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## Writing a Check That the State Can't Cash: Water Pollution from Coal Mining and the Imminent and Inevitable Failure of the West Virginia Special Reclamation Water Fund

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I. INTRODUCTION

After decades of financial decadence and total dominance over political processes, coal companies have hit desperate times. Cheap, abundant natural gas recently emerged, driving demand for coal for energy production and coal prices down.<sup>1</sup> The United States Environmental Protection Agency (EPA) finally moved to more stringent emissions limitations for coal-fired power plants under the Clean Air Act.<sup>2</sup> Concurrently, the public demanded improvements in safety technology after several tragic mining accidents resulted from lax safety measures and a corporate culture of recklessness.<sup>3</sup>

During this time, environmental citizen groups worked to ensure that mining companies no longer violated the Clean Water Act (CWA), particularly with the mountaintop removal (MTR) mining method. Mining companies that previously enjoyed lax enforcement of water violations by state environmental protection agencies and the EPA can no longer discharge unlawful levels of pollutants into streams without facing lawsuits by citizen groups.<sup>4</sup> Mining companies pay steep penalties for these violations.<sup>5</sup> Courts are increasingly skeptical of the practice of MTR and its compatibility with the CWA, concluding that what the law

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1. Mark Jaffe, *Gas Moves in on Coal*, DENVER POST, Oct. 23, 2009, at B5; Steven Mufson, *Alpha Natural Resources Will Close 8 Mines, Lay Off Hundreds*, WASH. POST, Sept. 19, 2012, at A16.

2. Elizabeth Weise, *Air Quality Rules Go into Effect*, USA TODAY (Dec. 22, 2011), [http://usatoday30.usatoday.com/MONEY/usaedition/2011-12-22-mercury-rule\\_ST\\_U.htm](http://usatoday30.usatoday.com/MONEY/usaedition/2011-12-22-mercury-rule_ST_U.htm).

3. See Steven Mufson, *Coal Firms' Profits Fall as the Cost of Mining Increases*, WASH. POST, Oct. 26, 2012, at A17.

4. See Dan Lowrey, *Arch Coal Agrees To Settle Selenium Pollution Suite for \$2M*, SNL COAL REPORT, Oct. 10, 2011, available at <http://www.lexisnexis.com>.

5. See David A. Fahrenthold, *Mining Giant To Pay \$20 Million EPA Fine: Runoff Polluted Waters in W. Va., Ky.*, WASH. POST, Jan. 18, 2008, at A16; *Arch Coal Clean Water Act Settlement*, EPA, <http://www2.epa.gov/enforcement/arch-coal-clean-water-act-settlement> (last visited Nov. 25, 2013); Jeffrey Tomich, *Patriot Coal Agrees To Settle Selenium Pollution Claims*, ST. LOUIS POST-DISPATCH (Jan. 19, 2012), <http://www.stltoday.com/business/local/patriot-coal-agrees-to-settle-selenium-pollution-claims/article3fa1908e-422b-11e1-92bc-0019bb30f31a.html>. The author notes that she represented West Virginia in the finalization of *United States v. Arch Coal, Inc.*, 829 F. Supp. 2d 408 (S.D. W. Va. 2011), but she was not involved in the negotiation or settlement of the case. The cited material contains information that is available to the public.

requires is sometimes contrary to “substantial scientific evidence.”<sup>6</sup> Academic research on stream form and function concluded that streams buried through MTR cannot be adequately mitigated or replaced by man-made streams under United States Army Corps of Engineers permitting.<sup>7</sup> Coal companies rely upon stream mitigation as an essential component for the continued viability of MTR.

The environmental challenges over the last decade have been expensive. Mine site water treatment costs millions of dollars to construct and operate.<sup>8</sup> Several large coal companies have posted significant quarterly losses.<sup>9</sup> One large company has filed for bankruptcy and agreed to cease MTR mining.<sup>10</sup> Layoffs abound.<sup>11</sup> Despite the grim outlook for coal companies, Appalachian coal-mining states face worse situations.

Throughout this century, West Virginia has relied upon the taxes and jobs provided through coal mining. West Virginia’s blind faith that coal mining would always “keep the lights on” may very well lead the state with some of the oldest,<sup>12</sup> poorest,<sup>13</sup> and unhealthiest<sup>14</sup> residents in the

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6. See, e.g., *Ohio Valley Envtl. Coal., Inc. v. U.S. Army Corps of Eng’rs*, 883 F. Supp. 2d 627, 645 (S.D. W. Va. 2012).

7. See Emily S. Bernhardt & Margaret A. Palmer, *The Environmental Costs of Mountaintop Mining Valley Fill Operations for Aquatic Ecosystems of the Central Appalachians*, 1223 ANNALS N.Y. ACAD. SCI. 39, 39-40 (2011); Michael B. Griffith et al., *The Effects of Mountaintop Mines and Valley Fills on the Physicochemical Quality of Stream Ecosystems in the Central Appalachians: A Review*, SCI. TOTAL ENV’T, Feb. 15, 2012, at 1, 10; see also Kyle J. Hartman et al., *How Much Do Valley Fills Influence Headwater Streams?*, 532 HYDROBIOLOGIA 91, 91-102 (2005); T. Ty Lindberg et al., *Cumulative Impacts of Mountaintop Mining on an Appalachian Watershed*, 108 PROC. NAT’L ACAD. SCI. 20,929, 20,929 (2011); Natasha Gilbert, *Mountain Mining Damages Streams*, 466 NATURE 806, 806 (2010).

8. Ken Ward Jr., *Alpha To Spend \$50 Million on Selenium Cleanups*, CHARLESTON GAZETTE (Dec. 13, 2011), <http://www.wvgazette.com/News/201112120123>; Barry Cassell, *Patriot Says Selenium Court Ruling Will Cost It \$50 Million*, SNL COAL REPORT, Oct. 25, 2010, available at <http://www.lexisnexis.com>; Press Release, EPA, *Consol To Pay \$5.5 Million To Settle Clean Water Act Violations* (Mar. 14, 2001), <http://yosemite.epa.gov/opa/admpress.nsf/0/16876ff1c4fafa4385257853005cf373?OpenDocument> (noting \$200 million pollution clean-up initiative).

9. Dan Lowrey, *CONSOL Expects 1st Loss Since 2007 on Coal Mine Idlings, Operational Troubles*, SNL COAL REPORT, Oct. 22, 2012, available at <http://www.lexisnexis.com>; Dan Lowrey, *Patriot Coal Reports Hefty Q2 Loss on Asset Retirement Charges, Slumping Revenues*, SNL COAL REPORT, Aug. 10, 2012, available at <http://www.lexisnexis.com>; Janet Patton, *Arch Coal Lays Off Nearly 600 Kentucky Miners*, LEXINGTON HERALD-LEADER (June 21, 2012), <http://www.kentucky.com/2012/06/21/2233013/arch-coal-lays-off-500-kentucky.html>.

10. Bill Archer, *Patriot Coal To Stop Mountaintop Removal Mining*, BLUEFIELD DAILY TELEGRAPH, Nov. 16, 2012, at 1; Jeffrey Tomich, *Patriot Coal Declares Bankruptcy*, ST. LOUIS POST-DISPATCH, July 10, 2012, at M1.

11. Mufson, *supra* note 1; Patton, *supra* note 9; Erich Schwartzel, *CONSOL Idles Coal Operations*, PITTSBURGH POST-GAZETTE, Mar. 8, 2012, at C1.

12. See Paul J. Nyden, *W.Va. Faces Possible Caregiver Shortage*, CHARLESTON GAZETTE (June 19, 2011), <http://www.wvgazette.com/News/201106191318>; Dan Sewell, *Appalachia’s Aging Population Is Rising Fast*, CHARLESTON GAZETTE, Feb. 21, 2012, at 1A.

nation into even harder times. West Virginia now faces a very real possibility that it will be solely responsible for liabilities estimated to exceed \$1.925 trillion and potentially exceed \$10 trillion, a conservative estimate for 20 years of treatment of the pollutant selenium alone if the coal industry collapses.<sup>15</sup>

Setting aside the potential risk of wholesale selenium treatment, West Virginia currently estimates that it will need \$33.1 million for capital construction costs and \$6 million in annual treatment costs to treat water pollution discharges at just those existing sites that previous mining companies have already abandoned.<sup>16</sup> That estimate does not take into account the potential for a plethora of future abandoned sites or the likelihood of industry-wide bankruptcies. The existing abandoned sites will need treatment by the state for at least the next 35 years.<sup>17</sup> At the end of 2012, the West Virginia Special Reclamation Water Fund (Water Fund) had a total of \$9.4 million in assets.<sup>18</sup> There are 553 permits in West Virginia requiring treatment by the state.<sup>19</sup> The number of new sites requiring treatment by the state has increased steadily since 2001.<sup>20</sup>

This Article evaluates the viability of the Water Fund in light of recent federal court decisions that require West Virginia to issue permits to itself under the National Pollutant Discharge Elimination System (NPDES) structure of the CWA for abandoned mine sites subject to the federal Surface Mining Control and Reclamation Act (SMCRA).<sup>21</sup>

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13. Louise Boyle, *If You Live in West Virginia, Look Away Now! The Most and Least Livable States in America (and If You're Thinking of Moving, Utah Is the Best Place To Be)*, MAIL ONLINE (Aug. 13, 2012), <http://www.dailymail.co.uk/news/article-2187547/if-live-west-virginia-look-away-the-livable-states-america.html>; Michael B. Sauter et al., *America's Richest (and Poorest) States*, 24/7 WALL ST. (Sept. 19, 2013), <http://247wallst.com/special-report/2013/09/19/americas-richest-and-poorest-states/7/> (ranking West Virginia the forty-eighth poorest state).

14. Boyle, *supra* note 13; Jared Hunt, *Report Says Healthier Choices Would Cut W. Va.'s Costs*, CHARLESTON DAILY MAIL, Jan. 18, 2012, at 2A.

15. See Paul Ziemkiewicz, *Estimated Cost of Selenium Treatment at West Virginia Active Mining Sites Using Zero Valent Iron and Fluidized Bed Reactor Technology 7* (Oct. 3, 2010) (unpublished report) (on file with author).

16. Special Reclamation Fund Advisory Council, *Report of the Special Reclamation Fund Advisory Council 15* (Jan. 31, 2012) (unpublished report) (on file with author).

17. *Id.* at 17.

18. Special Reclamation Fund Advisory Council, *Report of the Special Reclamation Fund Advisory Council 16* (Jan. 9, 2013) (unpublished report) (on file with author).

19. *Id.* at 6.

20. See *id.* at 24.

21. See, e.g., *W. Va. Highlands Conservancy, Inc. v. Huffman* (*Huffman I*), 625 F.3d 159 (4th Cir. 2010), *aff'g* 588 F. Supp. 2d 678 (N.D. W. Va. 2009).

## II. DESIGNED TO FAIL—THE DEFICIENCIES IN WEST VIRGINIA’S RECLAMATION BONDING AND SPECIAL RECLAMATION TAX STRUCTURES

Coal mining wreaks havoc on the environment. A coal operator blasts, digs, and extracts tons of waste material in order to access a seam of coal, which may be only a few feet thick. The process exposes material that has lain dormant within the earth for millions of years to modern day elements. Pollutants such as iron, aluminum, arsenic, manganese, and selenium leach out of the earth in elevated concentrations that never would have been released under natural conditions. Rainwater and groundwater serve as vehicles to move these CWA-recognized pollutants from the mine site to water bodies. What nature has tucked away and isolated from the world over millions of years, man permanently exposes to the elements in seconds.

Congress itself recognized the environmental dangers inherent in coal mining. In an attempt to balance the environmental needs of the country with the economic ones, Congress enacted SMCRA in 1978.<sup>22</sup> States have no authority to regulate surface mining unless the federal Office of Surface Mining (OSM) Reclamation and Enforcement finds that the state has established and maintains an appropriate state program—one that is at least as stringent as federal law. The federal government delegated authority to West Virginia in 1981.<sup>23</sup> As a primacy state, West Virginia has the authority to enforce its own SMCRA program, which is the West Virginia Surface Coal Mining Reclamation Act (SCMRA).<sup>24</sup> The West Virginia Department of Environmental Protection administers this program through its Division of Mining and Reclamation (WVDMR), along with the water program for mining permits. West Virginia must implement its state program laws and regulations so that West Virginia’s program is no less stringent than the federal SMCRA.

Much of SMCRA’s requirements deal with reclamation, out of concern for abandoned or unreclaimed mine sites. West Virginia’s program requires that mining operators reclaim mined lands and restore the sites to a condition capable of supporting the uses that it could support before mining or to “higher and better uses.”<sup>25</sup> The mine

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22. 30 U.S.C. §§ 1201-1328 (2006).

23. Conditional Approval of the Permanent Program Submission from the State of West Virginia Under the Surface Mining Control and Reclamation Act of 1977, 46 Fed. Reg. 5915 (Jan. 21, 1981).

24. W. VA. CODE ANN. §§ 22-3-1 to -33 (LexisNexis 2009).

25. *Id.* § 22-3-10(a)(3)(A)(i); *see also* 30 U.S.C. § 1265(b)(2).

operators must create reclamation plans to meet these use requirements.<sup>26</sup> Through the structure of SMCRA, WVDNR must approve all reclamation plans prior to issuing a SCMRA permit. Through the CWA, a separate federal law with state counterparts, mine operators and land owners must meet water quality standards (WQS) in discharges of water from mine sites.<sup>27</sup> Reclamation plans must ensure that the mine sites do not create water pollution problems.<sup>28</sup> SMCRA does not relieve a mine operator of its CWA responsibilities.

