefore recommended that PAM be applied to the soil during construction activities at a site and before anticipated rain events. Reapplication is recommended when the previously treated soil is disturbed or when runoff turbidity levels increase.<sup>54</sup> Studies conducted on construction sites have shown that “anionic PAM provided up to 70 percent reduction in stormwater runoff-sediment, and even better results when combined with conventional mulching and seeding measures.”<sup>55</sup> The *Green Book* also lists PAM as a “temporary practice,” intended for use on sites where vegetation cover is absent, inadequate, and/or not



feasible due to time constraints.<sup>56</sup> In one study, PAM was used as a secondary BMP with a jute particle curtain, a type of filter placed in flowing streams that collects particles as they move downstream.<sup>57</sup> After the stormwater passed through this curtain, PAM was able to further lower the turbidity level from several hundred NTUs down to just 15 NTUs.<sup>58</sup>

When applying PAM, soil properties, slope, and the type of irrigation system being used must be taken into consideration.<sup>59</sup> According to the Natural Resource Conservation Service, when the cause of erosion is due to irrigation, the concentration of PAM in irrigation water should not exceed 10 ppm.<sup>60</sup> In sprinkler irrigation, the application rate of PAM should not exceed 4 pounds per acre per single application event.<sup>61</sup> In areas where soil erosion occurs due to wind or precipitation, the application of PAM should not exceed 200 pounds per acre per year.<sup>62</sup> This amount is for any form of PAM, whether it is an emulsion or a powder. Seed can also be added to the PAM mixture (also known as hydroseeding) to further stabilize the soil and promote vegetation growth.<sup>63</sup>

## Alum

Aluminum sulfate, commonly known as alum, is another frequently used flocculant. Alum, like PAM, comes in many forms and is used in conjunction with other BMPs. Alum is often added as an additional treatment in sand filters, so that any TSS is treated by the alum and captured by the filter simultaneously. Like all flocculants, the amount of alum needed for effective treatment depends upon the volume and TSS level of the water to be treated. The *Blue Book* categorizes alum treatment as a Limited Application Control, meaning that it is not to be used as a primary BMP and will not, when used alone, be able to remove the required 80 percent of TSS. Despite being categorized as a Limited Application Control, alum has a 90 percent TSS removal rate.<sup>64</sup> The *Blue Book* accounts for this discrepancy by stating that alum treatment “should only be considered for large-scale projects where high water quality is desired.”<sup>65</sup> It should also be noted that unlike the *Green Book*, the *Blue Book* only mentions alum and does not list PAM or any other type of flocculant.

## Vegetated and Forested Filter Strips

Vegetated and forested filter strips are structural BMP options. They are strips of land covered by either vegetation or forest that are “designed to reduce sediment and remove pollutants.”<sup>66</sup> Forested filter strips are essentially portions of a pre-existing forest that are left undisturbed.<sup>67</sup> The practice of using forested filter strips is very common BMP method used in the forests of North Georgia.<sup>68</sup> They are considered retention systems since they absorb runoff water which is then percolated through the strips. This percolation process occurs when filtration and natural biological actions remove pollutants and sediments. Recent studies on vegetated filter strips have shown that strip width is an incredibly important,

if not the most important, factor affecting a strip’s sediment retention ability. For example, one study reported an increase in sediment retention as the vegetated filter strip width increased from 2 to 10 meters (6.6 to 32.8 feet).<sup>69</sup>

The use of filter strips is a cost effective way to remove excess sediments from runoff. Vegetated filter strips cost between zero dollars (when existing vegetation can be used) and \$1.30 per square foot.<sup>70</sup> Filter strip application, inspection, and maintenance costs can total anywhere from \$100 to \$1,400 annually, depending on how large the area and how much of the filter strip is comprised of pre-existing vegetation.<sup>71</sup> Maintenance of vegetated and forested filter strips includes: annually removing sediment buildup to prevent damming, nutrient and pesticide management, mowing of vegetated filter strips, periodic harvesting of some trees in forested filter strips, and minimizing the amount of vehicular and pedestrian traffic on the filter strips to avoid compaction of the soil.<sup>72</sup>

For all types of filter strips, the slope of the land is a very important factor to take into consideration in determining effectiveness. According to the *Journal of Soil and Water Conservation*, vegetated or grass filter strips, used primarily for agricultural applications, “have been found to retain 80 percent or more of the sediment mass entering them in runoff when slopes did not exceed 10 percent.”<sup>73</sup> In addition, studies conducted throughout the 1980s and 1990s, and more recently a study conducted in 2006, have all shown that forested filter strips, especially in low relief areas or areas of gentle slopes up to 10 percent were equally effective and successful in trapping sediments as grass filter strips. These studies were conducted in the Georgia Piedmont and on Georgia’s Coastal Plain.<sup>74</sup>

Compared to other BMPs, the use of filter strips is relatively low maintenance, yet their longevity and effectiveness are very high. A 2002 study found that using a 100-foot wide forested filter strip resulted in 80 percent to 100 percent removal of suspended sediments and trace metals.<sup>75</sup> The *Blue Book* however, lists biofilters (filter strips) as Limited Application Controls that have only a 50 percent TSS removal rate.<sup>76</sup> This discrepancy could be because the *Blue Book* is measuring TSS removal rate in post-construction stormwater runoff, which, if not managed properly in the previous stages, could be overloaded with colloidal clay, thereby clogging and overloading the filter strips. However, the *Blue Book* also designates filter strips for pre-treatment usage, which seems to indicate that they are best employed as a preventative rather than mitigation measure.<sup>77</sup> The *Supplement’s* inclusion of filter strips as a green infrastructure practice further supports their usage at earlier stages of development.

## Vegetated Buffers

While PAM and filter strips are the best BMPs

specifically designed to deal with colloidal clay, vegetated buffers are by the far the best “holistic” BMP for preventing erosion and sedimentation. Buffers filter out all forms and sizes of pollutants, provide and maintain wildlife habitat, promote healthy terrestrial and aquatic ecosystems, and improve water quality. Buffers along the State’s waters are essentially large scale filter strips. Under the E&S Act, all land disturbing activities must maintain a 25-foot buffer between the site and the state waters.<sup>78</sup> A 50-foot buffer must be in place for trout waters.<sup>79</sup>

## Direct Filtration

Direct filtration, even slow sand filtration, of water containing large amounts of colloidal clay is largely ineffective in reducing colloidal clay turbidity.<sup>80</sup> This is due to the extremely small size of particles that make up colloidal clay<sup>81</sup> and the particles’ ionic properties.

