
Equating Stream Structure with Function: The Fourth Circuit's Misstep in *Ohio Valley Environmental Coalition v. Aracoma Coal Co.*

INTRODUCTION

On February 13, 2009, the U.S. Court of Appeals for the Fourth Circuit in *Ohio Valley Environmental Coalition v. Aracoma Coal Co.*, reversed a decision by the Southern District of West Virginia, which had invalidated the Army Corps of Engineers' (Corps) issuance of four permits authorizing the burial of streams in conjunction with mountaintop removal coal mining projects.¹ This is the fourth time the Fourth Circuit has struck down a lower court decision disfavoring this destructive mining practice.² This decision improperly upholds the agency's disregard of its regulatory duty to conduct functional assessments of aquatic ecosystems, which forebodingly opens the door for such disregard in contexts outside of mining.

I. BACKGROUND

As its name implies, mountaintop removal (MTR) mining involves removing entire mountaintops to reach underlying coal.³ Forested summits are clear-cut, stripped of topsoil, and charged with explosives that blast away 800 to 1000 vertical feet of rock.⁴ Twenty-story-high draglines and massive bulldozers are then used to scrape away the broken rock and collect the coal.⁵ This extraction process continues until it is no

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1. *Ohio Valley Env'tl. Coal. v. Aracoma Coal Co.*, 556 F.3d 177, 185–86 (4th Cir. 2009).

2. See Sara Clark, In Brief, *In the Shadow of the Fourth Circuit: Ohio Valley Environmental Coalition v. United States Army Corps of Engineers*, 35 *ECOLOGY L.Q.* 143, 143 n.1 (2008).

3. 30 C.F.R. § 785.14(b) (2009).

4. Earthjustice, Earthjustice Seeks Supreme Court Review in Mountaintop Removal Mining Case (Aug. 27, 2009), <http://www.climateofourfuture.org/earthjustice-seeks-supreme-court-review-in-mountaintop-removal-mining-case>.

5. ERIK REECE, *LOST MOUNTAIN: A YEAR IN THE VANISHING WILDERNESS, RADICAL STRIP MINING AND THE DEVASTATION OF APPALACHIA* 14 (2006).

longer cost-effective.⁶ The exposed rock's volume naturally increases by as much as 15 to 25 percent, making it impossible to safely return all of the rock to restore the mountain to its original contour.⁷ The leftover rubble, euphemistically referred to as "overburden" and "spoil," is pushed into surrounding valleys, creating "valley fills" that obliterate headwater streams.⁸ Headwaters are small intermittent or ephemeral streams that "form the origin of larger streams or rivers"⁹ and perform critical ecological functions "related to biodiversity, water quality, and nutrient processing."¹⁰ Impacts from valley fills permeate downstream as water laden with sediment and heavy metals from the disturbed land drains from the toes of the fills into what remains of natural streams.¹¹ MTR destroys and fragments hardwood forests so rich in biodiversity that they are known as the "rain forests of North America."¹² MTR also causes enormous suffering to surrounding communities from incessant blasting, contaminated drinking water, increased flooding and erosion, and lost culture.¹³ The increased mechanization of MTR has led to steady job declines in the mining industry.¹⁴

A proposed MTR mining operation requires four environmental permits: a surface coal mining permit issued under the Surface Mining Control and Reclamation Act (SMCRA),¹⁵ and three certifications/permits issued under the Clean Water Act (CWA)¹⁶—a section 401 certification,¹⁷ a section 402 National Pollutant Discharge Elimination System (NPDES) permit,¹⁸ and a section 404 permit.¹⁹ The

6. Patrick C. McGinley, *From Pick and Shovel to Mountaintop Removal: Environmental Injustice In the Appalachian Coalfields*, 34 ENVTL. L. 21, 57 (2004).

7. *Bragg v. W. Va. Coal Ass'n*, 248 F.3d 275, 286 (4th Cir. 2001).

8. *See id.* at 286; *Bragg v. Robertson*, 72 F. Supp. 2d 642, 661–62 (S.D.W. Va. 1999).

9. *Ohio Valley Env'tl. Coal. v. Aracoma Coal Co.*, 556 F.3d 177, 186 (4th Cir. 2009).

10. *Ohio Valley Env'tl. Coal. v. U.S. Army Corps of Eng'rs*, 479 F. Supp. 2d 607, 636–37 (S.D.W. Va. 2007).

11. *See M. Palmer et al., Mountaintop Mining Consequences*, 327 SCI. 148, 148 (2010).

12. *See REECE, supra* note 5, at 4.