In order to ensure that a mine operator does not leave the state with unreclaimed lands, SMCRA requires that mine operators post a performance bond in an amount “sufficient to assure the completion of the reclamation plan” if West Virginia has to complete the reclamation.<sup>29</sup> West Virginia’s program is an alternative bonding system. This structure is composed of bonding and a taxation system based on the number of tons of coal extracted from the state. West Virginia’s program allows a site-specific performance bond that “shall reflect the relative potential cost of reclamation associated with” the mining activities.<sup>30</sup> The legislature established in 1991 that site-specific reclamation bonds could not exceed \$5000 per acre.<sup>31</sup> There is no inflationary adjustment for bonding. Moreover, the legislature has not adjusted the bond ceiling of \$5000 per acre since 1991, even after MTR became the primary mining method of choice and the higher costs associated with water pollution from mine sites became apparent to the industry and the state.

If a mining company mines the site, adequately reclaims the land, and sufficiently meets water quality standards on any discharges emanating from the site, then WVDNR releases the bond and the inquiry ends there.<sup>32</sup> However, if a mining company goes bankrupt or is otherwise unable or unwilling to remediate the site sufficiently, the mine company forfeits its bond.<sup>33</sup> As discussed later in this Article, WVDNR must then remediate the site and treat any of the discharges to meet WQS.<sup>34</sup> If the forfeited bond money was not sufficient to pay for the

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26. W. VA. CODE ANN. § 22-3-10.

27. *See* 33 U.S.C. § 1313 (2006).

28. W. VA. CODE ANN. § 22-3-10.

29. 30 U.S.C. § 1259; W. VA. CODE ANN. § 22-3-11.

30. W. VA. CODE ANN. § 22-3-12.

31. *Id.* This Code section superseded the prior Code section (W. Va. Code § 22A-3-11), which was the bonding section promulgated in 1991. The bonding ranges have remained the same from 1991 through the present.

32. *Id.* § 22-3-23.

33. *Id.* § 22-3-17(b).

34. *See Huffiman I*, 625 F.3d 159, 163 (4th Cir. 2010), *aff’g* 588 F. Supp. 2d 678 (N.D. W. Va. 2009).

expenses incurred by WVDNR to remediate, then money must be withdrawn from one of two funds established to remediate unreclaimed sites: the West Virginia Special Reclamation Fund (SRF) or the Water Fund.<sup>35</sup>

The SRF and the Water Fund are funded through taxes on the industry for the extraction of coal within the state. When the program first began, only one fund existed. Coal operators initially paid \$0.03 per ton of coal extracted into the SRF.<sup>36</sup> Under the SRF, \$0.03 per ton was supposedly adequate to cover all abandoned mine sites for land and water treatment after bond forfeiture. By statute, WVDNR could spend no more than 25% of the SRF amount for water treatment annually.<sup>37</sup> This severely limited WVDNR's ability to treat water from abandoned mine sites.

Over time, the cost of treating the existing water problems grew. Each year, WVDNR was required to submit an actuarial report to the legislature so that the legislature could assess the financial viability of the SRF and increase tax rates accordingly.<sup>38</sup> Apparently sensing that the tax rates would have to dramatically increase from \$0.03 per ton to treat the water liabilities from acid mine drainage (AMD), WVDNR instructed the actuarial firm that the state had no legal duty to treat water at abandoned sites.<sup>39</sup> Consequently, the actuarial report addressed the viability of the SRF as though WVDNR had no duty to treat the water. Because the actuarial report deemed the SRF fiscally sound (and due to political pressure), the legislature did not increase the reclamation tax. This went on for several decades.

In reality, the SRF was woefully underfunded from the beginning. In the mid-1980s, the federal General Accounting Office concluded that West Virginia's reclamation bonds only paid 46% of the actual costs of reclamation after bond forfeiture.<sup>40</sup> By 1989, actual remediation costs exceeded \$2000 per acre, but permit bonds covered only \$1000 per acre.<sup>41</sup> West Virginia and the OSM estimated a \$6.2 million liability to

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35. See West Virginia *ex rel.* W. Va. Highlands Conservancy, Inc. v. W. Va. Div. of Env'tl. Prot., 447 S.E.2d 920, 925 (W. Va. 1994).

36. W. VA. CODE ANN. § 22A-3-11 (1990) (superseded by W. VA. CODE ANN. § 22-3-11).

37. West Virginia *ex rel.* Laurel Mountain/Fellowsville Area Clean Watershed Ass'n v. Callaghan, 418 S.E.2d 580, 584 (W. Va. 1992).

38. See *W. Va. Highlands Conservancy*, 447 S.E.2d at 922 n.9.

39. *Id.*

40. Craig B. Giffin, *West Virginia's Seemingly Eternal Struggle for a Fiscally and Environmentally Adequate Coal Mining Reclamation Bonding Program*, 107 W. VA. L. REV. 105, 134 (2004).

41. *Id.*

remediate existing abandoned sites.<sup>42</sup> In 1991, OSM threatened to take over West Virginia's SMCRA program because of the bonding deficiencies.<sup>43</sup>

In 1992, environmental groups successfully won an appeal to the Supreme Court of Appeals of West Virginia, where the court determined that the state had a nondiscretionary duty to treat water discharges from abandoned mine sites.<sup>44</sup> In ruling against the state for its failure to treat AMD at a forfeited site, the court stressed to the state the importance of proper reclamation bonding by stating, "We note that this case illustrates the need for the bonds to be set at levels that are sufficient to cover the costs associated with accomplishing completion of reclamation."<sup>45</sup>

West Virginia did not heed the West Virginia Supreme Court's warning. In 1994, West Virginia's liabilities grew to \$22.2 million and that amount did not include water treatment.<sup>46</sup> Environmental groups again sued WVDNR, alleging the SRF and the reclamation tax were inadequate.<sup>47</sup> In its ruling, the Supreme Court of Appeals of West Virginia found that the state had a "mandatory, nondiscretionary duty to utilize moneys from the SRF, up to 25% of the annual amount" to treat discharges to applicable WQS.<sup>48</sup> WVDNR had to treat the water at the mine sites with the money it had available.

In 1995, OSM determined that West Virginia's abandoned mine liabilities were approximately \$62 million.<sup>49</sup> OSM disapproved parts of West Virginia's SMCRA program regarding abandoned mine bonding and funding.<sup>50</sup> That same year, WVDNR recommended that the legislature remove the \$5000-per-acre cap.<sup>51</sup> Forfeited bonds routinely failed to cover the cost to reclaim the land. To this day, the West Virginia legislature has never adjusted the cap. In 1998, WVDNR issued a report to the West Virginia legislature that the long-term liabilities for abandoned mines "would grow geometrically to a maximum of \$53

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42. *Id.*

43. *Id.* at 135.

44. West Virginia *ex rel.* Laurel Mountain/Fellowsville Area Clean Watershed Ass'n v. Callaghan, 418 S.E.2d 580, 585 (W. Va. 1992).

45. *Id.* at 585 n.10.

46. W. Va. Highlands Conservancy v. Norton, 137 F. Supp. 2d 687, 694 (S.D. W. Va. 2001).

47. *See id.* at 691.

48. West Virginia *ex rel.* W. Va. Highlands Conservancy, Inc. v. W. Va. Div. of Env'tl. Prot., 447 S.E.2d 920, 925 (W. Va. 1994).

49. Giffin, *supra* note 40, at 139.

50. *Id.*

51. *Id.* at 140.

million after five years” and admitted that such growth was “fiscally irresponsible.”<sup>52</sup>

By 2000, OSM determined that WVDNR paid an average of nearly \$3000 per acre to reclaim mine sites, but from 1992-2000 the average bond was only \$700.<sup>53</sup> In 2001, the legislature increased that tax from \$0.03 per ton to \$0.07 per ton.<sup>54</sup> In addition, the legislature created a “temporary tax” of \$0.07 to go into the SRF.<sup>55</sup> The legislature also created an eight-member Special Reclamation Fund Advisory Council<sup>56</sup> that would ensure the “effective, efficient and financially stable operation of the [SRF].”<sup>57</sup> The Council must provide the legislature with an annual report, in conjunction with an actuarial report, and make recommendations on the stability of the SRF and the amount of the reclamation tax.<sup>58</sup>

During its 2005 assessment, the Council recognized that if the temporary tax expired, the SRF would result in “nearly immediate insolvency.”<sup>59</sup> The legislature enacted another temporary tax, at \$0.074 per ton, making the total tax \$0.144 per ton of coal mined.<sup>60</sup> The legislature required the \$0.074 be allocated between the SRF and a newly created Water Fund.<sup>61</sup> The Water Fund received less than \$0.074 per ton of coal mined for outstanding and future water treatment at all abandoned mine sites in the state.<sup>62</sup> By 2011, the legislature removed the temporary tax, and the Water Fund only received \$0.015 per ton of clean coal extracted, even as water treatment costs escalated.<sup>63</sup> The changes in the tax requirements were largely due to the uncertainty of the costs of water remediation.<sup>64</sup> In 2012, at the recommendation of the Council, the

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52. *Id.* at 138 (quoting W. VA. DIV. OF ENVTL. PROT., DEP’T OF COMMERCE, LABOR, & ENVTL. RES., ACID MINE DRAINAGE BOND FORFEITURE REPORT 1 (1993) (internal quotation marks omitted)).

53. *Id.* at 142.

54. Special Reclamation Advisory Council, *supra* note 16, at 6.

55. *Id.*

56. The Council is composed of eight members: a representative from the Secretary of the Department of Environmental Protection, a representative from the Treasurer’s Office, the Director of the National Mine Land Reclamation Center at West Virginia University, a member representing the interests of the coal industry, a member representing the interests of environmental protection organizations, the interests of the coal miners, and the interests of the general public. W. VA. CODE ANN. § 22-1-17 (LexisNexis 2009). From at least 2010 to the present, the position of the representative for the interests of the general public has been vacant.

57. Special Reclamation Advisory Council, *supra* note 16, at 6.

58. W. VA. CODE ANN. § 22-1-17.

59. Special Reclamation Advisory Council, *supra* note 16, at 6.

60. *Id.*

61. *Id.*

62. *See id.*

63. *Id.* at 2.

64. *See id.* at 4-5.

legislature increased the tax dedicated to the Water Fund to \$0.15 per ton.<sup>65</sup>

### III. THE STATE MUST REMEDIATE RECLAMATION SITES TO MEET THE REQUIREMENTS OF THE CWA

In utilizing the Water Fund, WVDNR prioritized the list of sites it would treat.<sup>66</sup> It assessed the sites with the most serious pollution problems and treated the discharges. Under the CWA (and West Virginia's state program), any person who discharges pollutants, including the West Virginia Department of Environmental Protection (WVDEP) at abandoned sites, must obtain an NPDES permit.<sup>67</sup> The definition of "person" includes the state and state agencies.<sup>68</sup> The NPDES permit must set limits so that the discharge of pollutants does not violate WQS in waters of the state. WQS protect the uses of state waters for a variety of purposes: aquatic life, human health, public water supply, agriculture and wildlife uses, water supply for industrial use, and water contact recreation.<sup>69</sup> WQS represent the level of pollutants that can exist in a water body while maintaining a healthy water body.

Prior to 2011, WVDNR did not treat water from abandoned sites so that the discharges would meet WQS. WVDNR did not issue itself NPDES permits. Instead, WVDNR treated the sites to a lesser standard, which also required less expensive treatment. This lesser standard was not necessarily protective of the uses of the state water bodies.

WVDNR continued to report its expenditures and potential liabilities to the Council. WVDNR's position was that it did not have to employ expensive treatment operations to meet WQS.<sup>70</sup> During this time, the legislature did not increase water reclamation tax rates to account for the appropriate water treatment costs. Mining continued in the state, with coal companies paying between \$0.015 and \$0.074 per ton of coal to cover the cost to the state of treating water from abandoned mines.

Once again, environmental and public interest groups were concerned about the fiscal health of the Water Fund and WVDNR's

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65. *Id.* at 3; W. VA. CODE ANN. § 22-3-11(i)(1)(B) (2013), available at <http://www.legis.state.wv.us/wvcode/ChapterEntire.cfm?chap=22&art=3&section=11>.

66. W. VA. CODE ANN. § 22-3-11.

67. *Id.* § 22-11-3; 40 C.F.R. § 122.21(a) (2012).

