CLIENT ALERT

Federal District Court Finds Clean Water Act Violations Based on Elevated Levels of 'Conductivity'

Jul.01.2014

In the latest salvo in the conductivity and water quality debate, the Southern District of West Virginia held that high levels of conductivity in surface water violate state narrative water quality standards. After two days of testimony by Plaintiffs' experts about conductivity and the effect of discharges of excessive amounts of ionic pollution on mayflies in mountain streams, the court rejected the State of West Virginia's view that conductivity is not a reliable or valid indicator of stream health. The court instead gave deference to EPA's conductivity benchmark, announced in 2011, that determined that the level at which conductivity begins to impair aquatic life is 300 µS/m.

The court also held that the "overwhelming scientific evidence" presented at trial demonstrated that levels of conductivity in excess of 1,000 µS/m, and frequently above 3,000 µS/m, cause or materially contribute to a significant adverse impact to the chemical and biological components of a stream's aquatic ecosystem in violation of state narrative water quality standards. The court's ruling is the first that establishes Clean Water Act violations based on conductivity via citizen suit enforcement.

Background

In *Ohio Valley Environmental Coalition, et al. v. Elk Run Coal Co., et al.*, 3:12-cv-00785 (S.D. W. Va.), plaintiff environmental groups sued two surface mining operations under the citizen suit provisions of the Clean Water Act and the Surface Mining Control and Reclamation Act (SMCRA).[1] Plaintiffs alleged that the mine operators violated their permits by discharging excessive amounts of dissolved solids pollution into nearby streams. In Plaintiffs' view, those discharges increase the ability of the water in those streams to pass an electrical current in contravention of West Virginia's narrative water quality standards. Those standards are violated if discharges cause or materially contribute to conditions that adversely alter the integrity of the waters of the state. The narrative standards also provide that no significant adverse impact to the chemical, physical, hydrologic, or biological components of aquatic ecosystems shall be allowed.[2]

Plaintiffs alleged that Elk Run and Alex Energy's discharges into Laurel Creek and Robinson Fork, respectively, resulted in conductivity above 1,000 µS/m, and often exceeding 3,000 µS/m, and that substantial and increasing impacts to aquatic life occur as conductivity increases beyond 300 µS/m. They also alleged that samples from the streams revealed failing West Virginia Stream Condition Index (WVSCI) scores below the biological impairment threshold score of 68.[3] In support of these arguments, Plaintiffs relied on EPA's conductivity benchmark and offered testimony from numerous scientific experts.

By contrast, Defendants argued that Plaintiffs could not use a citizen suit to effectively create a water quality-based effluent limit for conductivity, which another federal district court had determined, in *National Mining Association v. Jackson*, 880 F. Supp. 2d 119 (D.D.C. 2012), to be beyond EPA's reach. Defendants also contended that the court should defer to the West Virginia Department of Environmental Protection's (WVDEP) determinations (expressed in a guidance document) that high conductivity levels do not cause low WVSCI scores and that a low WVSCI score cannot, standing alone, determine compliance with narrative water quality standards. In particular, Defendants asserted that the court owed deference to the portion of WVDEP's guidance

that provided that the proper WVSCI at which a steam may be listed as "impaired" under Section 303(d) of the Clean Water Act is 60.6, not 68. Similarly, Defendants argued that the court owed deference to the West Virginia Legislature's instruction, in a concurrent resolution and a senate bill, that compliance with such standards must be determined holistically, not using a single measure like conductivity. Finally, Defendants presented impeachment expert testimony at trial in an attempt to discredit Plaintiffs' expert testimony about the link between conductivity and stream impairment.

The Court's Opinion

The court held a two-day trial on jurisdictional and liability issues, followed by post-trial briefing. After considering all testimony and arguments, the court held that Plaintiffs had established by a preponderance of the evidence that Defendants had committed at least one violation of their Clean Water Act and SMCRA permits by discharging high levels of ionic pollution that increased the waters' electrical conductivity in violation of the West Virginia narrative water quality standards incorporated into those permits.