13. Mark Baller & Leor Joseph Pantilat, *Defenders of Appalachia: The Campaign to Eliminate Mountaintop Removal Coal Mining and the Role of Public Justice*, 37 ENVTL. L. 629, 632–33 (2007).

14. *Id.* at 633.

15. *Ohio Valley Env'tl. Coal. v. Aracoma Coal Co.*, 556 F.3d 177, 189–90 (4th Cir. 2009).

16. The CWA is implemented through two permitting programs: the National Pollutant Discharge Elimination System (NPDES) authorized by section 402, 33 U.S.C. § 1342 (2006) and administered by the Environmental Protection Agency (EPA) and authorized states and the "dredge and fill" program authorized by section 404, 33 U.S.C. § 1344 (2006) and administered primarily by the Corps, with veto authority by the EPA *Id.* §§ 1344(a), (c).

17. *Ohio Valley Env'tl. Coal.*, 556 F.3d at 190; *see* 33 U.S.C. § 1341.

18. *Ohio Valley Env'tl. Coal.*, 556 F.3d at 190; *see* 33 U.S.C. §§ 1342, 1362(12).

19. *Ohio Valley Env'tl. Coal.*, 556 F.3d at 190; *see* 33 U.S.C. § 1344(a). On April 1, 2010, the EPA issued comprehensive guidance clarifying section 402 and section 404 CWA permitting requirements for MTR and other surface coal mining operations and identifying improvements

Corps “indirectly regulates the mountaintop mining industry via [section] 404.”²⁰ A section 404 permit requires environmental review pursuant to the CWA and the National Environmental Policy Act (NEPA).²¹ The permitting process also involves an intermediate form of NEPA review, called the “mitigated EA (Environmental Assessment),” which the Corps uses when it decides that mitigation can reduce the adverse environmental impacts of a proposed project to below a significance threshold.²² This structure enables the Corps to avoid preparing an Environmental Impact Statement (EIS) and instead allows it to issue a mitigated Finding of No Significant Impact (FONSI).²³ The mitigated EA and mitigated FONSI have been commonly used in the MTR permitting context.²⁴

During 2005 and 2006, the Corps issued individual section 404 permits to four MTR mining projects in southern West Virginia after preparing a mitigated EA and issuing a mitigated FONSI for each permit.²⁵ Collectively, the contested permits authorized the creation of twenty-three valley fills and twenty-three sediment ponds, which would impact more than thirteen miles of headwater streams.²⁶ The Ohio Valley Environmental Coalition (OVEC) and two other environmental organizations²⁷ challenged the permits, alleging substantive and procedural violations of the CWA and NEPA, which are subject to judicial review under the Administrative Procedure Act (APA).²⁸ In 2007, the district court held that the Corps issued the permits in violation

that will reduce adverse impacts on Appalachian watersheds. *See* EPA, DETAILED GUIDANCE: IMPROVING EPA REVIEW OF APPALACHIAN SURFACE COAL MINING OPERATIONS UNDER THE CLEAN WATER ACT, NATIONAL ENVIRONMENTAL POLICY ACT, AND THE ENVIRONMENTAL JUSTICE EXECUTIVE ORDER (2010). The high standards set forth in the science-based guidelines are expected to significantly curtail the issuance of valley fill permits. *See id.* at 24–27; Tom Zeller, Jr., *E.P.A. to Limit Water Pollution From Mining*, N.Y. TIMES, Apr. 2, 2010, at A15.

20. *Ohio Valley Envtl. Coal. v. Hurst*, 604 F. Supp. 2d 860, 869. (S.D.W. Va. 2009).

21. Under the CWA, the Corps may only grant a section 404 permit if it can demonstrate that the project “will not have an unacceptable adverse impact either individually or in combination with known and/or probable impacts of other activities affecting the ecosystems of concern.” 40 C.F.R. § 230.1(c) (2009). Under NEPA, the Corps must evaluate “[w]hether the action is related to other actions with individually insignificant but cumulatively significant impacts.” *Id.* § 1508.27(b)(7).

22. *Ohio Valley Envtl. Coal. v. U.S. Army Corps of Eng’rs*, No. 3:08-0979, 2009 WL 4261321, at *7 (S.D.W. Va. Nov. 24, 2009).

23. *Ohio Valley Envtl. Coal.*, 556 F.3d at 191–92.

24. *Ohio Valley Envtl. Coal.*, 2009 WL 4261321 at *7.

25. *Ohio Valley Envtl. Coal.*, 556 F.3d at 187.