68. W. VA. CODE ANN. § 22-11-3; 40 C.F.R. § 122.2.

69. W. VA. CODE R. § 47-2-6 (2011).

70. *See generally Huffman I*, 625 F.3d 159 (4th Cir. 2010), *aff'g* 588 F. Supp. 2d 678 (N.D. W. Va. 2009); *W. Va. Highlands Conservancy, Inc. v. Huffman (Huffman II)*, 651 F. Supp. 2d 512 (S.D. W. Va. 2009); *W. Va. Highlands Conservancy, Inc. v. Huffman (Huffman III)*, 588 F. Supp. 2d 678 (N.D. W. Va. 2009).

treatment of unreclaimed sites. In 2007, environmental groups filed a pair of lawsuits regarding the Water Fund in both federal judicial districts in West Virginia.<sup>71</sup> These groups argued that in executing its “mandatory, nondiscretionary duty” to treat abandoned mine sites to applicable WQS, WVDNR failed to (1) issue NPDES permits for its discharges as the operator of discharges of pollutants under the CWA and (2) treat water discharges to meet WQS.<sup>72</sup> As in the previous SRF case, the environmental groups were concerned that the reclamation water tax was based upon WVDNR spending less money on water treatment because those cheaper treatments did not meet WQS. Mine companies, particularly MTR mine operators, paid less in reclamation taxes because the Water Fund was inadequately capitalized. Environmental groups were also concerned that water quality in the state was impacted by WVDNR’s failure to treat abandoned mine sites adequately.

The environmental groups argued that the CWA required WVDNR to permit its own discharges and meet WQS because it was an operator of a discharge of pollutants.<sup>73</sup> WVDNR claimed that it was exempt from the CWA because it was a state entity and that it was not the original operator of the site, an argument that had never been accepted by any court in a CWA case.<sup>74</sup> This argument was also contrary to WVDEP’s long-established practice of permitting state entities like the West Virginia Transportation Division of Highways, the West Virginia Division of Corrections, the West Virginia Department of Education, and other state agencies outside of mining, who not only received NPDES permits, but also paid penalties to WVDEP for violations.

On appeal, WVDNR argued that the state “simply cannot comply” with WQS because of the “hefty costs.”<sup>75</sup> WVDNR argued that it was not simply a matter of increasing the reclamation tax.<sup>76</sup> WVDNR claimed that if the state had to comply with WQS like every other discharger of pollutants, it would constitute a raid on West Virginia’s treasury.<sup>77</sup> West Virginia had failed to require financial assurance from both the mine operators through appropriate bonding and the mining industry through a feasible reclamation tax. As a result, the state could

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71. *Huffman II*, 651 F. Supp. 2d 512; *Huffman III*, 588 F. Supp. 2d 678.

72. *See Huffman II*, 651 F. Supp. 2d at 516; *Huffman III*, 588 F. Supp. 2d at 680.

73. *See Huffman II*, 651 F. Supp. 2d at 516; *Huffman III*, 588 F. Supp. 2d at 684.

74. *Huffman II*, 651 F. Supp. 2d at 522 n.6; *Huffman III*, 588 F. Supp. 2d at 691-92.

75. *Huffman I*, 625 F.3d at 169.

76. Reply Brief of Appellant at 9, *Huffman I*, 625 F.3d 159 (No. 09-1474), 2009 WL 3240503.

77. *See id.* at 10-14.

not afford to abate the problems—contrary to the entire purpose of SMCRA.

In essence, WVDNR admitted that the same mine reclamation plans that the state had permitted and certified as meeting WQS, bonded for amounts that allegedly assured compliance of those WQS, and then taxed through the Water Fund to further pay for liabilities, were actually false. The mining companies had provided bonds that were insufficient to pay for treatment to ensure that these sites would discharge only legally acceptable levels of pollutants and protect West Virginia's waters. Through its arguments, WVDNR indirectly admitted that its permitting, bonding, and reclamation tax systems left West Virginia at risk for vast underfunded liabilities and certain water pollution. The bonds and the taxes that mining companies paid were insufficient for the state to treat water to appropriate levels of pollutants before discharging into streams under the WQS, as required by the West Virginia state water program and the CWA.

Just as revealing were the arguments by the Interstate Mining Compact Commission (IMCC), whose members are coal mining states. IMCC admitted that the bonds in all of its member states were insufficient to pay for the treatment of water for perpetual pollution control.<sup>78</sup> IMCC wanted the court to find in WVDNR's favor because the states simply did not have the money to pay for the treatment.<sup>79</sup>

Without even acknowledging that each member state was admitting that it failed to meet the requirements necessary to have a state SMCRA program, IMCC justified this financing failure by stating, "[T]he bond amount would not generally cover the costs of any post-mining pollutional discharge because the permit would not be issued if the mining activity is expected to cause such a discharge."<sup>80</sup> As discussed later in this Article, it is unequivocally false to say that states do not issue

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78. Brief of the Interstate Mining Compact Commission as Amicus Curiae in Support of Appellant Randy Huffman, Seeking Reversal of the Decision Below at 11, *Huffman I*, 625 F.3d 159 (No. 09-1474) [hereinafter Amicus Curiae Brief].

79. See *id.* Although this Article focuses on West Virginia bonding, similar problems may exist in other Appalachian surface-mining states. Virginia only requires that the bond be at least \$10,000 per bond and "sufficient to assure the completion of the reclamation plan," with no further monetary instructions. VA. CODE ANN. § 45.1-241 (2013). OSM threatened to take over Kentucky's program, and the state revised its bonding amounts to "not less than \$500 nor more than \$3,000 for each acre or fraction thereof of the area of land affected, with a minimum bond of \$5,000, conditioned upon the faithful performance of the requirements." 405 KY. ADMIN. REGS. 1:050 (2013). Tennessee does not have primacy, so the bonding program is executed through OSM, which requires a sufficient amount to complete reclamation and no less than \$10,000 per bond. 30 C.F.R. § 800.14 (2012). OSM has not revised its regulations even though the problems associated with MTR and perpetual pollution have been apparent for many years.

80. Amicus Curiae Brief, *supra* note 78, at 11 n.5.

SMCRA permits if there will be postmining pollution discharges. States have issued a myriad of SMCRA permits where the mine sites now discharge selenium, sulfates, conductive particulates, suspended solids, dissolved solids, illegal levels of acidic solutions, iron, aluminum, and manganese into the indefinite future. Those mining companies are now implementing pollution controls upwards of \$50 million at individual sites to treat perpetual pollution. West Virginia and other Appalachian coal-mining states will inherit the same liabilities if those mine operators fail in their reclamation efforts or become insolvent because the sites will continue to discharge pollutants long after the profits from these companies are gone. The impropriety of issuing such perpetual pollution permits will bankrupt the reclamation program in West Virginia, as well as other Appalachian coal-mining states.

The courts in both cases found that WVDNR was an operator of discharges of pollutants under the CWA.<sup>81</sup> The CWA provided no exceptions for state agencies.<sup>82</sup> As an operator, the CWA required WVDNR to obtain NPDES permits to meet all applicable water standards.<sup>83</sup> The United States Court of Appeals for the Fourth Circuit affirmed the decision that WVDNR needed to obtain NPDES permits and meet WQS.<sup>84</sup> The court was not persuaded by the arguments that West Virginia (and the rest of the coal-mining states) should be excused from meeting WQS simply because it had failed to collect sufficient money from the mining operations, instead choosing for decades to subsidize the cost of pollution from this trillion-dollar industry by looking the other way.<sup>85</sup>

#### IV. WEST VIRGINIA HAS LIABILITIES FOR CURRENT UNRECLAIMED SURFACE MINE SITES

As a result of the NPDES cases, West Virginia must utilize money from the Water Fund to treat discharges from abandoned mine sites to

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81. *Huffman II*, 651 F. Supp. 2d 512, 521 (S.D. W. Va. 2009); *Huffman III*, 588 F. Supp. 2d 678, 691 (N.D. W. Va. 2009).

82. Although not discussed in the case, the West Virginia Water Pollution Control Act, specifically title 22, section 11-3, of the West Virginia Code and title 22, section 11-8, likewise does not provide an exception for the state or its agencies. The Act specifically identifies the state as a person who must comply with the West Virginia Water Pollution Control Act. W. VA. CODE §§ 22-11-3(15), -8(6) (LexisNexis 2009); see *Huffman II*, 651 F. Supp. 2d at 518; *Huffman III*, 588 F. Supp. 2d at 689, 691.

83. *Huffman II*, 651 F. Supp. 2d at 521; *Huffman III*, 588 F. Supp. 2d at 691-92.

84. *Huffman I*, 625 F.3d 159, 170 (4th Cir. 2010).

85. *Id.* at 169 (stating the court is “not in the business of rewriting laws whenever parties allege it is difficult to comply with them”). Relief from burdensome permitting requirements lay with Congress, not the court. *Id.* at 170.

meet all applicable water standards. In order to comply with the requirements of the federal SMCRA to have a state program, West Virginia must have financial assurance “sufficient to assure the completion of the reclamation plan.”<sup>86</sup> The reclamation plan includes meeting CWA requirements. West Virginia does not satisfy that requirement. West Virginia estimates that the cost to treat all 200 existing abandoned mine sites forfeited by the end of 2012 is \$33.1 million for capital costs and an additional \$6 million in annual operations and maintenance costs.<sup>87</sup> At the end of 2012, the Water Fund had a total of \$9.4 million in assets.<sup>88</sup>

West Virginia’s treatment liability estimate is likely underestimated. The West Virginia Legislative Auditor audited the SRF and Water Fund for the period of July 1, 2009, through June 30, 2010.<sup>89</sup> The audit detailed numerous issues with the way WVDMR managed the SRF and the bonding program. The audit randomly selected 22 forfeited mine sites and found that the reclamation liabilities were consistently underestimated.<sup>90</sup> This means that the deficit between the costs of current abandoned mine treatment and the money in the Water Fund are likely far greater than WVDMR has estimated. The alleged existing gap in excess of \$24.4 million in capital expenditures and \$6 million per year in operation and maintenance costs may in reality be a gross underestimation.

In 2012, the legislature increased the amount of the Special Reclamation Tax, including the amount for the Water Fund. As of July 1, 2012, mining companies pay \$0.15 per ton of coal extracted into the Water Fund.<sup>91</sup> The caps on bonding have not increased since 1991. The Water Fund had assets of \$8.7 million in 2011; in 2012, after six months of increased taxes, it held \$9.4 million, an increase of only \$700,000.<sup>92</sup>

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86. 30 U.S.C. § 1259(a) (2006).

87. Special Reclamation Advisory Council, *supra* note 18, at 11. This estimate was not updated since the 2011 Special Reclamation Fund Advisory Council Annual Report. It is unclear whether WVDMR has kept track of new liabilities since its last required report to the federal court in 2011, but it seems unlikely that in over a year, the treatment costs would remain unchanged.

88. *Id.* at 6.

89. LEGISLATIVE POST AUDIT DIV., W. VA. LEGISLATIVE AUDITOR, LEGISLATIVE AUDIT REPORT: WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION SPECIAL RECLAMATION FUNDS & FUND 8796 (2012).

90. *Id.* at 12.

91. W. VA. CODE ANN. § 22-3-11 (2013), available at <http://www.legis.state.wv.us/wvcode/ChapterEntire.cfm?chap=22&art=3&section=11>.

92. Special Reclamation Advisory Council, *supra* note 18, at 6; Special Reclamation Advisory Council, *supra* note 16, at 8.

The 2007 cases on water treatment at reclamation sites arose from concerns with WVDNR's treatment of mining sites with AMD problems.<sup>93</sup> AMD results in an increase in the pH of water and the precipitation of harmful chemicals into streams.<sup>94</sup> AMD is a serious problem that states across the country have dealt with for many years. WVDNR's liabilities for remediation of AMD are high.<sup>95</sup> However, a more expensive water treatment liability exists. These cases did not directly deal with the bigger problem lurking behind the concern for the Water Fund: the remediation of forfeited MTR sites.

#### V. RECLAMATION OF MTR SITES WILL INCREASE DEFICITS IN THE WATER FUND

MTR methods vary significantly from underground and traditional surface mining techniques in ways that implicate the viability of the Water Fund. The MTR method of mining coal in Appalachia involves blasting the soil and rock on top of a mountain to expose coal deposits in the upper strata of the mountain. Mining companies acquire the property rights to the mountain and use explosives and large-scale demolition equipment to remove the top portion of the mountain to access seams of coal. Mining companies use ammonia nitrate fertilizer and fuel oil to blow up mountains, the same mixture used in the Oklahoma City bombing, but mine explosions are 10 to 100 times stronger.<sup>96</sup>

MTR destroys all of the trees and vegetation in the process. Mining removes and displaces topsoil as well. Mining companies remove as much as 1000 feet of overburden from the mountain.<sup>97</sup> This permanently alters the contour of the mountain.

When the top of the mountain is removed, not all of the material is coal. Most of the material contains rock and other minerals, which are mining spoils or overburden. For every ton of coal extracted, MTR creates 16 tons of overburden.<sup>98</sup> Overburden expands when miners remove it from the mountain. Once the overburden is removed and

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93. *Huffman II*, 651 F. Supp. 2d 512, 515 (S.D. W. Va. 2009); *Huffman III*, 588 F. Supp. 2d 678, 683 (N.D. W. Va. 2009).

94. *Huffman III*, 588 F. Supp. 2d at 683.

95. See *Huffman II*, 651 F. Supp. 2d at 529; *Huffman III*, 588 F. Supp. 2d at 692.

96. Julia Fox, *Mountaintop Removal in West Virginia: An Environmental Sacrifice Zone*, 12 ORG. & ENV'T 163, 166 (1999).

97. EPA, EPA/600/R-09/138F, THE EFFECTS OF MOUNTAINTOP MINES AND VALLEY FILLS ON AQUATIC ECOSYSTEMS OF THE CENTRAL APPALACHIAN COALFIELDS 7 (2011), available at [http://ofmpub.epa.gov/eims/eimscomm.getfile?P\\_download\\_id=501593](http://ofmpub.epa.gov/eims/eimscomm.getfile?P_download_id=501593).