As a threshold matter, the court rejected Defendants' contention that a verdict in Plaintiffs' favor would effectively create a conductivity water quality effluent limit, which EPA was prevented from doing in *National Mining Association v. Jackson*, 880 F. Supp. 2d 119 (D.D.C. 2012).[4] The court distinguished the *National Mining Association* case because it involved EPA's Final Guidance document, while the document relied on by Plaintiffs was "an entirely different document" released in March 2011, entitled "A Field-Based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams" (known as "EPA's Benchmark").[5] Although the court in *National Mining Association* determined that EPA had exceeded its authority under the Clean Water Act and SMCRA by using a guidance document to effectively establish a region-wide water quality standard for Appalachia, the court held that, in this case, EPA acted within the "core of its authority" by publishing a scientific study within the area of its expertise exploring the causal relationship between conductivity levels and biological impairment.[6] Moreover, because this case did not involve a "direct assertion of regulatory authority by the EPA," but instead was a citizen suit that used EPA's Benchmark as one of several scientific studies to support Plaintiffs' theory of general causation, the court concluded that the *National Mining Association* case was inapposite.[7]

The court also held that WVDEP's August 12, 2010 guidance denouncing the use of conductivity and WVSCI scores as water quality measures was not entitled to deference, noting that citizen suits such as this are particularly appropriate where the regulator will not command compliance. Again, in pertinent part, WVDEP's guidance instructed that high conductivity levels did not cause low WVSCI scores and that a WVSCI score, standing alone, cannot determine compliance with West Virginia narrative water quality standards but that aquatic health must be measured holistically. The court declined to substitute what it saw as "the WVDEP's general judgment that there is no causative effect between high conductivity and low WVSCI scores" for what it deemed to be "the extensive scientific evidence in this case which reveals precisely this causative effect."[8]

Moreover, the court found that WVDEP's guidance was not persuasive because it discredited the use of WVSCI scores to determine stream health without proposing an alternative. The court found that to be an abdication of enforcement responsibility that had brought WVDEP's enforcement of narrative water quality standards to "nearly a stand-still."[9] The court held instead that it would credit EPA's conclusion that a WVSCI score below the impairment threshold of 68 indicates a violation of West Virginia's narrative water quality standards. WVSCI scoring was the most recent methodology used by WVDEP and is still used by EPA, in the exercise of its Clean Water Act Section 303(d) authority, to determine whether West Virginia streams are biologically impaired.[10] The Court emphasized that EPA is the "final authority" regarding whether a state's narrative water

quality criteria are being violated for purposes of Section 303(d) and that EPA has specifically found that WVSCI scores under 68 violate West Virginia's narrative water quality criteria.

The court was not persuaded by the West Virginia Legislature's recent pronouncements (House Concurrent Resolution 111 and Senate Bill 562) that a holistic approach to stream health should not rest on conductivity. The court dismissed H.C.R. 111 as a concurrent resolution that could not modify West Virginia's narrative water quality standards outside of the constitutionally mandated procedures for modifying legislative rules. And although Senate Bill 562 was a duly enacted statute, it merely instructed WVDEP to promulgate legislative rules which will provide a new measurement of compliance with the biological component of the state's narrative water quality standards and that will include an evaluation of the holistic health of the aquatic ecosystem. Those standards have not yet been promulgated.

Having decided that it was free to exercise its own judgment without affording deference to WVDEP and the West Virginia Legislature, the court went on to credit Plaintiffs' general and specific theories of causation. The court scrutinized EPA's Benchmark, which found that salts, measured by conductivity, were a common cause of impairment of aquatic macroinvertebrates in Central Appalachian streams, ruling out other potential confounding effects like habitat. The Benchmark also found that mountaintop mining with valley fills was a substantial source of conductivity, concluding that the chronic aquatic life benchmark value for conductivity in West Virginia streams is 300 µS/m. Plaintiffs' experts testified that the Benchmark was authored by esteemed scientists and had undergone a rigorous, extensive peer-review process. The court held that, because the Benchmark falls within the agency's special area of expertise and had been subjected to peer review, the court would defer to EPA's assessment that mountaintop mining with valley fills is a substantial source of conductivity in adjacent streams and that high conductivity in streams causes significant biological impairment to (and the localized extinction of) aquatic macroinvertebrates.

However, even without giving EPA such deference, the court held that evidence of additional scientific studies and testimony presented by Plaintiffs was sufficiently compelling to support their allegation that surface mining causes high levels of conductivity that impairs aquatic health and stream quality. "In the face of such overwhelming scientific evidence," the court concluded that: (1) controlling for other potential confounding factors, high conductivity causes, or at least materially contributes to, a significant adverse impact to the chemical and biological components of aquatic ecosystems (proof of which can be shown through low WVSCI scores), and (2) surface mining causes, or at least materially contributes to, high conductivity in adjacent streams.