26. *Id.*

27. Coal River Mountain Watch and West Virginia Highlands Conservancy.

28. *See* 5 U.S.C. § 706 (2006).

of the CWA, NEPA, and APA, and granted OVEC injunctive and declaratory relief.²⁹ The Corps and four coal companies appealed.

II. FOURTH CIRCUIT DECISION

In a 2-1 decision, the Fourth Circuit reversed the district court decision, holding that the Corps had properly issued the section 404 permits.³⁰ The court relied heavily on *Auer* or *Seminole Rock* deference, a “highly deferential” type of review used when a court reviews an agency’s interpretation of its own regulations.³¹

A. *The Majority Opinion*

On two issues, a unanimous court gave deference to the agency’s determination about the scope of its NEPA analysis and its interpretation of CWA regulations. First, the court held that the Corps’ decision to narrow the scope of its NEPA analysis to the “underdrain system,” which includes filled jurisdictional streams and their banks and excludes the upland valleys where fills would be placed, was reasonable and entitled to deference.³² The court determined that “upland environmental effects are ‘not essentially a product of Corps action’” and thus including them would “encroach on the regulatory authority” of the West Virginia Department of Environmental Protection (WVDEP), which controls “all aspects of the valley fill projects beyond the filling of jurisdictional waters.”³³ The court also unanimously held that stream segments connecting valley fills to downstream sediment ponds were not jurisdictional “waters of the United States” subject to section 402 NPDES permitting, but were instead “unitary ‘waste treatment systems’” exempt from section 402.³⁴ Consequently, the Corps had not exceeded its regulatory authority under section 404 by permitting the discharge of pollutants into these segments.³⁵

A majority of the court made three additional findings: (1) granting deference to another key agency interpretation of CWA regulations, (2) upholding the Corps’ proposed mitigation measures, and (3) approving the Corps’ cumulative impacts analysis.

29. *Ohio Valley Envtl. Coal. v. U.S. Army Corps of Eng’rs*, 479 F. Supp. 2d 607, 614 (S.D.W. Va. 2007)

30. *See Ohio Valley Envtl. Coal.*, 556 F.3d at 217.

31. *Id.* at 193 (citing *Auer v. Robbins*, 519 U.S. 452, 461 (1997); *Bowles v. Seminole Rock & Sand Co.*, 325 U.S. 410, 413–14 (1945)).

32. *Id.* at 194–97.

33. *Id.* at 197.

34. *Id.* at 210.

35. *Id.*

First, the court held that it was not arbitrary or capricious for the agency to use stream structure as a surrogate for assessing stream function,³⁶ despite binding CWA Guidelines that the Corps “[d]etermine the nature and degree of effect that the proposed discharge will have, both individually and cumulatively, on the structure *and function* of the aquatic ecosystem and organisms.”³⁷ The court determined that because the regulation does not specifically define “function” or explain “how ‘structure’ and ‘function’ are to be assessed,” the term is ambiguous and thus deserving of deference to agency interpretation.³⁸ The court held that in evaluating the stream functions that will be lost, the Corps reasonably used its “best professional judgment” and relied on an internal agency guidance document, the 2002 Regulatory Guidance Letter (RGL 02-02), which permits structurally based stream mitigation on a one-to-one replacement scheme when a functional stream assessment is “not practical.”³⁹ The court found that the agency had actually exceeded the requirements under the RGL 02-02 standard because its mitigation plans involved “greater than one-to-one replacement schemes.”⁴⁰

Second, the majority held that the Corps had adequately supported its findings of no significant degradation under the CWA and its issuance of mitigated FONSI under NEPA.⁴¹ The court found that the Corps’ proposed mitigation measures were sufficient to satisfy the CWA because they were based on “the most appropriate and practicable means of compensating for anticipated impacts and losses of value.”⁴² The court determined that, regardless of the important ecological role performed by headwater streams, the Corps is not obligated to distinguish between headwater and other kinds of streams when devising mitigation measures.⁴³ Moreover, the court held that “where on-site or in-kind functional mitigation is not practicable,” the Corps’ guidance, which takes a “holistic watershed approach,” allows “off-site or out-of-kind mitigation” that focuses on improving overall watershed health.⁴⁴ While recognizing that the probable success of stream creation programs was “limited,” the court noted that one successful stream had been created in

36. *Id.* at 198–99.

37. 40 C.F.R. § 230.11(e) (2009) (emphasis added).

38. *See Ohio Valley Envtl. Coal.*, 556 F.3d at 199.

39. *Id.* at 203–04.

40. *Id.* at 204.

41. *Id.* at 207.

42. *Id.* at 205–06.