In the *Blue Book*, sand filters are listed as a General Application Control, meaning that they are classified as having the capability to remove 80 percent of TSS.<sup>82</sup> However, it is important to remember that the 80 percent TSS removal rate is based on their efficacy in treating post-development urban runoff, not runoff that occurs during initial site grading and development. Due to the physical and chemical properties of colloidal clay, it is very likely that colloidal clay falls within the 20 percent that is not removed.<sup>83</sup>

## Sediment Ponds

According to the *Blue Book*, detention structural controls, such as sediment ponds, should be used only for water quantity control. Due to Georgia soils’ high clay content, there is a high potential for pollution re-suspension and outlet clogging, rendering sediment ponds ineffective to be considered a viable primary or secondary BMP.<sup>84</sup> In fact, another typical detention structural control, the infiltration basin, is specifically not recommended by the *Blue Book* because, “many areas in Georgia have soils with high clay content,” and thus, “the infiltration basin has limited applicability.”<sup>85</sup>

## What Additional Steps Could Georgia Take to Address Colloidal Clay?

Despite the current economic situation, Georgia continues to experience a high rate of population growth. The commercial, residential, and infrastructure development needed to accommodate this growth places increasingly more stress on the environment. Unchecked, this development has the very real potential to severely compromise the quality and quantity of Georgia’s natural resources and to exacerbate the negative effects these resources and habitats are already feeling from the lasting drought and climate change. While Georgia’s coast contains arguably the most sensitive ecosystems in the state, the detrimental effects of unchecked development and “after-the-fact” water management plans, are state-wide issues. It is imperative that our State’s water quality,

natural resources, and habitats be preserved in the most environmentally and economically sound ways as possible.

Sedimentation pollution, especially in the form of colloidal clay, is incredibly detrimental ecologically, aesthetically, and economically. Proper permitting and the proper use of BMPs can go a long way towards preventing erosion and sedimentation pollution. Measures such as using PAM and vegetated or forested filter strips on construction sites have proven to be two of the most effective pollution prevention techniques, especially in clay soils such as those found in Georgia. However, future-focused, environmentally sensitive site planning techniques, such as the green infrastructure practices detailed in the *Supplement*, can achieve even greater reductions in erosion and sedimentation pollution. Sedimentation prevention at all stages of development is much more cost effective — saving both time and money — than attempting to clean up waters that have already been impaired. Therefore, the best solution is to employ BMP-centric design to prevent sedimentation from even occurring in the first place.

This Article recommends that the *Supplement*, originally drafted for just the coastal counties, be implemented statewide. Studies have proven that the *Supplement’s* dual focus on holistic planning and the use of preventative measures at all stages of a site’s development are the most effective ways to reduce erosion and sedimentation and to keep colloidal clays contained within the soils on site. Since the *Supplement’s* completion in April 2009, Chatham County, the coastal county that contains the city of Savannah, has approved and implemented the more stringent preventative measures found in the *Supplement*. The *Supplement* is already designed for implementation in 24 counties on or near the coast. Since colloidal clays exist throughout the State, it is recommended that these higher coastal development standards become statewide standards.

This article further recommends that Georgia strengthen its buffer standards. Vegetated buffers are by far the most ecologically sound and effective measure to reduce the amount of erosion and sedimentation pollution reaching our waters while at the same time vastly improving runoff water quality. Yet despite the fact that buffers are the most effective method to preserve Georgia’s waters and wildlife habitats, the strong drive for development has made buffers politically unpopular. This unpopularity first started affecting policy in 2000, when an amendment to the E&S Act reduced the standard 100-foot buffer requirement for trout streams to the current 50-foot buffer.<sup>86</sup> For the purposes of this article, it is recommended that Georgia reject future attempts to further reduce the 50-foot buffer, ensure proper enforcement of this standard, and work towards reversing the 2000 amendment that cut in half the higher buffer standards for trout waters.

It is also extremely important that proper permitting and implementation of existing erosion and sedimentation and stormwater regulations occur in the first place. All too often, development projects are given the green light to proceed when they have inadequate erosion and sedimentation and stormwater management plans in place. In addition, there are many instances where projects with adequate plans nevertheless cause water quality problems because the plans are not implemented properly. Because Georgia's regulatory agencies do not have sufficient enforcement personnel, violations of this type sometimes go unnoticed or are ignored. Ensuring that proper permitting procedures are followed and enforcement measures are carried out in good faith is difficult, especially in a state like Georgia which relies upon an extensive network of state and local agencies to carry out these responsibilities. These agencies have overlapping authority and responsibilities, may or may not effectively communicate with one another, and may or may not carry out their designated responsibilities in a consistent manner. Nonetheless, improvement in the areas of permitting and enforcement is necessary if Georgia's waters are to be adequately protected.

## Conclusion

Erosion and sedimentation pollution, particularly pollution involving colloidal clay, is a pervasive and difficult problem affecting Georgia's waters. While it is almost impossible to remove colloidal clay from rivers and streams without expending a significant amount of time, money, and effort, there are inexpensive, efficient, and practical measures available to prevent erosion and the addition of colloidal clay to stormwater runoff in the first place. Georgia's Erosion and Sedimentation Act, *Green Book*, *Blue Book*, Water Quality Act, and *Coastal Stormwater Supplement* all describe the technologies and application methodologies necessary for the prevention of colloidal clay pollution. Therefore, it is recommended that proper implementation and regulation of the standards set forth in these authorities occurs statewide, with consistency and proper enforcement. In addition, the State should continue to work towards improving existing laws and regulations, such as the vegetated buffer requirements. If rapid and at times irresponsible development continues and inconsistent application of existing water quality laws remain the norm, then the ecological, aesthetic, and economic problems associated with colloidal clay will persist, and Georgia's rivers and streams will continue to run orange.