The court further credited Plaintiffs' expert testimony on specific causation. The court found that Plaintiffs' sampling near Defendants' operations established a pattern over time where conductivity had increased and WVSCI scores decreased. Conductivity in the subject streams was historically very low and has increased dramatically since mines have been operating in the area. In addition, the court found the taxonomic changes to the benthic macroinvertebrate community revealed that conductivity was the primary cause of biologic impairment. For example, organisms in unimpacted Appalachian streams (known as reference streams) which are sensitive to high conductivity but not very sensitive to habitat degradation, especially mayflies (Ephemerotera), were historically present in the streams near Defendants' operations but were now entirely absent in one creek and almost entirely absent from the other. Organisms known to proliferate in high conductivity environments were also present in large numbers. The court was not persuaded otherwise by Defendants' expert, who critiqued Plaintiffs' experts' conclusions but did not conduct any independent causal analysis. His testimony was, in the court's view, adequately rebutted by Plaintiffs' experts.

The court concluded that the chemical and biological components of the aquatic ecosystems in Laurel Creek and Robinson Fork have been significantly adversely affected by Defendants' discharges. The court found that the chemistry of the streams had been dramatically altered with high levels of conductivity, which the scientific testimony had demonstrated to be seriously detrimental to aquatic life, reducing species diversity and resulting in failing WVSCI scores. The court called conductivity "the canary in the coal mine," finding that, as streams lose diversity in aquatic life, sensitive species are extirpated, and only pollution-tolerant species survive.[11] In the court's view, once-thriving ecosystems that support the downstream water quality relied upon by West Virginians for drinking water, fishing and recreation, and economic uses had been impaired by Defendant's discharges. Consequently, the court held that Defendants had committed at least one violation of their Clean Water Act and SMCRA permits.

Interestingly, the court's conclusions contrast dramatically with a ruling by the West Virginia Supreme Court issued days before Judge Chambers' opinion, which held that there was not "adequate agreement in the scientific community" that conductivity, sulfates, and total dissolved solids cause harm to aquatic life and violate the state's narrative water quality standards. *See Sierra Club v. Patriot Mining Co. et al.*, No. 13-0526 (W. Va. May 30, 2014), Slip Op. at 10, *available here.*

Implications

This case marks a dramatic shift in the ongoing debate about the use of conductivity to measure water quality impacts. It is the first time a court has rejected the views and findings of both a state legislature and a state regulatory agency in favor of federal guidance and third party expert testimony presented in a citizen enforcement action. It is also the first time that elevated conductivity levels formed the basis for violations of narrative water quality standards and a Clean Water Act permit. What is unclear is whether this battle over water quality impacts from elevated levels of conductivity is limited to Appalachian streams and surface coal mining, or whether the court's findings and rationale put other categories of sediment-bearing discharges at risk in the future.

To read the court's opinion, click here.

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[1] *See* 30 U.S.C § 1270(a)(1); 33 U.S.C. § 1365(a)(1) (CWA).

[2] *See* W. Va. Code R. § 47-2-3.3.e, -3.2.i.

[3] WVSCI is a bioassessment tool that WVDEP employed from 2002 to 2010 to determine whether streams were biologically impaired under Section 303(d) of the Clean Water Act, 33 U.S.C. § 1313(d)(1)(A). As the court explained, WVDEP and the West Virginia Legislature have determined that WVSCI is not an adequate bioassessment tool, and that an alternative method of measuring stream health should be developed, but the agency has not yet proposed a replacement. EPA still relies on that tool in reviewing the state's 303(d) list of impaired waters, however, and the court determined that it was still a valid measure of stream health, particularly in the absence of an alternative.

[4] For more information about that case, *see* http://www.crowell.com/NewsEvents/AlertsNewsletters/all/Federal-Court-Rejects-EPA-Attempts-to-Regulate-Eastern-US-Coal-Mining-and-Sets-Aside-EPA-Final-Guidance.

[5] The Final Guidance at issue in *National Mining Association* drew heavily on EPA's Benchmark. For more information on EPA's Benchmark, *see* http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=233809.

[6] *See* Slip Op. at 8-9.

[7] *Id.* at 9.

[8] Slip op. at 11.

[9] *Id.* at 21.

[10] In March 2013, the EPA Region III Administrator partially approved and partially disapproved West Virginia's 2012 Section 303(d) list of impaired waters based on WVDEP's "flat refusal" to use WVSCI scores to determine whether violations of the biological narrative water quality standards are occurring. Pending completion and adoption by rulemaking of a new methodology pursuant to Senate Bill 562, WVDEP has taken the position that it is precluded from evaluating waters using WVSCI scores.

[11] Slip op. at 66.

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