43. *Id.* at 203.

44. *Id.* at 204–05.

Kentucky,⁴⁵ and that “the novelty of a mitigation measure alone cannot be the basis of our decision to discredit” the practice.⁴⁶ The court found that the Corps’ proposed mitigation strategies satisfied NEPA because the agency had sufficiently articulated how adverse effects would be mitigated to insignificance through stream enhancement, restoration, and creation measures that would result in “no net loss of habitat.”⁴⁷

Finally, the court majority held that the Corps had not acted arbitrarily or capriciously in performing its cumulative impacts analysis, as required by both the CWA and NEPA.⁴⁸ The court rejected the district court’s determination that the analysis was defective because the agency improperly relied on mitigation to eliminate adverse impacts.⁴⁹ While acknowledging that the Corps’ finding of no cumulative adverse impacts “does lean, to some extent, on mitigation,” the court determined that it did not do so in an inappropriately “perfunctory” or “conclusory” way.⁵⁰ The Corps had not simply applied a “mitigated to insignificance” analysis, which would have been inadequate, but it had also supported its conclusion of no adverse impacts with findings from the WVDEP’s section 401 certification and the Corps’ SMCRA permit.⁵¹

B. The Dissent

The dissent strongly disagreed with the majority’s finding that the Corps had adequately supported its FONSI under the CWA and its mitigated FONSI under NEPA.⁵² The dissent held that the agency “skirt[ed]” its regulatory duty to conduct a functional assessment of the streams the proposed valley fills would impact.⁵³ By proceeding instead with a one-to-one mitigation strategy that failed to account for lost stream function, the Corps “undermine[d] the goal of mitigation: replacement of what is being lost.”⁵⁴ According to the dissent, the Corps abused its discretion in refusing to “offer an interpretation of the term ‘function’” as used in the CWA Guidelines,⁵⁵ and by basing its permitting decisions on an internal guidance document that conflicts with the plain

45. *Id.* at 205. This successfully created stream was not, however, a headwater stream. *Id.* at 225 (Michael, J., dissenting).

46. *Id.* at 205 (majority opinion).

47. *See id.* at 202–03, 206.

48. *Id.* at 207–09.

49. *Id.*

50. *Id.* at 208.

51. *Id.*

52. *See id.* at 224 (Michael, J., dissenting).

53. *Id.*

54. *Id.* at 217.

55. *Id.* at 220 n.2.

language of the regulations.⁵⁶ Because the Corps had failed to show that the permitted valley fills would not significantly degrade “waters of the United States,” as required by the CWA, the Corps “likewise failed to establish that the projects [would] have no significant adverse environmental impact” under NEPA, and thus failed to justify its refusal to issue an EIS for each permit.⁵⁷ The dissent would affirm the district court judgment rescinding the permits and remanding them to the Corps for “further consideration” consistent with the CWA Guidelines and NEPA.⁵⁸

The Fourth Circuit denied OVEC’s request for rehearing en banc by a 4-3 vote, with four additional judges abstaining.⁵⁹ The two dissenting opinions emphasized the “potentially irreversible” and “profound” adverse impacts the permits will have on the region,⁶⁰ and critiqued the Corps’ practice of using stream structure as a substitute for function because it “appears to read the word ‘function’ right out of the regulation,”⁶¹ and “fatally undercuts the purpose of the regulations.”⁶² OVEC has filed a Writ of Certiorari with the U.S. Supreme Court challenging the Corps’ failure to evaluate the impact of valley fills on stream function.⁶³

III. ANALYSIS

The Fourth Circuit’s decision has been aptly characterized as “a dud,” which reversed the “forceful, brilliant, creative, and instructive effort in the district court.”⁶⁴ The court inappropriately sanctioned the Corps’ artificially narrow scope of its NEPA analysis, which, among other things, contravenes the agency’s own regulations and practices.⁶⁵ Additionally, the court’s straight-faced deference to the Corps’ incredible view that it may treat certain stream segments as part of a “unitary ‘waste treatment system[,]’” rather than jurisdictional waters, runs afoul of the CWA’s legislative history, regulations, and controlling precedent.⁶⁶

56. *Id.* at 217–19.

57. *Id.* at 225.

58. *Id.* at 217–18.

59. *Ohio Valley Env'tl. Coal. v. Aracoma Coal Co.*, 567 F.3d 130, 131 (4th Cir. 2009).

60. *Id.* at 132–33 (Wilkinson, J., dissenting).

61. *Id.* at 133.

62. *Id.* at 134 (Michael, J., dissenting).