### (Endnotes)

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- 11 *Id.*
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- 20 *Green Book*, *supra* note 1, at 1-1. (citing Soil Conservation Service, *Engineering Field Manual* (Sept. 1969)).
- 21 *Id.*
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- 23 *Green Book*, *supra* note 1, at 2-1 ("It is difficult and perhaps impossible to totally eliminate the transportation of these fine [colloidal clay] particles even with the most effective erosion control programs.")
- 24 O.C.G.A. §§ 12-7-1, *et seq.*
- 25 O.C.G.A. § 12-7-7(a).
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- 28 O.C.G.A. § 12-7-6(a)(2).
- 29 O.C.G.A. § 12-7-6(a)(2).
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- 43 Hargreaves, *supra* note 5, at 2.
- 44 Peluso, *supra* note 10, at 15.
- 45 Manoj Chopra, *Polymers and Alum* (powerpoint presentation at 1st H<sub>2</sub>O and Erosion Control Workshop) (Mar. 2007) (available at [www.stormwater.ucf.edu/.../A-3\\_percent20Chopra-Polymers\\_percent20and\\_percent20Alum\\_percent20Presentation.ppt](http://www.stormwater.ucf.edu/.../A-3_percent20Chopra-Polymers_percent20and_percent20Alum_percent20Presentation.ppt)) (last visited Apr. 2, 2009).
- 46 Applied Polymer Systems Inc., *Technical Guidance for the Use of Polyacrylamides (PAM) and PAM Blends for Soil Erosion Control and Stormwater Clarification* (available at [http://www.siltstop.com/how\\_to\\_use\\_polymers.html](http://www.siltstop.com/how_to_use_polymers.html)) (last visited Jun. 28, 2009).
- 47 *Erosion & Sediment Control Technical Bulletin #2- Application of Anionic Polyacrylamide for Soil Stabilization and Stormwater Management* (July 2002) (available at [www.dcr.virginia.gov/soil\\_and\\_water/documents/anoinic.pdf](http://www.dcr.virginia.gov/soil_and_water/documents/anoinic.pdf)) (last visited January 4, 2011).
- 48 *Green Book*, *supra* note 1, at 6-67.
- 49 Chopra, *supra* note 45, at 12.
- 50 Keating, *supra* note 19.
- 51 Natural Resources Conservation Service, *Erosion Control Using Anionic Polyacrylamide (PAM)* (2002); Keating, *supra* note 19 (“Using a particle curtain and PAM also helped us get ahead of our construction schedule because it allowed us to work even if we had rain. I’ve used it [PAM] for slope stabilization as a turbidity treatment and for demucking operations. When we use PAM with mulch, the PAM will hold particles in place during fairly high runoff flows. In addition to properly installed BMPs, PAM offers a very powerful tool to get in and get the job done within the footprint of the project. You can keep your dirt on your site.”).
- 52 *Green Book*, *supra* note 1, at 6-67. And conversation between William Sapp (Southern Environmental Law Center) and Mike Wylie (Environmental Protection Agency). March 2008.
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- 54 *Id.*
- 55 *Erosion & Sediment Control Technical Bulletin #2- Application of Anionic Polyacrylamide for Soil Stabilization and Stormwater Management* (July 2002) (available at [www.dcr.virginia.gov/soil\\_and\\_water/documents/anoinic.pdf](http://www.dcr.virginia.gov/soil_and_water/documents/anoinic.pdf)) (last visited January 9, 2011).
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- 58 *Id.*
- 59 See Natural Resources Conservation Service, *supra* note 51.
- 60 *Id.*
- 61 *Id.*
- 62 *Id.*
- 63 *Green Book*, *supra* note 1, at 6-67.
- 64 *Blue Book*, *supra* note 23, at 3.1-7.
- 65 *Blue Book*, *supra* note 23, at 3.1-3-4.
- 66 W.J. White, L.A. Morris, et al., *Sediment Retention by Forested Filter Strips in the Piedmont of Georgia*, 62(6) *Journal of Soil and Water Conservation* 453, 463 (Nov. 1, 2007).
- 67 *Id.*
- 68 *Id.* (“Filter strips, which are more commonly referred to as streamside management zones (SMZs) in forestry literature (Comerford et al. 1992; Loch et al. 1999) are established along all permanent and intermittent streams and along most large gullies as a means of water quality protection.”).
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- 70 Peluso, *supra* note 10, at 40.
- 71 *Id.*
- 72 *Id.*
- 73 White, *supra* note 65 at 453.
- 74 *Id.*
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- 78 O.C.G.A. § 12-7-6(b)(15).
- 79 O.C.G.A. § 12-7-6(b)(16).
- 80 Chopra, *supra* note 45, at 3.
- 81 Peluso, *supra* note 10, at 11.
- 82 *Blue Book*, *supra* note 23 at 3.1-1.
- 83 Memorandum from W. Calvin Horton Town Manager to Mayor and Town Council of Chapel Hill, North Carolina, *Report on Soil and Sedimentation Issues* (Jan. 10, 2000) (available at [http://townhall.townofchapelhill.org/archives/agendas/ca000110/8\\_percent20Soil\\_percent20and\\_percent20Sedimentation\\_percent20Issues.htm](http://townhall.townofchapelhill.org/archives/agendas/ca000110/8_percent20Soil_percent20and_percent20Sedimentation_percent20Issues.htm)) (“[Colloidal clay] often results in turbid water even after passing through sediment control devices.”)
- 84 *Blue Book*, *supra* note 23 at 3.1-4.
- 85 *Blue Book*, *supra* note 23 at 3.1-5.
- 86 Demeo, Terry A., Don R. Christy, and James E. Kundell, *Georgia’s Trout Stream Buffer Program Assessment: Under the Georgia Erosion and Sedimentation Act and Georgia Water Quality Control Act* at 2 (Carl Vinson Institute of Government, University of Georgia, October 2005) (available at [www.rivercenter.uga.edu/publications.htm](http://www.rivercenter.uga.edu/publications.htm)).

# NEDC v. Brown – Abrogation of the Clean Water Act’s Silvicultural Rule?

By Catherine N. Clutter, Esq.

As large producers of sediment and particle runoff, logging roads have long been a target of environmental groups seeking regulation of the roads under the Clean Water Act. The CWA’s regulatory framework seeks to limit, monitor and report all “point source discharges of pollutants into the navigable waters of the United States.”<sup>1</sup> Sediment and particle runoff from the roads are “pollutants” as defined by the CWA, causing oxygen depletion, aquatic habitat destruction and long-term changes in channel morphology.<sup>2</sup> The streams and rivers into which the runoff is discharged are likewise incontrovertibly “navigable waters” as contemplated by the CWA.<sup>3</sup> The point of contention thus centers upon defining the runoff as a “point source discharge” subject to CWA strictures.<sup>4</sup> Should the logging road runoff be classified as a point source discharge, it would be regulated and monitored under the National Pollutant Discharge Elimination System (NPDES) permitting process – the process that gives meaningful strength and efficacy to the CWA by “licensing a facility to discharge a specified amount of a pollutant into a receiving water under specified conditions.”<sup>5</sup>

Defining logging roads as either a point source or non-point source discharge lies at the center of the recent controversial Ninth Circuit decision in *Northwest Environmental Defense Center v. Brown, et al. (NEDC)*.<sup>6</sup> In *NEDC*, the Ninth Circuit challenges the validity of the Silvicultural Rule – a Rule enacted by the EPA that provides a regulatory exemption from the Clean Water Act and the NPDES process for a variety of activities associated with the cultivation and harvesting of timber. Reaching the arguably novel issue of “whether discharge of natural runoff becomes a point source discharge when it is channeled and controlled through a ‘discernible, confined, and discrete conveyance’ in a system of ditches, culverts, and channels,” the Ninth Circuit concluded that such a discharge was, indeed, a point source discharge subject to CWA and NPDES strictures.<sup>7</sup> The Ninth Circuit’s decision has caused significant consternation and concern within the timber industry and the Environmental Protection Division (EPA) and state agencies charged with the NPDES permitting process. Conversely, it has been avidly welcomed by environmental groups which view the Silvicultural Rule as an overly broad CWA exemption for the timber industry. From either perspective, *NEDC* is significant precedent as the Ninth Circuit frontally challenges and essentially nullifies the EPA’s Silvicultural Rule.

