Water and Coal Mining in Appalachia: Applying the Surface Mining Control and Reclamation Act of 1977 and the Clean Water Act

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THE CLEAN WATER ACT

Robert E. Beck*

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I. INTRODUCTION

This Article is being written for a symposium on water issues in the Appalachian region. As other articles in the symposium illustrate, states generally developed common-law principles to govern the use of water. In the eastern United States including the Appalachian region, these principles as applied to surface waters were generally termed riparian rights or riparianism. In many eastern states, these common-law principles have been supplemented and modified by statutes sufficiently comprehensive to now be recognized as a separate system called “regulated riparianism.” This Article relates to the intersection in the Appalachian region between the water resource and another still important resource, coal. The Appalachian region is rich in coal deposits; coal mining is

1 The Appalachian Mountains stretch from Quebec in the north to Alabama and Georgia in the south, some 1500 to 1600 miles.


3 At one time the term “littoral” was used to apply to lakes and ponds, reserving the term “riparian” for watercourses. Joseph W. Dellapenna, *Introduction to Riparian Rights*, in *WATERS AND WATER RIGHTS* § 6.02(b) (Robert E. Beck ed., 1991 ed., repl. vol. 2001). The law relating to surface waters in the eastern United States is generally termed “riparian rights” or “riparianism” as contrasted with the western United States where the law relating to surface waters is general termed “prior appropriation.” *See generally* Robert E. Beck, *The Legal Regimes*, in *WATERS AND WATER RIGHTS*, *supra*, § 4.05, at 4-5 to -11. Surface waters are one of three classifications generally created under the common law. The other two, diffused surface waters and groundwater, are discussed along with surface waters in Part V of this Article.

4 *See generally* Joseph W. Dellapenna, *Regulated Riparianism*, in *WATERS AND WATER RIGHTS*, *supra* note 3, ch. 9. Many other states have statutes that modify some common law aspect but are not sufficiently comprehensive to be recognized as a new system. *Compare id.* § 9.02, *with id.* § 9.03.

Professor Dellapenna identifies five of the nine Appalachian region coal states as having a form of regulated riparianism: Alabama, Georgia, Kentucky, Maryland, and Virginia. *Id.* § 9.03, at 9-36. Two of the five, Maryland and Kentucky, had moved to regulated riparianism by 1977 and Georgia did so in 1977. *Id.* For the complete list of Appalachian region coal states and location of the coalfields, see *infra* note 6.


6 See Figure I for a general indication of where coal is located within the Appalachian region.
still important to the region’s economy. Looking recently at coal mining from the Appalachian region, Paul Duffy noted that “[c]oal mining has been a major part of the Appalachian economy since the mid-1880s.”\(^7\) As the coal resource was being developed, conflicts about the impact of that development on other resources, particularly water, arose.

Conflicts between water users and mineral developers, including coal developers, arose early and in varying contexts throughout the country. Mineral development practices or consequences that were challenged included getting rid of water that interfered with mining\(^8\) or that accumulated in tunnels once mining was over,\(^9\) contaminating water with mine wastes,\(^10\) acquiring water to

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\(^7\) Paul A. Duffy, *How Filled Was My Valley: Continuing the Debate on Disposal Impacts, 17 Nat. Resources & Env’t 143, 143 (2003).*

\(^8\) As Professor Dellapenna has pointed out, many of the earliest controversies between adjoining landowners over groundwater arose because one landowner wanted to get rid of the water that the other landowner wanted to use. However, getting rid of the water on one tract of land meant getting rid of it on the other tract of land as well, or at least interfering with its use on that other tract. Thus the two were disputing about the water but not competing over the use of the water. Often the use that required getting rid of the water was mining. *Joseph W. Dellapenna, Legal Classifications, in 3 Waters and Water Rights § 19.02, at 19-9 & n.37 (Robert E. Beck ed., 1991 ed., repl. vol. 2003).*

\(^9\) In *Pennsylvania Coal Co. v. Sanderson*, 6 A. 453 (Pa. 1886), water first flowed from the defendant’s mine into Meadow Brook on its own. Later, the water that percolated into defendant’s mine shafts was pumped by the defendant from the shafts and ditched over defendant’s land into Meadow Brook. *Id.* at 454. The plaintiffs built a house on land riparian to Meadow Brook and used the water for a fish and ice pond and for domestic purposes and a fountain. *Id.* The stream became polluted and unusable for any of these purposes and soon the plaintiffs discontinued using the stream and brought suit for damages. *Id.* Plaintiffs won twice in the trial court. *Id.* at 455. The Pennsylvania Supreme Court, however, based its decision on the notion that “[t]he right to mine coal . . . is . . . a right incident to the ownership of coal property, and when exercised in the ordinary manner, and with due care[,] the owner cannot be held for permitting the natural flow of mine water over his own land, into the water course, by means of which the natural drainage of the country is effected.” *Id.* at 457. The court distinguished cases it described as deciding that one may not foul a stream to the damage of lower riparians by introducing a foreign substance into the stream and brought suit for damages. *Id.* at 464. See generally *Michael F. Browning, Mine Dewatering: Water Right and Water Quality Issues, 38 Rocky Mt. Min. L. Inst. 24-1 (1992).* Water issues also have arisen in the context of producing coalbed methane gas. See *Rebecca W. Watson & Holly J. Franz, Coalbed Natural Gas and Water Management: Water Appropriation, Water Quality and Water Conflicts, 47 Rocky Mt. Min. L. Inst. 17-1 (2001).*