98. John McQuaid, *Mining the Mountains*, SMITHSONIAN MAG., Jan. 2009, at 74, 79.

smashed into smaller pieces, the overburden expands by 30% to 35%.<sup>99</sup> Not all of the overburden will fit back into the reclaimed mountain. After recontouring the mine, the mine companies must dispose of 20% to 25% of extra overburden.<sup>100</sup>

The mining company permanently places this excess overburden in another area. Overburden in Appalachian MTR sites is typically placed in valleys, which are natural areas that are lower than the mountain, resulting in a “valley fill.”<sup>101</sup> A valley fill looks like a dam, but with mining waste inside instead of clean water. Mining destroys springs and ephemeral, intermittent, and small perennial streams on the mountain’s surface.

Rainwater, snowmelt, and natural springs flow into the valley fill and filter through the fill material. As the water flows out of the valley fill, it picks up a variety of CWA pollutants, including polycyclic aromatic hydrocarbons (PAHs), iron, manganese, selenium, arsenic, and a combination of ionic compounds that elevate conductivity levels.<sup>102</sup> This water is collected and discharged into a stream, which constitutes a CWA point source that requires an NPDES permit. Water quality standards must be met at the point of discharge. Thus, pursuant to the CWA, whatever water comes out of the fill must meet all applicable WQS prior to entering a stream.

MTR mining leaves a bigger footprint than traditional mining methods. Because the mine operator creates a mountain-size crater in the earth, each MTR site disturbs upwards of 3100 acres.<sup>103</sup> Mining companies use draglines that cost over \$100 million, are as high as a 20-story building, and weigh 8 million pounds.<sup>104</sup> MTR with valley fills has disturbed approximately 12 million acres in West Virginia, Kentucky, Virginia, and Tennessee.<sup>105</sup> In a report issued in 2010, WVDEP used Geographic Information Systems (GIS) to quantify the miles of land disturbed and loss of streams within the West Virginia mountains.<sup>106</sup> The analysis identified 1821 spoil fills and 270 refuse fills (usually slurry impoundments, which contain pollution from washing impurities and

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99. Syd S. Peng, *Mountaintop Removal Controversy Slows West Virginia Coal Mining*, MINING ENGINEERING, Sept. 2000, at 53, 56.

100. *Id.*

101. *Id.*

102. Griffith et al., *supra* note 7, at 9.

103. Peng, *supra* note 99, at 53.

104. Fox, *supra* note 96, at 166.

105. EPA, *supra* note 97, at ii.

106. Michael Shank, W. Va. Dep’t of Env’tl. Prot., Trends in Mining Fills and Associated Stream Loss in West Virginia 1984-2009, at 1 (Apr. 14, 2010) (unpublished paper) (on file with author).

pollutants from the coal prior to sale), totaling 56,780 acres or over 88 square miles in the coalfields of West Virginia.<sup>107</sup> The analysis estimated that the fills from MTR resulted in the loss of over 844 miles of intermittent and perennial streams.<sup>108</sup> The stream loss was relatively concentrated, with half of the stream loss occurring within 23 watersheds in the state.<sup>109</sup> Stream loss exceeded 10% in 14 of these watersheds.<sup>110</sup>

Despite the requirements of SMCRA and the CWA, discharges from MTR sites do not comply with WQS. The illegal discharge of pollutants has negatively impacted aquatic life. Research has found that “surface coal mines degrade water quality and substantially alter stream biota well downstream of their permit boundaries.”<sup>111</sup> MTR sites result in elevated fine sediments from valley fills and the erosion of streambeds caused by changes in stream flow.<sup>112</sup> Streams below valley fills have elevated levels of sulfate, nitrate, nitrite, bicarbonate, calcium, manganese, potassium, sodium, and chloride ions.<sup>113</sup> Valley fills also release elevated levels of selenium.<sup>114</sup>

This pollution does not occur in isolation; real impacts to the quality of West Virginia’s waters occur. Loss of aquatic life biodiversity occurs in up to 2880 miles of West Virginia streams due to “the propagation of surface coal mining pollutants through the regional river network.”<sup>115</sup> Scientists have documented cranial and facial deformities in fish from selenium pollution.<sup>116</sup> MTR sites continuously release illegal quantities of CWA pollutants and destroy and impair aquatic life. An “EPA study found that nine out of every 10 streams downstream from surface mining” in Appalachia exhibit significant impacts to aquatic life.<sup>117</sup> The state may ultimately have to bear the entire cost of treating these sites to stop the pollution if it is unable to recover the funds from polluters.

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107. *Id.* at 3.

108. *Id.* at 7.

109. *Id.* at 9.

110. *Id.*

111. Emily S. Bernhardt et al., *How Many Mountains Can We Mine? Assessing the Regional Degradation of Central Appalachian Rivers by Surface Coal Mining*, 46 ENVTL. SCI. & TECH. 8115, 8120 (2012).

112. Griffith et al., *supra* note 7, at 8.

113. *Id.*

114. *Id.* at 5.

115. Bernhardt et al., *supra* note 111, at 8121.

116. Lindberg et al., *supra* note 7, at 20,932-33.

117. Memorandum from Peter S. Silva, Assistant Adm’r for Water, EPA, & Cynthia Giles, Assistant Adm’r for Enforcement & Compliance Assurance, EPA, to Shawn Garvin, Reg’l Adm’r, EPA Region 3 et al. 2 (Apr. 1, 2010) (on file with author).

## VI. FUTURE RISKS TO THE MINING INDUSTRY AND THE STATE

It seems relatively clear that West Virginia's outstanding liabilities on currently abandoned mines exceed the money collected from those forfeited bonds and the existing money in the Water Fund. What if more sites are forfeited? Can the money held in current bonds adequately pay for future water liabilities?

Substantial obstacles block a comprehensive evaluation of West Virginia's potential liabilities. The West Virginia Legislative audit found that WVDNR "consistently improperly calculated" the bond amounts for mining permits, "which would result in permits being under-bonded."<sup>118</sup> This underbonding occurs partly because the legislature has continuously refused to raise the \$5000-per-acre cap since 1991. In addition, WVDNR consistently bonds sites below the \$5000 ceiling. The audit attempted to analyze 1764 bonds, but could not obtain "relevant, reliable reports" from the WVDNR and could not determine whether the bonds were properly calculated.<sup>119</sup>

The audit also criticized WVDNR's practice of allowing self-bonding from mining companies. The audit noted that it was not able to obtain reliable information from the WVDNR's system. It found that one self-bonded mining company was bonded for over \$174 million.<sup>120</sup> However, the documentation showed that the mining company was approved for financial assurance of only \$125 million.<sup>121</sup> This would leave West Virginia with \$49 million in liability that the company may not be able to pay.

WVDNR's response on self-bonding was especially enlightening and frightening. WVDNR corrected the auditor's initial report by identifying Massey Energy and Alpha Natural Resources (the company that purchased Massey) as the self-insured entity. WVDNR stated that after the merger, Alpha Natural Resources had over \$186 million in total outstanding amounts of self-bonds.<sup>122</sup> WVDNR further stated that Alpha Natural Resources is approved for \$375 million in self-bonds, as if that should provide confidence in the self-bonding process.<sup>123</sup> The fact that WVDNR evaluates \$375 million in self-bonded risk for one company (one that is now suffering significant quarterly losses) speaks volumes

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118. LEGISLATIVE POST AUDIT DIV., *supra* note 89, at 56.

119. *Id.* at 6 n.1.

120. *Id.* at 58.

121. *Id.*

122. *Id.* at 115.

123. *Id.*

about WVDNR's bonding practices and its attitude about surface mining in general.

The audit criticized the policy of self-bonding as riskier than other securities.<sup>124</sup> WVDNR's response was that both surety and bank bonds have become insolvent in the past.<sup>125</sup> The conclusion by WVDNR—that self-bonding, surety bonding, and bank bonding are all susceptible to substantial risk of insolvency—should not ease the minds of the citizens of West Virginia who have to live with and pay for the pollution of surface mining that should have full financial protection under SMCRA.

#### VII. POTENTIAL FAILURE IN THE COAL MINING INDUSTRY AND MTR METHODS IN PARTICULAR

Is the coal industry at risk of a large-scale failure? Environmental groups have exerted intense pressure on the coal industry through lawsuits and the enforcement of the CWA. Surface mining companies face a particularly expensive problem with selenium violations.

Selenium is a toxic pollutant that bioaccumulates in fish and humans.<sup>126</sup> The EPA surveyed 78 MTR sites with valley fill streams and found that 73 had selenium water concentrations greater than the threshold for toxic bioaccumulation.<sup>127</sup> Research has confirmed that West Virginia streams in mined watersheds have selenium concentrations that exceed toxic levels for aquatic life.<sup>128</sup> Toxic levels of selenium cause embryonic deformities in fish and reproductive failure in fish and birds.<sup>129</sup> As a result, states have issued fish consumption advisories due to selenium.<sup>130</sup> Selenium is a serious water quality issue in MTR areas, especially West Virginia. Research has documented severe physical deformities in two species of fish in the Mud River reservoir,<sup>131</sup> which is downstream of MTR sites (including Patriot Coal's behemoth Hobet 21).

WVDNR was not ignorant of the problems of selenium. It just chose to look the other way. West Virginia's WQS establish quantitative in-stream criteria to protect human health (acute criteria) and aquatic life (acute and chronic criteria).<sup>132</sup> However, WVDNR did not impose or

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124. *Id.*

125. *Id.*

126. M.A. Palmer et al., *Mountaintop Mining Consequences*, 327 SCIENCE 148, 148 (2010).

127. *Id.*

128. *Id.*

129. *Id.*

130. *Id.*

131. Lindberg et al., *supra* note 7, at 20,932-33.

132. See W. VA. CODE R. § 47-2 app. E, tbl.1 (2013).

enforce selenium limitations on coal mining operations until environmental groups filed lawsuits over selenium violations of WQS. In 2003, EPA recognized selenium as a pollutant of concern in MTR operations.<sup>133</sup> When WVDNR reluctantly included these criteria in permits, WVDNR also granted unlimited, indefinite stays to the mining companies, making those limitations unenforceable and giving companies no effective limits.<sup>134</sup> Environmental groups, through lawsuits in federal court, eventually stopped that unlawful practice.<sup>135</sup>

The state was aware for many years that coal companies were discharging illegal quantities of selenium due to MTR and that the mining companies were unwilling to treat, remove, or reduce the selenium from its discharges, despite the mandates of state water law and the CWA. In 2009, the legislature itself recognized the issues with selenium but questioned whether it was an issue in the state.<sup>136</sup> During this entire time, WVDNR continued to issue MTR NPDES permits, knowing that mining companies would discharge illegal quantities of selenium and that sites were not installing selenium treatment technology.

Based on inadequate enforcement by WVDNR, environmental groups challenged the mining companies' illegal pollution actions. These lawsuits were successful. In 2010, a federal court ordered Patriot to invest in selenium treatment at two of its mine sites (Ruffner and Hobet 22) in West Virginia after Patriot failed to convince the court that it was moving at a reasonable speed towards compliance.<sup>137</sup> The court ordered Patriot to install fluidized bed reactor treatment (FBR) at the Ruffner mine site to achieve compliance with selenium limits by March 1, 2013.<sup>138</sup>

The court required Patriot to post a \$45 million Irrevocable Letter of Credit with the court for financial assurance.<sup>139</sup> In contrast, Patriot is bonded with the state of West Virginia for the Ruffner mine for a total of \$6,600,640.<sup>140</sup> The \$6.6 million bond with West Virginia supposedly

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133. See *Ohio Valley Envtl. Coal., Inc. v. Coal-Mac, Inc.*, 775 F. Supp. 2d 900, 905 (S.D. W. Va. 2011).

134. See *id.* at 905, 925.

135. See, e.g., *id.* at 929.

136. W. VA. CODE ANN. § 22-11-6 (LexisNexis 2009).

137. See *Order Specifying Relief, Ohio Valley Envtl. Coal., Inc. v. Apogee Coal Co.*, 744 F. Supp. 2d 561 (S.D. W. Va. 2010) (No. 07-00413).

138. *Id.* at 1.

139. *Id.* at 2.

140. This figure was derived by adding up all outstanding surety bonds (bond numbers 1015322, 1058001, 8205-64-51, 400SA1616, 1062292, 1062293, 1062294) associated with all pending SMCRA permits (permit numbers O502394, S007585, S507986) for the Ruffner mine

represents an adequate amount of money for WVDNR to remediate the land and treat the water from the site. Even after a federal court determined that selenium treatment *alone* at the site will exceed \$45 million, WVDNR is protected from liability only to \$6.6 million. In the event that Patriot abandons the site, West Virginia's liability would be over \$30 million for the construction of selenium treatment alone. In its required monthly status report to the court on June 10, 2013, Patriot disclosed that it has paid over \$37 million to date on the project and estimates it will cost nearly \$10 million more to complete the project.<sup>141</sup> However, Patriot has run into some significant problems with its project. As of September 3, 2013, Patriot has notified the court that it has problems with the FBR, including a total of seven failures related to "excessive wear and pump failures."<sup>142</sup> Additionally, the moving bed biofilm reactor has clogging problems, there is "excessive wear" on the effluent pumps, and there is "failure of every motor" at the Mudlick pumps.<sup>143</sup> It appears as though Patriot has significant problems with its selenium removal equipment, and fixing those problems sounds expensive. No report to date has been issued on those costs.