## Clean Water Act’s NPDES Permitting Process

Under NPDES, a facility or individual can obtain a permit from either the federal or state permitting authority legitimizing its discharge of identified pollutants.<sup>8</sup> Obtaining a permit, however, is neither a simple nor an inexpensive process. The permit is issued either by the Environmental Protection Agency or the state, territory, or Tribe authorized by the EPA to do the same. The Georgia Environmental Protection Division (EPD) has been so authorized to manage the NPDES process within the boundaries of the State.<sup>9</sup> The EPA, however, does retain the authority to review each permit issued by the State and may formally object to items that conflict with federal requirements.<sup>10</sup>

The NPDES process commences upon an application for a permit submitted to the appropriate state or federal environmental authority. The agency which receives the application proceeds with an analysis and comparison of technology-based versus water quality-based effluent limitations, then determines stringency, utilizing the more stringent standard as the basis for the permit.<sup>11</sup> Once the effluent discharge limitation has been set, the permitting authority then develops appropriate monitoring and reporting conditions, specific special conditions, and standard conditions governing the permittee(s).<sup>12</sup> Once the draft permit is complete, the public is provided with notice and afforded an opportunity to comment on the proposed permit.<sup>13</sup> Based on these comments, the permitting authority then develops the final permit and issues the final permit to the facility applicant. The permitting process is thus an extremely costly and time intensive process for both the permit applicant and the NPDES permitting authority, raising the inevitable questions regarding the adequacy of available human and financial resources to undertake and complete this process on a wide-scale basis.

## Silvicultural Rule Provides Regulatory Exemption from NPDES Requirements

Recognizing this potential of the CWA and NPDES to economically cripple certain businesses and industries by requiring a permit for each and every discharge of a pollutant into American waters, Congress, the EPA, and the courts have adhered to certain limitations on and exemptions from the permitting requirement. Much focus is devoted to defining regulated “point sources” versus non-regulated “non-point sources.” In addition, agricultural and silvicultural operations have been afforded various exemptions from the CWA and

concomitant NPDES permitting process.<sup>14</sup> In 1977, Congress statutorily exempted return flows from irrigated agriculture from CWA regulation, recognizing the demands of modern industrialized agricultural methods and the diffuse nature of agricultural runoff. The EPA enacted a similar regulatory exemption for silvicultural activities – those relating to the “establishment, development, reproduction or care of forest trees” – associated with the timber industry.

Reiterating the point source / non-point source distinction, 40 C.F.R. § 122.27 codifies the Silvicultural Rule:

Permit requirement. Silvicultural point sources, as defined in this section, as point sources subject to the NPDES permit program.

Definitions. (1) Silvicultural point source means any discernible, confined and discrete conveyance related to rock crushing, gravel washing, log sorting, or log storage facilities which are operated in connection with silvicultural activities and from which pollutants are discharged into waters of the United States. The term does not include non-point source silvicultural activities such as nursery operation, site preparation, reforestation and subsequent cultural treatment, thinning, prescribed burning, pest and fire control, harvesting operations, surface drainage, or road construction and maintenance from which there is natural runoff.<sup>15</sup>

On the face of the regulation, “[logging] road construction and maintenance from which there is natural runoff” is thus classified as a non-point source to which the CWA strictures do not apply.<sup>16</sup> However, the Silvicultural Rule has been the target of much criticism and attack, particularly in the Pacific Northwest where timber tracts comprise thousands of contiguous acres, and the logging roads and drainage infrastructure serving these tracts are on the scale of small cities or municipalities. In contrast, the Silvicultural Rule – and the timber industry which it supports – has not been subject to the same level of opposition in the Southeastern United States where timber tracts are much more fragmented and smaller in size, and the roads serving these tracts are intermittent and short.

Indeed, a Georgia federal District Court relied on the Silvicultural Rule to render the CWA inapplicable to logging roads. By giving broad effect to all the provisions of the Rule, the Georgia court found logging roads to be non-point source dischargers removed from the governance of the CWA. The Court in *Sierra Club v. Martin* noted that the absence of any qualifying language – “like, “such as,” or “including” – is indicative of an exhaustive, exclusive listing of CWA regulated point sources in the silvicultural context.<sup>17</sup> Looking to legislative history and the CWA’s implementing regulations, the Northern District of Georgia court found that:

[T]he legislative history and the implementing regulations of the Clean Water Act show that Congress and the Environmental Protection Agency intended to exempt most

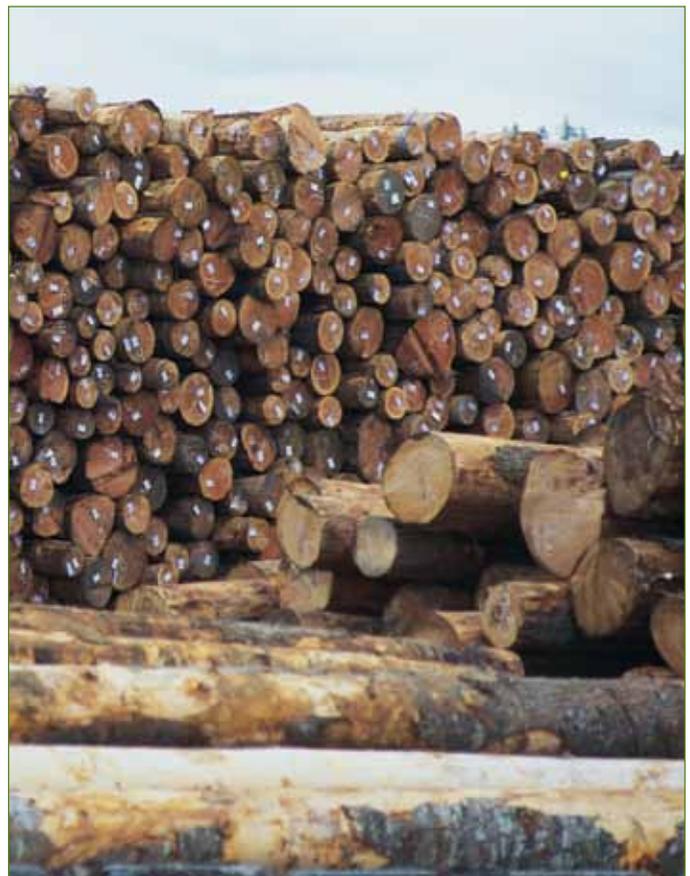
silvicultural activities from the CWA’s permit requirements. ... Only discharges from a few silvicultural activities meeting certain criteria are considered point sources subject to the permit program. These activities are rock crushing, gravel washing, log sorting, and log storage operations. ... Because none of the discharges [arising from logging roads] about which Plaintiffs complain relates to rock crushing, gravel washing, log sorting, or log storage facilities, they are “non-point” sources for purposes of the Clean Water Act and do not require a NPDES permit.<sup>18</sup>

Any timber production or harvesting activity other than the four expressly identified in the Silvicultural Rule is thereby exempt from CWA and NPDES requirements as being non-point source silvicultural operations.

Thus, a federal district court in Georgia has definitively held that the Silvicultural Rule exempts logging roads from CWA and NPDES regulation.<sup>19</sup> This reasoning, however, was not persuasive to the Ninth Circuit which oversees a regional venue where there are over 300,000 miles of logging roads. Conversely, the Ninth Circuit’s scrutiny of the Silvicultural Rule has increased over time and recently culminated in a decision which, in essence, eviscerates the Silvicultural Rule and the protections it afforded the timber industry.