63. Petition for Writ of Certiorari at i, *Ohio Valley Env'tl. Coal. v. Aracoma Coal Co.*, Nos. 07-1355(L), 07-1479, 07-1480, 07-1964 (U.S. Aug. 28, 2009).

64. William H. Rodgers Jr., *NEPA's Insatiable Optimism*, 39 ENVTL. L. REP. (Env'tl. L. Inst.) 10,618, 10,622 (2009).

65. See Corrected Brief of Plaintiffs-Appellees at 24, *Ohio Valley Env'tl. Coal. v. Aracoma Coal Co.*, 556 F.3d 177 (4th Cir. 2008) (No. 07-1355).

66. See *id.*

But most alarming and ominous is the Fourth Circuit's decision to allow the Corps to issue permits that will bury miles of streams under hundreds of feet of rubble without assessing the functions of the streams that will be lost and the cumulative impacts of the destruction on the aquatic ecosystem. The court sanctioned agency conduct that is effectively "ripping the heart out of the Clean Water Act."⁶⁷ Under the binding CWA Guidelines, structure and function are two entirely separate concepts.⁶⁸ Where structural attributes describe how a stream looks at a given point in time, functional measures describe how a stream works over time.⁶⁹ "Healthy streams are living, functional systems, not simple channels that can be described based on their size and shape."⁷⁰ The Corps' use of structure as a surrogate for function is akin to a doctor taking a patient's height and weight, and using these measurements as surrogates for blood pressure and heart rate.⁷¹ The evaluation is "completely irrational and scientifically indefensible"⁷² and underestimates the important ecological roles performed by headwater streams.⁷³ The fact that the Environmental Protection Agency (EPA) is currently creating a separate functional stream assessment procedure, which will require the Corps to evaluate numerous stream functions that it did not measure for any of the challenged permits, further undermines the claim that structure is an adequate surrogate for function.⁷⁴ If it were, it would be unnecessary to "undertak[e] the expensive and time-consuming effort of developing an independent functional protocol."⁷⁵

CONCLUSION

The Supreme Court should grant OVEC's Writ of Certiorari and reverse the Fourth Circuit's decision. This case has immense significance for the Appalachian region and the nation as a whole. The Corps has approved numerous section 404 permits for other MTR projects in the

67. Earthjustice, *supra* note 4.

68. Corrected Brief of Plaintiffs-Appellees, *supra* note 65, at 40.

69. Structural attributes include channel shape, water depth, habitat features, and number of insects or other species measured in one sampling trip. Functional attributes include the input of organic matter over time, organism growth rates, and nutrient cycling capacity. *The Impacts of Mountaintop Removal Coal Mining on Water Quality in Appalachia: Hearing Before the Subcomm. on Water and Wildlife of the S. Comm. on Env't and Pub. Works*, 111th Cong. 8 (2009) (testimony of Margaret A. Palmer, Ph.D., Univ. of Md. Ctr. for Env'tl. Sci.).

70. *Id.*

71. *See id.*

72. Corrected Brief of Plaintiffs-Appellees, *supra* note 65, at 41.

73. *See* Palmer et al., *supra* note 11, at 148.

74. *Ohio Valley Env'tl. Coal. v. Aracoma Coal Co.*, 556 F.3d at 219 (4th Cir. 2009) (Michael, J., dissenting).

75. *Id.*

region based on the same flawed legal theory the Fourth Circuit upheld in this case.⁷⁶ If not overturned, this decision “will have far-reaching consequences for the environment of Appalachia”⁷⁷ by allowing the Corps to continue to permanently destroy critical headwater streams—committing them to the fate of a mining waste dumping ground—“without any assessment of the life-giving functions that will be lost, and without a proper determination of how such loss might be mitigated.”⁷⁸ The decision also forebodingly “opens the door” for the Corps to ignore its regulatory duty to conduct functional assessments of aquatic ecosystems in other contexts outside of mining.⁷⁹ The Corps should not be permitted “to read the word ‘function’ right out of” the CWA Guidelines;⁸⁰ indeed, “the word is one that matters.”⁸¹

Emily Sangi

76. *Id.* at 187 (majority opinion).

77. *Id.* at 226 (Michael, J., dissenting).

78. *See* Petition for Writ of Certiorari, *supra* note 63, at 30.

79. *See id.*

80. *See* Ohio Valley Envtl. Coal. v. Aracoma Coal Co., 567 F.3d 130, 133 (4th Cir. 2009) (Wilkinson, J., dissenting).

81. Petition for Writ of Certiorari, *supra* note 63, at 30.

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