The court's foresight to require a bond of \$45 million will ensure that Patriot (or its successors) will complete up to \$45 million in construction.<sup>144</sup> However, West Virginia remains unprotected for the cost of annual operations if Patriot does not successfully emerge from bankruptcy.<sup>145</sup> Patriot has not disclosed in public filings to the court the annual costs for operation and maintenance for its selenium treatment.

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(NPDES permit number WV0099520). The bond data was acquired from the WVDEP through a Freedom of Information Act request by the author, received October 15, 2012, and on file with the author. The permit numbers were retrieved from the Department's Web site. *Coal/Quarry NPDES Application Search*, W. VA. DEP'T OF ENVTL. PROT., <http://www.dep.wv.gov/insidedep/Pages/coalquarryndpespermitsearch.aspx> (enter "WV0099520" into "Permit Number" field; then click "Go" button) (last visited Oct. 25, 2013).

141. Thirty-Second Monthly Status Report at 3, app. A, *Apogee Coal*, 744 F. Supp. 2d 561 (No. 07-00413).

142. *Id.*; Quarterly Status Report at 1, *Apogee Coal*, 744 F. Supp. 2d 561 (No. 07-00413).

143. Thirty-Second Monthly Status Report, *supra* note 141, at 3; Quarterly Status Report, *supra* note 142, at 1-2.

144. Order Specifying Relief, *supra* note 137, at 1. In a companion case, the court subsequently reduced the letter of credit amount to the amount remaining to complete construction on the selenium treatment technologies. The court has not required a letter of credit to ensure that even if Patriot becomes completely insolvent, adequate money remains to actually operate the selenium treatment. *See* Order at 2, *Ohio Valley Env'tl. Coal. Inc. v. Hobet Mining, LLC*, 723 F. Supp. 2d 886 (S.D. W. Va. 2010) (No. 09-01167).

145. The author filed a motion to intervene on behalf of an environmental group in a settlement involving the same selenium outlets. The group asked to intervene to request that the court establish a letter of credit or funds to protect the state for operating costs. Because of the ongoing bankruptcy, the group was unable to ask for relief and withdrew the motion to intervene.

However, CH2M Hill, the company that is installing the treatment, estimated in 2010 that an FBR would cost \$3 million annually for operation and maintenance.<sup>146</sup> Patriot's recent serious problems with numerous aspects of its selenium removal equipment further illustrates the problems WVDNR faces on selenium.<sup>147</sup> Installing selenium treatment facilities is an exercise in futility if the operator or the state cannot afford to properly operate and maintain the systems.

Patriot's selenium treatment obligations are not limited to Hobet 21 and Ruffner. In 2012, Patriot Coal settled an environmental group lawsuit involving selenium violations, where it agreed to pay the EPA \$750,000 and an additional \$6.75 million to the West Virginia Land Trust administered by West Virginia University.<sup>148</sup> It also agreed to treat selenium to WQS at four of its sites.<sup>149</sup>

In filings with the United States Securities and Exchange Commission, Patriot informed its investors that treatment for selenium liabilities would cost an estimated \$440 million over 30 years.<sup>150</sup> Months after the selenium settlement, Patriot filed for Chapter 11 bankruptcy and quickly asked the bankruptcy court for permission to ask the Southern District Court of West Virginia for relief from \$29 million in environmental treatment that it must have implemented to meet limitations requirements.<sup>151</sup> On January 9, 2013, the court approved a settlement<sup>152</sup> negotiated between the environmental groups and Patriot whereby Patriot would stop MTR mining as a way to make "a reduction [in its] environmental footprint."<sup>153</sup> At this point, it is uncertain what will happen with that bankruptcy, but it is clear that if Patriot is unable to restructure its business into a profitable venture without using MTR methods, West Virginia will inherit a large portion of that estimated \$440

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146. TOM SANDY & CINDY DiSANTE, CH2M HILL, REVIEW OF AVAILABLE TECHNOLOGIES FOR THE REMOVAL OF SELENIUM FROM WATER, at xv (2010), <http://www.namc.org/docs/00062756.PDF>.

147. See Quarterly Status Report, *supra* note 142.

148. Dan Lowrey, *Patriot Reaches Potentially Costly Agreement To Treat Selenium from Coal Mines*, SNL COAL REPORT, Jan. 23, 2012, available at <http://www.lexisnexis.com>.

149. *Id.*

150. Ken Ward Jr., *Patriot Selenium Deal Falls Through*, CHARLESTON GAZETTE (Sept. 13, 2012), <http://www.wvgazette.com/News/201209130136>.

151. Dan Lowrey, *Court Allows Patriot To Seek Delay in Implementing Selenium Cleanup Plans*, SNL COAL REPORT, Oct. 15, 2012, available at <http://www.lexisnexis.com>.

152. Memorandum Opinion and Order at 8, *Ohio Valley Envtl. Coal., Inc. v. Patriot Coal Corp.*, No. 11-00115 (S.D. W. Va. dismissed Jan. 9, 2013).

153. Ken Ward Jr., *Patriot Coal To Phase Out MTR Mining*, CHARLESTON GAZETTE, Nov. 16, 2012, at 1A.

million in selenium pollution clean-up. Patriot owns 11 active mines, with 9 of those mines located in West Virginia.<sup>154</sup>

West Virginia has not received adequate financial assurance from Patriot for these liabilities. Twenty of the twenty-six Patriot entities that filed for Chapter 11 bankruptcy have provided WVDMR with surety bonds.<sup>155</sup> Those bonds total over \$158 million, covering over 49,000 acres of disturbed area (an average of \$3200 bonded per acre).<sup>156</sup> If Patriot's reorganization is unsuccessful and those sites become abandoned, WVDMR's secured sureties will not cover even half of the estimated \$440 million in selenium liabilities alone estimated by Patriot to its stockholders, even though 75% of Patriot's active mine sites are located in West Virginia. The bonds must cover remediation for all water pollution and land remediation as well.

Patriot is far from the only coal company with massive selenium treatment liabilities. In 2010, WVDMR identified 180 outfalls in the state as violating selenium limits.<sup>157</sup> Alpha Natural Resources settled a lawsuit brought by environmental groups for selenium violations at 3 mine sites for a \$4.5 million penalty<sup>158</sup> to the West Virginia Land Trust. The estimated construction cost to treat selenium was estimated at \$50 million.<sup>159</sup> Environmental groups sued Alpha for selenium violations at an additional nine mining sites in West Virginia in July 2012.<sup>160</sup>

Arch Coal settled a selenium lawsuit with environmental groups at 6 mine sites with a \$2 million penalty.<sup>161</sup> In 2012, Arch also settled a \$4 million lawsuit with the EPA, West Virginia, and Kentucky involving other pollutants and an outfall with selenium violations.<sup>162</sup> Arch agreed to install a passive selenium treatment system as part of the settlement.<sup>163</sup> Arch has not made cost estimates for this treatment available to the public.

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154. *Operations*, PATRIOT COAL, <http://www.patriotcoal.com/index.php?view=operation&p=3> (last visited Oct. 25, 2013).

155. W. Va. Dep't of Env'tl. Prot., Surety Bond Database (Oct. 15, 2012) (unpublished spreadsheet) (on file with author) (obtained through a Freedom of Information Act request to WVDEP).

156. *Id.*

157. Ziemkiewicz, *supra* note 15, at 2.

158. Steve Hooks, *Enviros Sue Alpha Natural Resources Anew over Selenium Discharges*, PLATTS COAL OUTLOOK, July 23, 2012, available at <http://www.lexisnexis.com>.

159. *Id.*

160. *Id.*

161. Lowrey, *supra* note 4.

162. *Arch Coal Clean Water Act Settlement*, *supra* note 5. The author discloses that she was involved in the finalization of this settlement with the court through the representation of West Virginia, but was not involved in the negotiations or the actual settlement.

163. *Id.*

The problems and costs associated with existing MTR should concern the state because of the ecological impacts and the risk to the Water Fund. If coal companies abandon MTR sites with selenium violations, the state must pay to install and maintain treatment systems to reduce pollution. In 2010, Paul Ziemkiewicz, member of the Special Reclamation Advisory Council as the Director of the National Mine Land Reclamation Center and researcher at the West Virginia Water Research Institute (housed at West Virginia University), finalized a research report to the Special Reclamation Advisory Council.<sup>164</sup> His report assessed the potential risk that West Virginia faces if it has to treat selenium at all of the sites identified by WVDNR as being in violation of selenium limits in West Virginia. Ziemkiewicz provided the report to the Advisory Council prior to the finalization of its 2011 Annual Report, but the selenium report is not mentioned in the Annual Report.

Ziemkiewicz based his selenium report on 180 outfalls in West Virginia that WVDNR identified that did not meet the less than 4.7 µg/L selenium limit.<sup>165</sup> The report chose two treatment options based on the court's ruling and selection of treatment in the Patriot case.<sup>166</sup> The report estimated treatment costs based upon the flow data from the 180 outfalls identified by WVDNR.<sup>167</sup> The amount of flow from the outfalls determines the types of technology that are appropriate for viable selenium reduction.

Calculations of actual costs took into account direct capital cost for installation, indirect capital costs for project management, and operation and maintenance for 20 years of operating costs.<sup>168</sup> The liability costs for selenium treatment alone for the 180 outfalls that did not meet selenium WQS range from \$1.925 trillion (\$133 billion for 125 sites discharging under 200 gpm plus \$1.792 trillion for 44 sites discharging over 200 gpm), under a lower confidence limit estimate, to \$7.983 trillion (\$534 billion for 125 sites discharging under 200 gpm plus \$7.449 trillion for 55 sites discharging over 200 gpm), under an upper confidence limit, with a mean of \$3.964 trillion estimated for treatment for 20 years.<sup>169</sup> This estimates the costs for a combination of zero-valent iron and fixed-bed reactor treatments (based on the gallons per minute needed to treat).<sup>170</sup> Alternatives for other treatment technologies included zero-

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164. Ziemkiewicz, *supra* note 15, at 1.

165. *Id.* at 1-2.

166. *See Huffiman II*, 651 F. Supp. 2d 512 (S.D. W. Va. 2009).

167. Ziemkiewicz, *supra* note 15.

168. *Id.* at 2, 4.

169. *Id.* at 7.

170. *Id.*

valent ion treatment by the company CH2M Hill—with costs from \$814 million to \$3.298 billion and a mean of \$1.652 billion for 125 sites discharging under 200 gpm.<sup>171</sup> Reverse osmosis for 55 sites discharging over 200 gpm would cost from \$2.859 trillion to \$10.490 trillion, with a mean cost of \$4.976 trillion for 20 years of treatment.<sup>172</sup>

The report did not take into account the potential that discharge limitations could become stricter (requiring more treatment) for outfalls that discharge into water bodies that are now impaired under CWA section 303(d) for excessive selenium. Due to the many years of flagrant violations by coal companies, 77 water bodies in West Virginia are now impaired by selenium.<sup>173</sup> Section 303(d) impairment means that these waterbodies will not support the proper water uses (for selenium, those streams cannot adequately support aquatic life or human health uses) due to their excessive levels of selenium. Due to existing pollution, mostly from mining impacts, the streams exceed WQS.

Because the streams exceed WQS, the CWA requires West Virginia to implement a watershed Total Maximum Daily Load (TMDL) to reduce permit limitations from every source of selenium contributing into the watershed, including any unreclaimed mine sites, in order to lower the selenium levels of the stream. This could also cause more sites to be in noncompliance, adding to the 180-outfall estimate. It could also increase treatment costs to allow for treatment to remove more selenium from water prior to discharge to meet lower limits.

The selenium research based the estimates on treatment for 20 years, whereas the state itself has now estimated it will need at least 35 years to treat pollution from existing abandoned mine sites for other pollutants. Ziemkiewicz recently finalized research based on one mine site in West Virginia.<sup>174</sup> Based on that one large mine complex with 67 outlets using monthly reporting of selenium levels and a watershed study in the Mud River, his research estimated that selenium would naturally attenuate to existing regulatory water quality levels in 23 years.<sup>175</sup> The research found that “estimated field selenium concentrations increased to a maximum value of 25.8 µg/L within seven years” and “the mine outlet

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171. *Id.*

172. *Id.*

173. See W. VA. DEP'T OF ENVTL. PROT., WEST VIRGINIA 2012 DRAFT SECTION 303(D) LIST (2012), available at [http://www.dep.wv.gov/WWE/watershed/IR/Documents/2012\\_Draft\\_303\(d\)\\_Documents/2012\\_303\(d\)\\_Complete\\_Document\\_M112012.pdf](http://www.dep.wv.gov/WWE/watershed/IR/Documents/2012_Draft_303(d)_Documents/2012_303(d)_Complete_Document_M112012.pdf).

174. P.F. Ziemkiewicz & R.J. Lovett, *Natural Selenium Attenuation at the Lab, Outlet, and Watershed Scales*, W. VA. MINE DRAINAGE TASK FORCE (2012), <http://www.wvmdtaskforce.com/proceedings/12/6-Ziemkiewicz-Se-Concnetrations-TF-2012.pdf>.