## Ninth Circuit Decision’s Impact on the Silvicultural Rule

The plaintiff in *Northwest Environmental Defense Center v. Brown, et.al.* (hereinafter *NEDC*) alleged that defendants



had violated the CWA by not obtaining NPDES permits for logging road construction and operations, as these logging roads caused large volumes of sediment to be discharged into the area streams and rivers, allegedly resulting in widespread endangerment of indigenous fish, other aquatic species, and essential wildlife habitats.<sup>20</sup> To bring it within the purview of CWA and NPDES, the plaintiff contended that the system of ditches and culverts constructed by the defendants to channel road runoff into nearby streams and rivers constituted a point source from which a pollutant discharge must be regulated and permitted. The Oregon District Court, however – premised on a reasoning reflecting that articulated in *Sierra Club v. Martin* – held that the Silvicultural Rule exempted these discharges from the NPDES permitting process.

Echoing precedent from other jurisdictions, the Oregon District Court concluded that the Silvicultural Rule, delineated in 40 C.F.R. § 122.27, exempted the discharges generated by “road construction and maintenance” as non-point sources not subject to the strictures of the CWA. Both the Oregon and Georgia District Courts thus held that only four silvicultural activities – those being rock crushing, gravel washing, log sorting, or log storage facilities – constitute “point sources” regulated by the CWA and NPDES.<sup>21</sup> Therefore, according to these courts, all other activities associated with the cultivation of forest trees, including “[logging] road construction and maintenance,” are non-point sources not governed by the CWA mandates.

In reviewing the case *de novo*, the Ninth Circuit, however, rejected the reasoning of other jurisdictions and its own lower court and followed a reasoning that essentially negates the Silvicultural Rule. Relying on the *Chevron* standard of deference in reviewing both the EPA’s regulations implementing the CWA and the district court’s interpretation

of the CWA, the Ninth Circuit committed to “defer to an agency’s interpretation of its own regulations unless that interpretation is plainly erroneous, inconsistent with the regulation, or based on an impermissible construction of the governing statute.”<sup>22</sup> Utilizing this standard of review, the Court went on to hold that the Silvicultural Rule, if read to capture the intent of the EPA, is inconsistent with §502(14) of the CWA [defining a “point source”].<sup>23</sup> Therefore, a reading of the Silvicultural Rule whereunder:

[T]he Rule exempts all natural runoff from silvicultural activities such as nursery operations, site preparation, and the other listed activities [including road construction and maintenance] from the definition of point source, irrespective of whether, and the manner in which, the runoff is collected, channeled, and discharged into protected water ... is inconsistent with §502(14) and is, to that extent, invalid.<sup>24</sup>

The Ninth Circuit adopted a two-pronged attack on the Silvicultural Rule, significantly constricting the classification of “non-point sources” and broadening the definition of “point source” under the regulation. In *NEDC*, the Ninth Circuit reiterated its reliance, found in earlier cases such as *League of Wilderness Defenders v. Forsgren*, on the “natural runoff” qualifier as determinative of CWA and NPDES applicability.<sup>25</sup> In *Forsgren*, and as followed in *NEDC*, the Ninth Circuit rejected Defendants’ claims that the silvicultural activity in question (whether aerial pest spraying or logging road construction and maintenance respectively) was “excluded by regulation from being a point source.” Rather, “we [Ninth Circuit] read the [Silvicultural Rule] regulation to conform to the [CWA] statute and to the common understanding of the difference between point source and nonpoint source pollution. We conclude that the regulation excludes from the definition of point



source pollution only those silvicultural ... activities from which there is natural runoff, rather than all silvicultural ... activities.”<sup>26</sup>

Building on *Forsgren*, the court in *NEDC* took the “natural runoff” qualifier further, by holding that even discharge of “natural runoff” from logging roads “becomes a point source discharge when it is channeled and controlled in some systematic way through a ‘discernible, confined and discrete conveyance’ and discharged into the waters of the United States.”<sup>27</sup> Holding that the categorical exemption of logging roads argued for by the defendants and the EPA was an impermissible interpretation, the Ninth Circuit repeatedly emphasized that collection and discharge of runoff through a series of ditches and culverts is not a “natural runoff” and thus not exempt from the CWA point source permitting process. This expansive reading of the degree of “naturalness” needed to define a discharge as a non-point source exempt from the NPDES permit requirements thus effectively abrogates the majority of protection previously afforded to logging roads by the Silvicultural Rule.

The Ninth Circuit additionally rejected the holding in *Sierra Club* as to the exclusivity of the “point source” definition in the context of silvicultural activities. The court in *Sierra Club* held:

Plaintiffs’ main contention is that the regulation governing silvicultural activities does not contain an exhaustive list of what constitutes point sources for purposes of silvicultural activities but only lists examples. However, Defendants correctly submit that the regulations do not contain language conveying an intent to list examples, e.g., “such as,” “including,” or “like.” Instead, the regulation expressly defines what constitutes a silvicultural point source and thereby limits what can constitute a silvicultural point source ... [O]nly discharges from four activities related to silvicultural enterprises, rock crushing, gravel washing, log sorting, and log storage facilities, are considered point sources and thus subject to NPDES permitting requirements.<sup>28</sup>

The Court in *NEDC* dismissed this reasoning in its entirety by essentially excising the regulation’s narrow definition of “point source” as being related to one of the four activities listed above. The Ninth Circuit expanded the definition of “point source” – even in the silvicultural context – to the broader CWA definition, noting that “[t]he definition [of a point source] in no way depends on the manner in which the pollutant arrives at the ‘discernible, confined and discrete conveyance.’ That is, it makes no difference whether the pollutant arrives as the result of ‘controlled water used by a person’ [e.g., through gravel washing, rock crushing, etc.] or through natural runoff.”<sup>29</sup>

This holding of the Ninth Circuit thus broadens the definition of a regulable “point source” to a point that nullifies the exemptions of the Silvicultural Rule. Therefore, the two findings of the Ninth Circuit – in broadening the definition of “silvicultural point sources” and narrowing the classification of “non-point sources” – significantly constrict the scope of the Silvicultural Rule. By making the term “natural” dispositive of the applicability of the Silvicultural Rule, the Ninth Circuit effectively negates the exemption protection previously provided by the EPA’s Rule – a resulting expansion of the CWA and NPDES requirements that is not in accord with the EPA’s intent in enacting this regulation.

Failing to obtain relief from NPDES permitting under the Silvicultural Rule exemptions, the defendants in *NEDC* turned to their alternative pleading that the logging road discharges were exempt from the CWA under the 1987 Storm Water Discharge statutory amendments to the CWA. The 1987 Storm Water Discharge amendments seek to avoid the “administrative nightmare” of “requir[ing] everyone who has a device to divert, gather, or collect stormwater runoff and snowmelt to get a permit from EPA as a point source.”<sup>30</sup> These statutory amendments require NPDES permits for only five sources of stormwater discharges:

- A. A discharge with respect to which a permit has been issued under this section before the date of the enactment of this subsection [enacted Feb. 4, 1987].
- B. A discharge associated with industrial activity.
- C. A discharge from a municipal separate storm sewer system serving a population of 250,000 or more.
- D. A discharge from a municipal separate storm sewer system serving a population of 100,000 or more but less than 250,000.
- E. A discharge for which the Administrator or the State, as the case may be, determines that the stormwater discharge contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States.<sup>31</sup>

In implementing these statutory amendments, the EPA enacted regulations which further refined the scope of “industrial activity” warranting a NPDES permit:

Storm water discharge associated with industrial activity means the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the NPDES program under this part 122 [the Silvicultural Rule].<sup>32</sup> It is thus clear that the

EPA intended to preserve the silvicultural activity protections even as to storm water discharges.