175. *Id.*

study indicated that the average selenium value reached a maximum of 26.3 µg/L.”<sup>176</sup> The existing water quality limit is 5 µg/L.<sup>177</sup> Of course, that is without a TMDL in place in the Mud River. A TMDL would lower the regulatory limit for discharges to reduce the selenium load in the river—most likely significantly.

A further limitation of the selenium cost report is that it is based only upon a snapshot of selenium violations at one point in time. Assuming WVDNR’s data is accurate,<sup>178</sup> the report relied only on selenium violations as of 2010. It does not take into account the fact that MTR sites are continuously discharging pollutants and that those sites could violate selenium limitations in the future. The number of outfalls violating selenium limits will only increase. MTR persists in West Virginia to this day. Companies are now required to institute more extensive overburden handling plans so that selenium is not exposed in the process. Whether it will work remains to be seen, especially because those assurances come from the same mine companies that created the selenium problem and the state that refused to recognize selenium as an issue in the first place.

Ziemkiewicz’s report also failed to take into account past sites where WVDNR certified the reclamation plans and released the bonds. Citizen groups now allege that previously-released sites violate WQS. One lawsuit alleged that the current owners of the first MTR site in West Virginia, Bullpush Mountain,<sup>179</sup> discharge selenium and conductive particles in levels that exceed WQS. Mining was completed and the bond was released in 2008. Although the Bullpush Mountain lawsuit was voluntarily dismissed, other lawsuits have been filed against large landowning companies like Pocahontas Land Corporation, a subsidiary of Norfolk Southern Corporation.<sup>180</sup>

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176. *Id.*

177. W. VA. CODE R. § 47-2 app. E, tbl.1 (2013).

178. Considering that WVDNR failed to include selenium limitations in many of the MTR NPDES permits reasonably likely to exceed safe limits and that WVDNR has been largely remiss in enforcing selenium limitations due to the sweetheart stays offered to mining companies, WVDNR’s 180 outfalls are probably underestimated. Even assuming that as a result of federal lawsuits brought by environmental groups, some of these outfalls will have treatment technologies installed, the author’s research has found only one mine site where treatment technology has been fully constructed and has successfully met selenium limits. That site is the result of the Arch Coal settlement with the EPA and West Virginia. *See Arch Coal Clean Water Act Settlement, supra* note 5.

179. Ken Ward Jr., *New Lawsuits Target Mountaintop Removal Landowners*, CHARLESTON GAZETTE (May 29, 2013), <http://www.wvgazette.com/News/201305290045>.

180. *Id.*

VIII. THE STATE IS RESPONSIBLE FOR IMPROPERLY RELEASED SITES  
THAT DO NOT MEET WQS

Let us assume that there are a number of sites where, because of politics and improper reclamation practices, the bonds were released but the sites discharge pollutants above WQS. What will be done with those sites?

The Water Fund is not responsible for sites once reclamation is approved and the bond is released because the state has terminated its jurisdiction under SMCRA.<sup>181</sup> WVDNR would likely argue that it does not have any obligation or authority to expend funds to reclaim those sites because it has lost jurisdiction. However, because selenium and other pollutant discharge problems do not generally just spontaneously arise but are the result of improper overburden waste handling and poor reclamation practices, it is almost certain that those mine sites discharged illegal levels of pollutants in violation of the West Virginia Water Pollution Control Act and CWA when WVDNR approved the reclamation and released the bond.

Using a theory such as Ziemkiewicz's research on natural pollutant attenuation, an environmental group could argue very persuasively that the mining company misrepresented its pollutant levels when it requested closure. Under SMCRA, the state must reassert jurisdiction over the site if the release "was based upon fraud, collusion, or misrepresentation of a material fact."<sup>182</sup> Even if WVDNR refuses to make such a determination, an environmental group could file a lawsuit in federal or state court seeking a writ of mandamus to force WVDNR to perform its mandatory duty, or it could appeal the decision to OSM.

A court determines misrepresentation under SMCRA using an objective standard, which means the state or an environmental group would have to show that a reasonable person would find that the mining company intentionally misrepresented that its discharge met WQS.<sup>183</sup> OSM represented to the court in *National Wildlife Federation v. Lujan* that "[i]f an operator applies for release but has not fulfilled his obligations, he is guilty of misrepresentation by the very fact of making an application."<sup>184</sup> Thus, it seems likely that some of these released sites were the product of misrepresentation because the site did not meet WQS

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181. See 30 C.F.R. § 700.11 (2012); see also *Nat'l Wildlife Fed'n v. Lujan*, 950 F.2d. 765, 766 (D.C. Cir. 1991) (finding termination of jurisdiction under SMCRA upon release of the performance bond a reasonable interpretation of the Act).

182. 30 C.F.R. § 700.11(d)(2).

183. See *Lujan*, 950 F.2d. at 770.

184. *Id.* (citations omitted) (internal quotation marks omitted).

prior to the application for release. The state may have to reassert jurisdiction. The site could then become abandoned under SMCRA if the original operator refuses to reclaim to WQS or is insolvent. Without a performance bond in place, WVDNR would have to treat the water using the Water Fund or enforce against the current landowner, which is often a large out-of-state landholding corporation. To date, WVDNR has not enforced against landowners of surface mines. In 2012, WVDNR received only \$61,960 in civil penalties from forfeiture sites.<sup>185</sup>

In addition to the CWA violations that a citizen can seek against the mine operator or the current landowner, an environmental group may also use 30 C.F.R. § 700.11(d)(2) to force WVDNR to reassert SMCRA jurisdiction if a coal company likely knew that the site discharged selenium at levels in excess of WQS at the time it applied for release. The site could then fall under treatment by the Water Fund.

It is unclear at this time how many sites exist where WVDNR closed and released the bond, but the site continues to discharge illegal pollutants. It is highly unlikely that any of those released sites met WQS at the time of closure, given WVDNR's track record on water pollution from surface mining. WVDNR did not even properly evaluate selenium at current sites until forced to by federal court, so it would be improbable that it properly evaluated the pollution discharged from postreclamation sites. West Virginia's outstanding selenium liabilities could easily exceed \$10 trillion over the next 20 years or longer.

#### IX. POTENTIAL FUTURE REQUIREMENTS

In addition to selenium liabilities, WVDNR has estimated that water liabilities only account for treatment to meet current WQS. WQS may become more stringent in the future (more protective of water uses), which would require more expensive treatment at abandoned sites. This is particularly true for watersheds that fall under the 303(d) listing due to excessive pollution. Stricter WQS could also make previously treated sites fall into noncompliance. This added treatment would increase the costs to the Water Fund. The Special Reclamation Advisory Council and WVDNR have not taken those risks into account in assessing the Water Fund's viability.

One such example is specific conductivity. Conductivity is the measure of salinity in water.<sup>186</sup> Conductivity is associated with mixtures

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185. Special Reclamation Advisory Council, *supra* note 18, at 8, fig.3.

186. EPA, EPA/600/R-10/023F, A FIELD-BASED AQUATIC LIFE BENCHMARK FOR CONDUCTIVITY IN CENTRAL APPALACHIAN STREAMS 1 (2011), available at <http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=233809>.

of calcium, manganese, sulfate, and bicarbonate salt ions.<sup>187</sup> The EPA has established through scientific research that elevated levels of conductivity are associated with aquatic life impairment. The EPA reported, “Fish, amphibians, mussels, and aquatic macroinvertebrates are especially exposed on their gills or other respiratory surfaces that are in direct contact with dissolved ions in water.”<sup>188</sup> The EPA has also linked elevated levels of conductivity to MTR with valley fill operations in Appalachia and in West Virginia specifically.<sup>189</sup>

In 2010, the EPA issued guidance on conductivity in West Virginia, limiting MTR discharges to 300-500  $\mu\text{S}/\text{cm}$ .<sup>190</sup> That guidance document was challenged in federal court by coal mining associations and the state of West Virginia.<sup>191</sup> In July 2012, the United States District Court for the District of Columbia invalidated that guidance, concluding that the EPA had exceeded its statutory authority in promulgating the guidance; the science itself was never evaluated by the court.<sup>192</sup> The issue is currently on appeal to the United States Court of Appeals for the District of Columbia.

However, concurrent to the EPA ruling, the West Virginia Environmental Quality Board (EQB) issued a decision on an NPDES permit for Patriot Mining Company that requires WVDNR to implement limits on conductivity regardless of the status of the EPA’s guidance.<sup>193</sup> The EQB is a statutorily created administrative board that reviews appeals of NPDES permitting and enforcement decisions by WVDEP.<sup>194</sup> The EQB operates independently from WVDEP.<sup>195</sup> Each EQB member must have knowledge and experience in the state’s water resources.<sup>196</sup> The EQB that issued the conductivity decision consisted of five members

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187. *Id.*

188. *Id.* at 2.

189. *See id.* at viii, xv.

190. Press Release, EPA, EPA Issues Comprehensive Guidance To Protect Appalachian Communities from Harmful Environment Impacts of Mountaintop Mining (Apr. 1, 2010), <http://yosemite.epa.gov/opa/admpress.nsf/e77fdd4f5afd88a3852576b3005a604f/4145c96189a17239852576f8005867bd!OpenDocument>.

191. *See Nat’l Mining Ass’n v. Jackson*, 880 F. Supp. 2d 119 (D.D.C. 2012).

192. *Id.* at 142.

193. *See Sierra Club*, Appeal No. 10-34-EQB, at 25-26 (W. Va. Env’tl. Quality Bd. July 30, 2012) (final order), *available at* <http://www.wveqb.org/finalorders/10-34-eqb%20-%20supplemental%20final%20order.pdf>.

194. *See* W. VA. CODE ANN. §§ 22B-1-1 to -12 (LexisNexis 2010).

195. Board members are appointed by the governor to serve five-year terms, with the advice and consent of the state Senate. No more than three members of the same political party may serve on the EQB at the same time. Board members may not receive “a significant portion of the member of the board’s income directly or indirectly from a national pollutant discharge elimination system permit holder or an applicant.” *Id.* § 22B-3-1.

196. *Id.*

experienced in water quality regulations with four of the members holding doctor of philosophy degrees in science and all five working in the field of environmental science.<sup>197</sup>

The EQB's decision was based upon four days of expert testimony that included scientists who published academic research in peer-reviewed articles on the actual damage to West Virginia streams from elevated levels of conductivity. The experts testified that surface mining itself released high concentrations of conductivity through fragmenting and exposing rock to surface water.<sup>198</sup> Expert witnesses for the Sierra Club testified that elevated levels of conductivity correspond to mining watersheds impaired for aquatic life.<sup>199</sup> High levels of surface mining in watersheds correspond to high levels of conductivity.<sup>200</sup>

The Board received testimony that high levels of conductivity reduce macroinvertebrate diversity, which is a building block of stream biodiversity.<sup>201</sup> Without biodiversity in streams, "ecosystem function collapses" and stream function is impacted.<sup>202</sup> Experts testified that MTR mining causes biological impairment in streams for macroinvertebrates through the chain to fish, amphibians, and birds.<sup>203</sup>

Based on this testimony, the EQB found that elevated levels of conductivity violate the state narrative WQS. The narrative WQS criteria prohibits discharges of "[m]aterials in concentrations which are harmful . . . to . . . aquatic life" or that cause "significant adverse impacts to the . . . biological components of aquatic ecosystems."<sup>204</sup> As a result, when a reasonable potential analysis indicates that a mine's discharge will violate the narrative WQS, WVDMR must impose conductivity limits.<sup>205</sup> Although the EQB did not set a numeric limitation on conductivity, it found that the narrative criteria guides the limitation. Thus, all mining sites, including sites on the abandoned mine list under the Water Fund, must not discharge materials in amounts that produce conductivity levels that result in harm to aquatic life or significant adverse impacts to aquatic ecosystems.

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197. *Board Members*, W. VA. ENVTL. QUALITY BD., <http://www.wveqb.org/board.asp> (last visited Nov. 2, 2013).

198. *Sierra Club*, Appeal No. 10-34-EQB, at 9.

199. *Id.* at 11-12.

200. *Id.* at 9.

201. *Id.* at 13, 17.

202. *Id.* at 10-11.

203. *Id.*

204. *Id.* at 22 (citation omitted) (quoting W. VA. CODE R. §§ 47-2-3.2.e, -3.2.i (2012)).

205. *See id.* at 23.

This decision was appealed by both WVDNR and Patriot Mining Company. EQB decisions are appealed to the Circuit Court of Kanawha County, West Virginia, a state trial court of general jurisdiction, presided by judges who are elected through partisan county elections. The circuit court reversed the EQB's decision on February 13, 2013.<sup>206</sup> The court's sole basis for reversal was the D.C. Circuit's decision that the EPA's guidance was *administratively* invalid and that the EQB gave no deference to WVDNR's interpretation of the narrative guidance. The court ignored all of the expert testimony received by EQB over the four-day period and the fact that WVDNR and Patriot failed to adduce any expert witnesses to oppose the evidence providing an association between conductivity levels, mining, and water quality impairment. The court also ignored the findings of the EQB of actual impairment in mining watersheds and the correlation to conductivity.