The Ninth Circuit, however, summarily dismissed the EPA's regulation – and by extension the defendants' arguments in *NEDC* – exempting silvicultural activities from storm water discharge permit requirements. The court rejected contentions that (1) a logging site did not constitute an “industrial facility” as contemplated by the statute, (2) that logging roads are not “immediate access roads” subject to regulation, and that (3) logging roads are not primarily dedicated for use by logging companies. The court held: “[I]f logging activity is industrial in nature, and EPA concedes that it is, EPA is not free to create exemptions from permitting requirements for such activity. The reference to the Silvicultural Rule in 40 C.F.R. § 122.26(b)(14) does not, indeed cannot, exempt such discharges from EPA's Phase I regulations requiring permits for discharges ‘associated with industrial activity.’”<sup>33</sup> Thus, the court read the Phase I industrial activity storm water discharge amendments broadly so as to identify another avenue for subjecting logging roads to NPDES permitting requirements.

## Conclusion

The *NEDC* case has been hailed as a landmark decision by environmental groups and the timber industry alike in its negation of the Silvicultural Rule and the protections the rule previously provided to private landowners and commercial timber producers. The timber industry in the Pacific Northwest contends that the court's ruling in *NEDC* will have a crippling effect on its business as the costs of obtaining NPDES permits for the 300,000 plus miles of logging roads will negate any potential profits. Nor is it clear whether the human resources are in place in the federal and state permitting agencies in the Pacific Northwest region to handle the exponential increase in permit requests engendered by the *NEDC* holding.

The other central issue arising from the *NEDC* case is whether other courts will follow the Ninth Circuit precedent. There is a split among natural resource managers, researchers, and lawyers with one contention being that it would be impracticable to take this approach in the Southeast where logging “roads” often merely consist of a short extension off of a small private drive – in sharp contrast to the extensive road infrastructure in place in the Pacific Northwest. Others, however, remain unconvinced and perceive the *NEDC* ruling as a tangible economic threat to the timber industry which comprises one of the largest cash crops in the state of Georgia and across the Southeast. The timber industry is, in any event, now well aware of the essential difference in the efficacy of a *regulatory* exemption from the Clean Water Act versus the *statutory* exemption enjoyed by the agricultural industry.

## (Endnotes)

- 1 33 U.S.C. §§ 1311(a), 1342(a).
- 2 33 U.S.C. § 1362(6)
- 3 33 U.S.C. § 1362(7)
- 4 33 U.S.C. § 1362(14)
- 5 33 U.S.C. § 1342 (a); *U.S. EPA NPDES Writers' Manual*; U.S. Environmental Protection Agency, Office of Water, December, 1996; EPA-833-B-96-003, p.4.
- 6 *Northwest Environmental Defense Center v. Brown, Hobbs, et. al.*, 2010 U.S. App. LEXIS 17129, 17145 (August 17, 2010).
- 7 *Id.*
- 8 33 U.S.C. § 1342(a),(b)
- 9 O.C.G.A. § 12-5-30
- 10 33 U.S.C. § 1324(c)
- 11 *U.S. EPA NPDES Writers' Manual*; U.S. Environmental Protection Agency, Office of Water, December, 1996; EPA-833-B-96-003, pp. 1-28.
- 12 *Id.*
- 13 33 U.S.C. § 1342(b)(3)
- 14 33 U.S.C. § 1342 (l)(1)
- 15 40 C.F.R. § 122.27 (emphasis supplied).
- 16 40 C.F.R. § 122.27
- 17 *Sierra Club v. Martin*, 71 F. Supp. 2d 1268, 1305 (D. N. Ga. 1996).
- 18 *Sierra Club*, 71 F.Supp.2d at 1305 (emphasis supplied).
- 19 *Id.*
- 20 *Northwest Environmental Defense Center v. Brown, Hobbs, et. al.*, 2010 U.S. App. LEXIS 17129 (August 17, 2010).
- 21 *Sierra Club*, 71 F. Supp. 2d at 1305, *NEDC*, 2010 LEXIS at 17136.
- 22 *Id.* at 17136; See *Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837, 842-43 (1984).
- 23 33 U.S.C. §1362(14) (“The term “point source” means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural stormwater discharges and return flows from irrigated agriculture.”)
- 24 *NEDC v. Brown*, 2010 U.S. App. LEXIS 17129, 17139.
- 25 *Id.* at 17142, citing *League of Wilderness Defenders / Blue Mountain Diversity Project v. Forsgren*, 309 F.3d 1181, 1186-86 (9<sup>th</sup> Cir. 2002).
- 26 *Forsgren*, 309 F.3d at 1185-86.
- 27 *NEDC*, 2010 Lexis at 17138.
- 28 *Sierra Club*, 71 F. Supp.2d at 1305 (emphasis supplied).
- 29 *NEDC*, 2010 Lexis at 17134.
- 30 *Id.* at 17147, citing 131 Cong. Rec. 15616, 15657 (June 13, 1985) (Statement of Senator Wallop).
- 31 33 U.S.C. § 1342(p)(2)(B).
- 32 40 C.F.R. §122.26 (b)(14)(emphasis supplied).
- 33 *NEDC*, 2010 LEXIS at 17151.

## Annual Kick-Off Luncheon

*The Environmental Law Section of the State Bar of Georgia invites you to our annual Kick-Off Luncheon on Tuesday, Feb. 22, 2011, at 11:30 a.m. in the offices of King & Spalding, 1180 Peachtree St., Atlanta, Ga.*

Our speaker is newly elected Georgia Attorney General Sam Olens.

There is no charge to our members, though we must ask that you preregister for this event, so that we will have an accurate count of attendees and can provide security badges for King & Spalding's guests.

King & Spalding will validate the parking receipts for those who choose to park in the building.

**Presenter:** Attorney General Sam Olens

**Date:** Feb. 22, 2011

**Time:** 11:30 a.m.

**Location:** King & Spalding, 1180 Peachtree St.,  
Atlanta, GA 30309

**Register:** <https://www.members.gabar.org/Core/Events/Events.aspx>

Should you have issues registering online, please send an e-mail to Derrick Stanley at [derricks@gabar.org](mailto:derricks@gabar.org)

# EPA Initiating Rule Changes on Federal Water Quality Standard Regulations

By Steven W. Hart, P.G.