Instead, the court deferred to the WVDNR's "interpretation of water quality standards" and did not address the fact that WVDNR had actually failed to interpret the narrative standard.<sup>207</sup> WVDNR actually did not publish a guidance document until after the NPDES permit was approved. This "guidance" consists of an eight-page document taking a "wait and see" approach: wait until a problem exists in the watershed and then threaten the mine companies with limits (similar to the unlawful approach taken by WVDNR in selenium).<sup>208</sup> There is no scientific analysis in the eight-page guidance. The court also failed to identify how the EQB's finding that WVDNR failed to recognize documented and consistent evidence of actual biological impairments in streams where high levels of conductivity from surface mining occur was contrary to the evidence in the record.<sup>209</sup> Instead, the court wrongly relied upon inapplicable case law and ignored West Virginia Code section 22B-1-7 (stating EQB appeals shall be heard *de novo*) by requiring the EQB to

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206. Patriot Mining Co. v. Sierra Club, Nos. 11-AA-102, 11-AA-104, at 8 (Cir. Ct. of Kanawha Cnty., W. Va., Feb. 13, 2013), *available at* [http://www.jacksonkelly.com/pdf/2-13-13%20Final%20order%20\(2\).pdf](http://www.jacksonkelly.com/pdf/2-13-13%20Final%20order%20(2).pdf). The author notes that she was counsel for WVDEP from February 2010 through May 2011, while the initial appeal was pending before the circuit court. However, she was not an employee when the appeal was briefed and was not involved in the case at all. She was only an employee during the waiting period between the appeal and a decision by the circuit court. She was not an employee of WVDEP when the case was argued before the EQB or when the final decision by the EQB was entered.

207. *Id.* at 5.

208. See *Permitting Guidance for Surface Coal Mining Operations To Protect West Virginia's Narrative Water Quality Standards*, 47 C.S.R. 2 §§ 3.2.e and 3.2.i, W. VA. DEP'T OF ENVTL. PROT. (May 11, 2012), [http://www.dep.wv.gov/pio/Documents/Narrative/2010-08-18.%20Narrative%20Standards%20Permitting%20Guidance%20\(Rav.%201\).pdf](http://www.dep.wv.gov/pio/Documents/Narrative/2010-08-18.%20Narrative%20Standards%20Permitting%20Guidance%20(Rav.%201).pdf).

209. See *Sierra Club*, Appeal No. 10-34-EQB, at 9, 12-13.

defer to WVDEP's eight-page guidance. The court wrongly focused on the role of the EPA on state permitting, even though the EPA did not impose conductivity requirements in this case, the EPA had approved the permit without conductivity limits, and the EPA was not a party to the case before the EQB or the court.<sup>210</sup>

The court never found any grounds to exclude or ignore expert testimony on conductivity and its effects. The court needed to find that WVDNR's expertise contradicted the expert testimony in order to defer to WVDNR, but the court wholly failed to address this issue. The court also found that the EQB tried to establish de facto effluent limitations when the EQB expressly did not impose any numeric limits.<sup>211</sup> In its actual order, the EQB merely directed WVDNR to use the available scientific evidence on conductivity to establish a limit necessary to protect the narrative standard, which WVDNR is statutorily required to do.<sup>212</sup> In light of the extensive expert testimony adduced during the four days and the fact that the court used the wrong standard of review by solely attacking the EPA's guidance and requiring deference to WVDEP, this case was appealed and is pending before the Supreme Court of Appeals of West Virginia.

At this time, it is not known what levels of conductivity would violate the West Virginia narrative standard. However, the EPA's guidance provides strong scientific evidence linking conductivity to impairment of aquatic life. The science behind the EPA's conductivity guidance was not invalidated and should be used by mining regions in the absence of scientific evidence-based research by the states. Conductivity treatment may increase the liabilities for the Water Fund significantly.

Counsel for mining companies that operate West Virginia surface mines, including Patriot Mining Company in the EQB conductivity case, have argued that the mining industry cannot achieve conductivity levels without using "reverse osmosis—a technology not affordable to the surface mining industry."<sup>213</sup> Other counsel for mining companies have argued that reverse osmosis and evaporation/crystallization will reduce conductivity, but are "very expensive to build and operate," requiring

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210. See *Patriot Mining Co.*, Nos. 11-AA-102, 11-AA-104, at 6-7.

211. *Id.* at 4-5.

212. *Sierra Club*, Appeal No. 10-34-EQB, at 23-24.

213. Robert G. McLusky, *Sierra Club Seeks To Impose Conductivity and Sulfate Limits on Discharges from Kentucky Mines*, ENERGY & ENV'T MONITOR BLOG (Jan. 18, 2012), <http://eem.jacksonkelly.com/2012/01/sierra-club-seeks-to-impose-conductivity-and-sulfate-limits-on-discharges-from-kentucky-mines.html>. McLusky is counsel for Patriot Coal in the conductivity and selenium cases.

large areas of space for installation.<sup>214</sup> If complying with conductivity limits is not financially feasible for the for-profit surface mining industry, it cannot be financially feasible for the state and its \$9.4 million Water Fund.

WVDMR and the Special Reclamation Advisory Council have not researched the potential risks for conductivity treatment at abandoned sites. However, in his research on selenium, Ziemkiewicz included the cost for reverse osmosis technology as an option for the removal of selenium.<sup>215</sup> According to counsel for coal companies in West Virginia, the same reverse osmosis technology would be used for conductivity treatment. Cost estimates by Ziemkiewicz for reverse osmosis to meet selenium WQS could vary from the cost estimates to treat to conductivity WQS. However, Ziemkiewicz's estimates are a reasonable beginning estimate of the risk of liability West Virginia faces for conductivity treatment at abandoned mine sites.

Ziemkiewicz estimated that for 55 outlets, treatment using reverse osmosis would cost at least \$2.859 trillion for 20 years of treatment, with a maximum estimate of \$10.490 trillion for 20 years of treatment.<sup>216</sup> The mean cost of treating 55 outlets would be \$4.976 trillion.<sup>217</sup> These estimates do not take into account the cost of site access, site preparation, construction of flow equalization ponds, water diversions, or the cost of bringing electrical power into the remote surface mine sites, which are also significant costs.<sup>218</sup>

Conductivity pollution is more widespread than selenium. Violations of selenium WQS are limited to selenium-bearing coal seams. The EPA has designated the entire coalfield area in the state of West Virginia as subject to the conductivity benchmark of 300-500  $\mu\text{S}/\text{cm}$ .<sup>219</sup> Moreover, the EQB's ruling applies to all NPDES permitting within the state. Because WVDMR did not require conductivity limits or even

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214. Robert Stonestreet, *Stream Conductivity: It's Not Just a Mining Issue*, POWER MAG. (Feb. 1, 2011), [http://www.coalpowermag.com/commentary/Stream-Conductivity-Its-Not-Just-a-Mining-Issue\\_306.html](http://www.coalpowermag.com/commentary/Stream-Conductivity-Its-Not-Just-a-Mining-Issue_306.html). Mr. Stonestreet also advises that seawater conductivity levels are at levels that would harm *freshwater* aquatic life. Needless to say, West Virginia has not promulgated seawater aquatic life water quality standards. This author has oceanfront property in West Virginia to sell Mr. Stonestreet if he truly believes this comment to his clients. Mr. Stonestreet also astutely points out that Gatorade exceeds the conductivity levels for EPA's aquatic life protections as well. Although not a product liability practitioner, this author would advise Mr. Stonestreet to contact the manufacturer of Gatorade if dead fish are present in his Gatorade and consult other help if he expected live ones.

215. Ziemkiewicz, *supra* note 15, at 1.

216. *Id.* at 7.

217. *Id.*

218. *Id.* at 6.

219. See *Arch Coal Clean Water Act Settlement*, *supra* note 5.

sampling of surface mining outlets until recently under its NPDES program, the number of outlets in violation of WQS for the narrative criteria is unknown at this time. Given that the problems identified by the EPA's analysis appear to be more widespread than the problems identified with selenium, it is reasonable to assume that significantly more than 55 outlets are in noncompliance with West Virginia WQS for conductivity. Thus, West Virginia's risk of liability for reverse osmosis to treat conductivity could easily exceed \$10.490 trillion over 20 years of treatment.

#### X. LEGAL COSTS

In addition to the basic treatment, operating, and administrative costs associated with the state operating as an NPDES permittee, other significant costs may increase the liability to the Water Fund. Now that West Virginia is a permittee, it also has the risk of enforcement that is inherent to all NPDES permittees who violate the terms of their NPDES permits. The Special Reclamation Advisory Council has failed to take into account the cost for the state to defend itself against citizen suits for the state's failure to meet WQS at abandoned surface mine sites.

When the state does not meet WQS in a reasonable amount of time, the risk of a suit by citizens will increase. When a lawsuit is filed against West Virginia for violations of the CWA, the state will then feel the pressure that citizen groups like West Virginia Highlands Conservancy, Ohio Valley Environmental Coalition, and the Sierra Club have exerted on the coal industry in the past decade.

The amount of money that coal companies (and their insurers) have paid law firms is not public information, and any ballpark figure would be unreliable conjecture. However, West Virginia has been involved in a number of high-profile cases where it has defended itself and the coal industry from challenges by citizen groups and the EPA. The private law firm of Bailey & Glasser LLP represents WVDNR in coal mining related litigation, rather than state attorneys in the Office of Legal Services at WVDEP or the West Virginia Attorney General.<sup>220</sup> Bailey & Glasser's representation of WVDNR is exempt from the bidding process that normally accompanies contractor work with the state.

Bailey & Glasser has represented WVDNR intermittently since *Bragg v. Robertson* in 1999<sup>221</sup> and continues to represent WVDNR, most

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220. *Benjamin L. Bailey*, BAILEY & GLASSER, <http://www.baileyglasser.com/people/Benjamin-Bailey.htm> (last visited Oct. 28, 2013).

221. 190 F.R.D. 194 (S.D. W. Va. 1999).

recently in the challenge to the EPA conductivity guidance (which continues in litigation on federal appeal) and with issues arising from Patriot Coal's recent bankruptcy.<sup>222</sup> Bailey & Glasser also jointly represented WVDMR in the losses in federal court requiring NPDES permitting of abandoned surface mine sites.

From a review of warrants paid through the West Virginia State Auditor's Office, WVDEP has paid Bailey & Glasser over \$2.3 million for work over a period of 6 years (1999 to 2003 and 2010 to present).<sup>223</sup> If Bailey & Glasser continues its representation in issues related to bonding, reclamation, and surface mining, then those attorney's fees will likely increase.

It is unclear from what fund WVDMR would pay for its own representation in enforcement actions against itself—the Water Fund or a WVDMR Fund. Because the Office of Legal Services plays the role of enforcer for all state CWA enforcement litigation, it is possible that WVDMR would use outside counsel like Bailey & Glasser to defend itself in the role of violator. The argument should be made that enforcement penalties and attorney's fees constitute part of the cost for remediation and should be paid from the Water Fund. The surface coal mining industry should pay for those costs through the Special Reclamation Bond Program and the Water Fund tax, not taxpayers through WVDMR's state budget.

#### XI. FUTURE VIABILITY OF THE WATER FUND

West Virginia's SRF and Water Fund are essentially pyramid schemes. Liabilities are funded based upon the ludicrous presumption that mining will increase through time and continue far into the future at sustainable levels. Taxes that are paid on extracted coal today pay for liabilities from forfeitures 20 years ago. Likewise, whatever taxes are paid in the future will pay for the existing liabilities created by mine sites permitted today and those forfeited in the future. When the coal industry declines, so will the taxes paid into the Water Fund. West Virginia may currently be at the zenith of the amount of money going into the Water Fund. Like Wimpy in Popeye, the coal companies have gladly promised to pay West Virginia tomorrow for their pollution today.

In 2012, the Consensus Coal Production and Price Forecast for West Virginia (2012 Consensus) estimated that coal extraction in the state will

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222. *Benjamin L. Bailey, supra* note 220.

223. *Vendor Payment Search*, W. VA. STATE AUDITOR'S OFFICE, <http://www.wvsao.gov/VISTALite/VendorSearchlite.aspx> (enter "Bailey & Glasser" into search box; then click "search") (last visited Oct. 28, 2013).

decrease from 134.6 million tons mined in 2011 to 96 million tons by 2020.<sup>224</sup> This reduction represents a loss of 38.6 million tons, so West Virginia would receive \$5.79 million less in 2020 for the Water Fund (using the current tax rates). The 2012 Consensus estimate is significant because it reflects a severe drop in estimated coal mined in West Virginia from estimates even a year earlier. In 2012, the prospects for the coal economy in West Virginia reflected a more dramatic drop in production in a shorter period of time—a decade shorter than the 2011 estimates (which also predicted significant decreases in the coal market). The 2012 coal market dropped 6.5% in the first quarter of 2012 compared to the first quarter of 2011.<sup>225</sup>

The decline in the tax money going into the Water Fund is significant in light of current actuarial reports. The 2012 actuarial report found that the Water Fund would be depleted by 2037, using current tax rates and assuming that no expenditures from the Water Fund would occur until 2019.<sup>226</sup> However, the Water Fund had assets of \$8.7 million in 2011; in 2012, even after six months of increased taxes, the Water Fund held \$9.4 million, an increase of only \$700,000, despite over 100 million tons of coal mined in West Virginia.<sup>227</sup> This amount indicates that money is currently being expended from the Water Fund, despite the calculations in the actuarial report.<sup>228</sup> In the 2011 actuarial report, WVDNR stated that it would continue to pay for water liabilities from the general SRF and not use the Water Fund until June 2018 in order to allow the Water Fund to build assets.<sup>229</sup> So it is unclear how the Water Fund would remain solvent until 2037 if solvency was based upon no spending until 2019. With current expenditures and little gains in the Water Fund, it seems likely that the Water Fund will become insolvent much sooner than predicted.

The money in the Water Fund does not even come close to paying for existing liabilities, and it is certain that it cannot pay for future liabilities either. Fewer tons mined means that the Water Fund will decrease continuously through 2020, using current tax rates, while new

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224. GEORGE W. HAMMOND, W. VA. UNIV., CONSENSUS COAL PRODUCTION AND PRICE FORECAST FOR WEST VIRGINIA: 2012 UPDATE 1 (2012).

225. *Id.*

226. Special Reclamation Advisory Council, *supra* note 18, at 6.

227. *Compare id.* (\$9.4 million in assets), *with* Special Reclamation Advisory Council, *supra* note 16, at 8 (\$8.7 million).

228. Special Reclamation Advisory Council, *supra* note 18, at 6.

229. PINNACLE ACTUARIAL RES., INC., ACTUARIAL VALUATION OF THE SPECIAL RECLAMATION FUND & SPECIAL RECLAMATION WATER TRUST FUND 2 (2011).

reclamation sites will increase steadily, even in ideal economic conditions.

## XII. CONCLUSION

West Virginia created a scheme whereby it continuously approved mining permits that resulted in perpetual water pollution that impairs aquatic life. Then it systematically underbonded these same polluting sites, ignoring the known risks and the costs to reclaim those risks. Next, it undertaxed the entire mining industry for the Water Fund that was supposed to be the fail-safe program to back up its woefully underfunded bond system. As the final insult to the citizens of West Virginia, when faced with raising the tax rates on the coal industry, WVDMR instead denied that it had to meet WQS because, unlike every other discharger in the entire United States, it argued that it maintained some sort of special status because it had no money due to purposely underfunding itself rather than making the mining industry pay for its pollution from its booming coal-mining business.

It is disheartening to know that a state whose legacy recognizes that coal companies abused and took advantage of the state's miners for decades through harsh labor conditions not only allowed but also encouraged and facilitated coal companies to abuse and take advantage of its taxpayers under the guise of economic development, energy, and jobs. West Virginia miners unionized and fought against company scrip, payable only in the mining company's store, only for the state to accept the equivalent of scrip—worthless or underfunded bonds and taxation systems—to ensure the health of its citizens and environment.

Political theory accurately explains what has occurred in West Virginia. West Virginia became an “environmental sacrifice zone,” by providing cheap power to the country and increasing the profits of coal barons at the expense of its own environment and communities.<sup>230</sup> The environmental impacts facilitated by the improper mining permitting and bonding processes from the 1970s to present fits Robert Nixon's description of “slow violence,” a delayed destruction spread over space and time, not typically perceived as violence at all, but resulting in environmental degradation inflicted upon the poor.<sup>231</sup> The social constructs and political processes aligned in what John Gaventa described as power and powerlessness in the history of the Appalachian

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230. Fox, *supra* note 96, at 163; *see also* Jedediah S. Purdy, *Rape of the Appalachians*, AM. PROSPECT, Nov./Dec. 1998, at 28.

231. *See generally* ROB NIXON, SLOW VIOLENCE AND THE ENVIRONMENTALISM OF THE POOR (2011).

Valley since coal was first discovered.<sup>232</sup> The power of absentee landowners with coal interests shifted the balance from the need for consent from the governed to the absentee landowners governing the consent of men.<sup>233</sup> The state and the EPA's refusal to meaningfully enforce against flagrant violations by coal mines is environmental injustice against the people of West Virginia.<sup>234</sup> Mining technologies may have improved to allow more coal extraction, but results haven't changed since the mining industry entered West Virginia over a century ago. The citizens of West Virginia pay for the wealth of absentee coal owners.

Even worse than financial ruin, citizens warned the state that MTR was seriously affecting their health for years. Now, emerging academic research indicates through peer-reviewed scientific evidence that residents in areas near MTR sites suffer from illnesses with more prevalence than nonmining Appalachian areas.<sup>235</sup>

This Article addresses the reality that West Virginia faces very serious fiscal and environmental problems from surface mining. These problems must be addressed within the next decade. The problems in bonding amounts must be resolved prior to the insolvency of mine

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232. See generally JOHN GAVENTA, *POWER AND POWERLESSNESS: QUIESCENCE AND REBELLION IN AN APPALACHIAN VALLEY* (1980).

233. *Id.*

234. See generally Sarah J. Surber, *Environmental Enforcement as a Shield Rather than a Sword: How Environmental Injustice Resulted from Increased Coal Mining Violations After a Settlement with the Environmental Protection Agency*, 6 ENVTL. JUSTICE 169 (2013).

235. See, e.g., Melissa M. Ahern et al., *The Association Between Mountaintop Mining and Birth Defects Among Live Births in Central Appalachia, 1996–2003*, 111 ENVTL. RESEARCH 838, 843 (2011); Laura Esch & Michael Hendryx, *Chronic Cardiovascular Disease Mortality in Mountaintop Mining Areas of Central Appalachian States*, 27 J. RURAL HEALTH 350, 354 (2011); Michael Hendryx & Keith J. Zullig, *Higher Coronary Heart Disease and Heart Attack Morbidity in Appalachian Coal Mining Regions*, 49 PREVENTATIVE MED. 355, 358 (2007); Michael Hendryx et al., *Hospitalization Patterns Associated with Appalachian Coal Mining*, 70 J. TOXICOLOGY & ENVTL. HEALTH 2064, 2068 (2007); Michael Hendryx et al., *Lung Cancer Mortality Is Elevated in Coal-Mining Areas of Appalachia*, 62 LUNG CANCER 1, 5 (2008); Michael Hendryx, *Mortality from Heart, Respiratory, and Kidney Disease in Coal Mining Areas of Appalachia*, 82 INT'L ARCHIVES OCCUPATIONAL ENVTL. HEALTH 243, 247 (2007); Michael Hendryx, *Poverty and Mortality Disparities in Central Appalachia: Mountaintop Mining and Environmental Justice*, 4 J. HEALTH DISPARITIES RES. & PRAC. 44, 48 (2011); Michael Hendryx & Melissa M. Ahern, *Relations Between Health Indicators and Residential Proximity to Coal Mining in West Virginia*, 98 AM. J. PUB. HEALTH 669, 670 (2008); Michael Hendryx et al., *Self-Reported Cancer Rates in Two Rural Areas of West Virginia with and Without Mountaintop Coal Mining*, 37 J. COMMUNITY HEALTH 320, 324 (2011); David C. Holzman, *Mountaintop Removal Mining: Digging into Community Health Concerns*, 119 ENVTL. HEALTH PERSP. A476, A483 (2011); Travis L. Knuckles et al., *Air Pollution Particulate Matter Collected from an Appalachian Mountaintop Mining Site Induces Microvascular Dysfunction*, 20 MICROCIRCULATION 158, 165 (2012); see also Keith J. Zullig & Michael Hendryx, *A Comparative Analysis of Health-Related Quality of Life for Residents of U.S. Counties with and Without Coal Mining*, 125 PUB. HEALTH REP. 548, 553 (2010).

operators. The recent increase of the Special Reclamation Tax does not address the liabilities from future bond forfeitures combined with a decreasing mined tonnage and the resulting reduction in taxable coal.

WVDMR chronically failed to (1) adequately tax and require reclamation bonds from mining companies that sufficiently covered the risk of environmental damage caused by mining and (2) apply WQS to mining sites. The West Virginia legislature blatantly refused to increase the amount of the coal reclamation tax or the reclamation bond ceilings. As a result, West Virginia allowed coal companies to inundate its water bodies with illegal quantities of pollutants without adequate financial assurance to remediate the sites to clean up the polluted streams in the event coal companies abandoned those sites. West Virginia also failed to adequately consider that MTR sites would need permanent water treatment for perpetual discharges of pollutants and that the coal companies were not sufficiently bonded or financially solvent to pay for the risk of perpetual water treatment.

What could West Virginia do to improve the status of the Water Fund? It looks as though it could be entirely too late to fix the problems that decades of mismanagement and corporate greed have created. The pollution created from MTR cannot be undone. West Virginia must strike immediately in order to secure as much money as it can from the coal industry before the industry skips out on West Virginia.

West Virginia must reassess all existing reclamation bonds. Clearly, the bonds have no basis in reality to estimate the risk of liabilities. Reclamation bonds based upon acres mined makes absolutely no sense with regards to water liabilities. Just as Ziemkiewicz estimated in his report, West Virginia should base bonding on the gallons-per-minute flow of water that will be discharged from the site. The legislature should require WVDMR to take the amount of the highest potential cost of treatment technology and fully bond that amount. That is the only way to comply with the requirements of financial assurance under SMCRA and ensure that future abandoned sites requiring treatment do not end up as liabilities for the Water Fund.

West Virginia must “gather ye rosebuds while ye may.”<sup>236</sup> The state needs to fund the Water Fund and the bonding program as much as possible now while the coal industry remains solvent. The recent legislative Special Reclamation Tax increase does very little to improve the status of the Water Fund. The Special Reclamation Tax does not take into account the reality that the state’s entire budget will significantly

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236. THE COMPLETE POETRY OF ROBERT HERRICK 117 (J. Max Patrick ed., 1963).

decrease as coal mining decreases. The state will need to reduce its budget across the board and cannot afford to redirect other money into the Water Fund.

West Virginia needs to get out of the business of managing the Water Fund and assessing surety bonds by privatizing the venture. Let the coal industry find and pay for a capable financial institution to insure the long-term effects of MTR. A financial institution should bear the burden of financial risk of wholesale implosion of the coal industry. Even aside from the SRF and Water Fund, West Virginia's track record on managing trust funds and insurance is deplorable. The state of West Virginia mismanaged the Worker's Compensation system (now privatized), the Underground Storage Tank Fund (now defunct), the teachers' pension fund (underfunded), and the state employees' pension fund (underfunded). The fact that the legislature has maintained this Special Reclamation rouse in the face of repeated failures of the state in other financial endeavors is incredible.

These problems with the Water Fund must be addressed before the industry is significantly impacted by a decrease in mining. Even more disconcerting is that the state continues to permit new mines, even though it knows that the significant risks for water treatment exist and are not ameliorated in new surface mine operations, particularly MTR with valley fill sites. WVDNR has overwhelming, certain, and uncontroverted evidence that perpetual postmining pollution discharges result from MTR and continues to permit MTR under SMCRA. WVDNR must stop permitting surface mining sites that result in perpetual water pollutant discharges. WVDNR permits today the future abandoned, polluting mine sites of tomorrow.

West Virginia has not met its obligations under federal SMCRA for financial assurance. As a result, the state now faces discharges from hundreds of sites that do not meet WQS without the financial resources to treat these sites. Under SMCRA, West Virginia's authority under SMCRA can be revoked for these failures, and OSM can enforce existing permits and issue new permits in its place. This Article establishes a plethora of reasons why OSM should revoke West Virginia's SMCRA authority due to a chronic failure to properly bond and seek financial assurance "to protect society and the environment from the adverse effects of surface coal mining operations," as set forth in SMCRA.<sup>237</sup> Other reasons for revocation, such as inadequate enforcement of CWA and SMCRA violations at MTR sites, failure to

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237. 30 U.S.C. § 1202 (2006).

properly evaluate cumulative hydrologic impact assessments (CHIAs), and failure to properly certify that MTR sites would meet state WQS under section 401 of the CWA may exist, but are not addressed by this Article and should be the subject of further research.

This Article also raises the question of what have we learned from MTR permitting and bonding in West Virginia? Political decisions are not made using rational decision making, particularly when a powerful lobby like coal mining directs the conversation. Political influences can outweigh the need for serious investigation into potential problems and eliminate any thought of foresight. The EPA, OSM, the Army Corps of Engineers, and WVDNR did little to nothing for more than a decade while water quality declined and liabilities piled up. All of the checks and balances in the SMCRA system failed the citizens of West Virginia. Only the federal courts, with judges secure in lifetime appointments and largely free from political pressures, prompted by citizens concerned for the environment and the health of themselves and their neighbors, have moved to force the coal industry to comply with the explicit requirements of SMCRA and the CWA.

Citizens must continue to exert pressure on industry and the state through the federal judiciary. Any time that any industry emerges to use the state's natural resources and impact its environment, West Virginians and the rest of the country cannot rely upon the state's assurances that the practice is safe or that the costs will be paid. A person does not have to believe in environmentalism, in climate change, in adverse health effects from MTR and the burning of coal, or the importance of a healthy benthic community to see that MTR is a financial plague on West Virginia. MTR in West Virginia is the most expensive form of corporate welfare in the United States.

This Article establishes the potentially trillion-dollar debt the coal industry will certainly impose on West Virginia. The only question is how many more years, with newly filled streams and additional blown-up mountains, West Virginia has before this debt comes due. The coal industry wrote an expensive check that the state can never cash, at the expense of West Virginia's environment and its people. As a result, West Virginia, through its complete acquiescence to the desires of the coal industry, has burdened future generations of West Virginians with debts and pollution it cannot possibly afford. In essence, West Virginia's politicians have privatized profits to the benefit of Fortune 500 companies like Massey Energy Company, Alpha Natural Resources, and Patriot Coal Corporation, while socializing the costs to burden one of the poorest and generally worst-off states in the country.