On Aug. 24 and 26, 2010, the U.S. Environmental Protection Agency (“EPA” or the “Agency”) held two public listening sessions on potential changes to the regulations for water quality standards. Follow-up listening sessions were held on November 17, 2010, for State regulators, on December 14, 2010, for Tribal regulators, and on December 15, 2010, for the Association of State & Interstate Water Pollution Control Administrators. The listening sessions were intended to allow EPA to inform the public, states, and tribes about the potential rule changes and to offer an opportunity for the public, states, and tribes to express views on the scope and general direction of the planned rulemaking.

EPA performed these somewhat unusual stakeholder input sessions in anticipation of publication of a proposed rule in the Federal Register in the summer of 2011. Potential revisions to the water quality standards include strengthening protection of water bodies that already meet or exceed the goals of the Clean Water Act (“CWA” or the “Act”), ensuring that standards reflect a continued commitment to these goals wherever attainable, improving transparency of regulatory decisions, and strengthening federal oversight.<sup>1</sup> Specifically, EPA is considering providing clarity in the following key areas, as further discussed in this article: (1) anti-degradation implementation methods; (2) Administrator’s determinations; (3) designated uses; (4) variances to water quality standards; (5) the scope and requirements of triennial reviews; and (6) updating the regulation to reflect court decisions. In addition, EPA is also considering changes to the drinking water standards for several substances, including tetrachloroethene (“PCE”) and trichloroethene (“TCE”).

Concerns were expressed, particularly during the general public listening sessions, that some of the changes under consideration would put more administrative burdens on the state and tribal authorities and that, generally and bluntly speaking, Total Maximum Daily Loads (“TMDLs”) could be expected to decrease, National Pollution Discharge Elimination System (“NPDES”) and publicly owned treatment works (“POTW”) permits to become more restrictive, and penalties and fines for non-compliance to increase in both frequency and amount.

## I. BACKGROUND

Water quality standards are the foundation of EPA’s approach to pollution control, including TMDLs and (NPDES) permits, and are a fundamental component of

watershed management. More specifically, water quality standards are provisions of state, tribal, or federal law that define the water quality goals of a water body, or segment thereof, that identify the use or uses to be made of the water body (e.g., recreation, water supply, aquatic life, agriculture, etc.), that establish water quality criteria (numeric pollutant concentrations and narrative requirements) to be protective of the applicable uses, and that protect water quality through anti-degradation requirements.

The statutory basis for water quality standards is found in section 303(c) of the CWA. In accordance with section 303(c), states and tribes must adopt water quality standards to protect public health or welfare, enhance the quality of water, and serve the purposes of the Act. As defined in sections 101(a)(2) and 303(c) of the CWA, “serve the purposes of the Act” means that water quality standards: (1) should include provisions for restoring and maintaining the chemical, physical, and biological integrity of state and tribal waters; (2) offer protection, where possible, for the propagation of fish, shellfish, and wildlife, and for recreation in and on the water; and (3) consider the use and value of state and tribal waters for public water supplies, propagation of fish and wildlife, recreation, agricultural and industrial purposes, and navigation.

CWA section 303(c)(3) establishes timelines for EPA to review and approve or disapprove new or revised standards, and CWA section 303(c)(4) allows for federal water quality standards in cases where a new or revised state or tribal standard is found by EPA to be inconsistent with the CWA or where the Administrator determines that a new or revised standard is necessary to meet the requirements of the Act.

Regulations for EPA’s water quality standard implementing the requirements of section 303(c) of the CWA are found at 40 CFR part 131. These regulations, which have been in place since 1983, govern how states and authorized tribes adopt the standards needed under the CWA to protect the quality of their rivers, streams, lakes, and estuaries. Fundamentally, the regulation: (1) defines when and how designated uses may be revised; (2) requires criteria to protect those uses based on sound science; (3) requires EPA and states to prevent the degradation of water quality, except under certain circumstances; (4) requires states/tribes to review their water quality standards at least every three years (triennially) and engage the public in any revisions to water quality standards; and (5) specifies roles of states and EPA and provides administrative procedures for EPA’s review

and approval or disapproval of any new or revised state water quality standards.

## II. CHANGES UNDER CONSIDERATION

The regulation currently provides only limited guidance on certain recurring issues. As a result, EPA tends to “lead by practice” on individual actions, which has resulted in some unresolved issues that frequently recur with different fact patterns and in some resolved issues not being codified for future use. The changes that EPA is considering are intended to add or modify regulatory provisions to address certain targeted areas.<sup>2</sup>

According to their on-line briefing materials for the August 2010 listening sessions,<sup>3</sup> EPA developed the specific targeted areas by reviewing recurring issues, evolving case law, and a 1998 advance notice of proposed rulemaking. Additionally, in developing the target list, the Agency consulted with a number of state water quality standard managers and front-line EPA experts in Regional offices. Finally, the Agency narrowed their focus to areas where regulatory changes seemed most appropriate.

### A. Anti-Degradation Implementation Methods

The current regulation<sup>4</sup> requires states and authorized tribes to develop and adopt a statewide anti-degradation policy to protect existing in-stream uses for high-quality waters (water quality that is better than the minimum levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the waters) and Outstanding National Resource Waters designated by the state. The current regulation also specifies that states and authorized tribes must identify the methods by which they will implement those anti-degradation policies. The regulation does not specify what the implementation methods must include but only states that such methods must be “consistent with” 40 CFR § 131.12(a). As a result, EPA has reportedly encountered confusion over what the implementation methods are required to include and uncertainty about EPA’s oversight authority. Therefore, the Agency is considering modifying the regulation to specify minimum requirements for the anti-degradation implementation methods.

Specifically, EPA is considering adding a subparagraph (b) to 40 CFR § 131.12, which currently has a subparagraph (a) but not a subparagraph (b), that would specify minimum elements to be included in state or authorized tribe anti-degradation implementation methods. EPA is also considering requiring that anti-degradation implementation methods be adopted into the state and tribal water quality standards and thus be subject to EPA review and approval under CWA section 303(c), rather than having them simply be identified.

One of the comments expressed during the listening sessions concerned how EPA planned to implement general

anti-degradation goals as water quality standards in light of *Florida Public Interest Research Group Citizen Lobby, Inc., Save our Suwannee, Inc., et al. v. EPA, et al.*<sup>5</sup> This case limited the regulatory authority of water quality standards to address only specific amounts and concentrations of chemicals, and not to broad-based methods and policies to protect water bodies that already met numerical standards. EPA recognizes that this issue has to be considered while moving forward.

### B. Administrator’s “Determination”

The CWA provides that the Administrator may determine that a revised or new standard is necessary to meet the requirements of the Act.<sup>6</sup> If such a determination is made, EPA must promptly propose a revised or new federal standard to augment or replace the state’s or authorized tribe’s water quality standards and must promulgate the proposed standard within 90 days of proposal.<sup>7</sup> The Regulation does not specify the process by which the Administrator determines whether a state or tribe needs new or revised water quality standards. Since 1972, when this provision was enacted by Congress, there have been recurring instances of confusion or misunderstanding about what constitutes such a determination.

EPA is considering amending the regulations to clarify that an Administrator’s determination must be signed by the Administrator or his/her duly authorized designee and must



include an explicit statement that the document constitutes a determination under section 303(c)(4)(B) of the CWA.

### C. Designated Uses

Section 101(a)(2) of the Act establishes a goal, wherever attainable, of water quality that provides for the protection and propagation of fish, shellfish, and wildlife, and of recreation in and on the water. The water quality standards regulation<sup>8</sup> requires that the state or authorized tribe perform a use attainability analysis (that is, a structured scientific assessment of factors affecting attainment of designated uses) and submit this assessment to EPA in order to remove certain designated uses, including any designated use that is specified as a national goal in section 101(a)(2) of the CWA. The regulation does not, however, specify which uses, if any, must be adopted to replace the use that is being removed after a use attainability analysis.

EPA is considering clarifying that designated uses reflecting the 101(a)(2) goals of the CWA are presumed attainable unless otherwise demonstrated, and that states and authorized tribes must designate such uses unless they have conducted a use attainability analysis to support a lesser designated use and EPA has approved that action. EPA is also considering clarifying that the highest attainable use(s) closest to the section 101(a)(2) goal must be adopted if a CWA 101(a)(2) goal use is unattainable.

During the listening sessions, many comments expressed concern that this change would put an undue burden on the states, tribes, and water quality districts to demonstrate that even small ephemeral streams, diversion ditches, or culverts that still meet the definition of “water of the U.S.” does not need to meet the national water quality goals of EPA. Some other comments anticipated a future scenario where states or water quality districts would be considered to be in compliance or non-compliant with the national water quality goals, similar to attainment areas and non-attainment areas under provisions of the Clean Air Act.

### D. Variances

The current regulation<sup>9</sup> allows states and authorized tribes to adopt variances as general policies for applying and implementing their water quality standards. The regulation does not provide a definition of, a description of, or any requirements for the use of variances. EPA is considering establishing regulatory requirements for variances to ensure their proper use and to reduce the possibility of inappropriate use. In the listening sessions, concerns that the regulatory requirements for variances would be both too restrictive and too lenient were expressed.

### E. Triennial Reviews

The CWA<sup>10</sup> and the current water quality standards regulation<sup>11</sup> require states and authorized tribes to review their water quality standards at least once every three years and to

modify standards or adopt new standards as appropriate. EPA is considering revising the regulatory requirements to clarify that states and authorized tribes must solicit and consider public comments in determining the scope of each such triennial review. EPA is also considering establishing a new triennial review requirement that states and authorized tribes must evaluate whether their existing water quality criteria continue to be protective of designated uses, taking into consideration any new information that has become available since the state or tribal criteria were adopted or last revised, including EPA’s most recent national-recommended CWA 304(a) water quality criteria.

Concerns were expressed during the listening sessions over the level of effort and research that would be required to identify “new information” and whether guidance or regulations will assist the states and designated tribes in keeping abreast of new scientific information.

### F. Updates to Reflect Court Decisions

EPA is considering making three further clarifications to the water quality standards regulation to codify the results of court decisions over the years. During the listening sessions, EPA invited views from the public on these changes.

First, EPA is considering revising the definition of “water quality standards” in 40 CFR § 131.3 to reflect the results of and EPA’s actions on remand from *Florida Public Interest Research Group Citizen Lobby, Inc., Save our Suwannee, Inc., et al. v. EPA, et al.*<sup>12</sup> concerning Florida’s Impaired Water Rule (“IWR”). That court decision and EPA’s response to it more clearly define which of state or tribal provisions constitute water quality standards that need to be submitted to EPA for review and approval. EPA is considering revising 40 CFR part 131 to reflect these developments.

Second, EPA is considering specifying that compliance schedules for implementing water quality based effluent limits in NPDES permits must be adopted as part of a state’s or tribe’s water quality standards and therefore must be submitted to EPA for review and approval. This consideration results from an EPA decision regarding a 1990 appeal of an NPDES permit.<sup>13</sup>

Third, EPA is considering clarifying that states and authorized tribes must submit to EPA records of public participation that have occurred in reviewing and revising state or tribal water quality standards. These records would include public comments and the state’s or tribe’s responses to the comments. This change would reflect the results of *City of Albuquerque v. Browner*.<sup>14</sup>

## III. IMPLICATIONS

It should reasonably be expected that the proposed rulemaking changes will be directly beneficial to the quality of the nation’s waters. However, several of the proposed changes put increased pressure on understaffed and overworked state

and tribal authorities. In particular, the clarification that designated uses reflecting the 101(a)(2) goals of the CWA (i.e., protection and propagation of fish, shellfish, and wildlife and of recreation in and on the water) are presumed attainable unless otherwise demonstrated and the overall increased scrutiny of EPA over state and tribal water quality standards will force the states and tribes to either perform these demonstrations or to meet more demanding water quality goals and standards. The proposed minimum elements to be included in state or tribe anti-degradation implementation methods (once those minimum elements are actually defined) will likely have the same effect.

This increased pressure, in turn, will likely be applied by the states and tribes onto regulated industries, businesses, landowners, and any other entity potentially impacting water quality. Generally speaking, TMDLs should be expected to decrease, NPDES and POTW permits to become more restrictive, and penalties and fines for non-compliance to increase in both frequency and amount.

#### IV. OTHER RULEMAKING ACTIONS

As it moves forward and develops the proposed rulemaking, EPA asserts that it will consider the comments received during the listening sessions. EPA expects to publish the proposed rule changes in the Federal Register in the summer of 2011. Publication in the Federal Register will be followed by a 60-day public comment period to allow further input from the public. The date of publication of the final rule has not yet been determined.

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#### (Endnotes)

- 1 Water Quality Standards Regulatory Changes Fact Sheet, EPA-823-F-10002, July 2010.
- 2 Listening Session: Proposed Rulemaking to Revise the Water Quality Standards Regulation, prepared by EPA Office of Water, Office of Science and Technology, August 2010; on-line briefing available at [http://water.epa.gov/lawsregs/lawsguidance/wqs\\_listening.cfm](http://water.epa.gov/lawsregs/lawsguidance/wqs_listening.cfm).
- 3 Id.
- 4 See 40 C.F.R. § 131.12(a).
- 5 See 386 F.3d 1070 (11th Cir. 2004).
- 6 See 33 U.S.C. § 303(c)(4)(B).
- 7 See 33 U.S.C. § 303(c)(4).
- 8 See 40 C.F.R. § 131.10.
- 9 See 40 C.F.R. § 131.13.
- 10 See 33 U.S.C. § 303(c).
- 11 See 40 C.F.R. § 131.20.
- 12 Id.
- 13 See In the Matter of Star-Kist Caribe, Inc., 1990 WL 324290 (EPA), 3 EAD 172 (Apr. 16, 1990).
- 14 See 97 F.3d 415 (10th Cir. 1996).

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Wednesday, March 23, 2011  
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State Bar of Georgia  
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Presented by:

Wade Beacham, *McGriff, Seibels & Williams, Inc.*  
Ken Burrell, *Managing Partner, Synapse Services*

Please bring your own lunch. Cookies and drinks to be provided by the Section

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