\(^10\) In *Commonwealth v. Barnes & Tucker Co.*, 319 A.2d 871 (Pa. 1974), the defendant operated its underground Mine No. 15 from 1939 until 1969 when the mine was closed and sealed. *Id.* at 873. Thereafter, the mine began to inundate with water, and in 1970 there were substantial
use either in the mining itself\textsuperscript{11} or in processing the mineral once mined,\textsuperscript{12} disposing of that water once used,\textsuperscript{13} and using water in transporting the mineral.\textsuperscript{14}

discharges of acid mine drainage at two locations. \textit{Id.} Pennsylvania sued to require the defendant to treat the acid mine drainage. \textit{Id.} The trial court entered a preliminary injunction requiring continual treatment with the defendant and the state sharing costs until final disposition of the case on the merits. \textit{Id.} Subsequently, the trial judge denied permanent injunctive relief, rejecting all of the state’s theories. \textit{Id.} The Pennsylvania Supreme Court, however, found that relief could be granted under either the theory of statutory public nuisance or the theory of common law public nuisance. \textit{Id.} at 880.


\textsuperscript{11} In hydraulic mining, for example, streams of water were directed at the overburden to wash it away. Often, this overburden was being washed directly into a stream, resulting in further litigation, often between the state and the miner when the run-off clogged streams and turned navigable rivers into nonnavigable ones. See, e.g., People v. Gold Run Ditch & Mining Co., 4 P. 1152 (Cal. 1884).

\textsuperscript{12} The U.S. Geological Survey reported an estimated withdrawal of 3,770 million gallons of water per day (mgd) for mining use in 1995, a 22-percent decrease from its 1990 figures. WAYNE B. SOLLEY ET AL., U.S. GEOLOGICAL SURVEY, CIRCULAR 1200, ESTIMATED USE OF WATER IN THE UNITED STATES IN 1995, at 44-47 (1998), http://water.usgs.gov/watuse/pdf1995/html. The authors surmised that the statistical decrease may be due largely to the fact that the Survey no longer includes dewatering of a mine as a water withdrawal. \textit{Id.} at 44. Of the 3,770 mgd, 1,210 mgd is saline. \textit{Id.} Of the water withdrawn, 27 percent is consumed and 73 percent constitutes return flow. Of the nine Appalachian region coal states, see supra note 6, seven are listed as withdrawing the minimum for mining, 0 to 50 mgd (Alabama, Georgia, Kentucky, Maryland, Tennessee, Virginia, and West Virginia); Ohio is at 50 to 100 mgd; and Pennsylvania is at 150 to 300 mgd. \textit{Id.} at 46.

In \textit{Farmers Investment Co. v. Bettwy}, 558 P.2d 14 (Ariz. 1976), the plaintiff farm owner sued the Anamax Mining Company and others to enjoin them from pumping groundwater and using that groundwater on lands other than the lands where the pumping occurred. \textit{Id.} at 16-17. Anamax was using the water in its copper ore milling and treatment facilities. \textit{Id.} at 18-19. A proposed enlargement of the operation would have required an additional 6,000 acre feet of water per year. \textit{Id.} at 19. At least some of the water was being consumed in the process, and there was insufficient recharge to make up for all of the withdrawals. \textit{Id.} at 21. The Arizona Supreme Court reversed the trial judge’s decision not to issue a preliminary injunction against Anamax. \textit{Id.} Water cannot be “pumped from one parcel and transported to another . . . if the plaintiff’s lands or wells upon his lands thereby suffer injury or damage.” \textit{Id.} The court observed that, if one use was to be preferred over another use, then the legislature should decide that and “designate when and under what circumstances.” \textit{Id.}

Questions have arisen as to how a mine operator or mineral processor can assure an adequate quantity of water for the enterprise. See Jerry L. Haggard, \textit{What Can Mine Management Do to Safeguard Water Rights?}, AM. MINING CONG. J., Dec. 1988, at 13. As mining or processing operations grew in size and required more outside financing, those financiers needed some certainty that the various elements necessary to the enterprise were available. These questions became key when considering coal conversion technologies. See Coal Liquefaction Demonstration Plant Near Morgantown, W. Va., 45 Fed. Reg. 55,994 (Aug. 21, 1980); John B. Stall, ILL. STATE WATER SURVEY, WATER FOR COAL CONVERSION IN ILLINOIS (1975) (map).

Until the 1970s, state water law alone generally dealt with these issues. However, in the 1970s, Congress passed two acts that made conflicts between coal development and water use the subject of federal law. These acts were the Surface Mining Control and Reclamation Act of 1977 ("SMCRA")\(^\text{16}\) and the Federal Water Pollution Control Act Amendments of 1972 ("FWPCA").\(^\text{17}\) The FWPCA was amended by the Clean Water Act of 1977,\(^\text{18}\) and the cumulative legislation today is generally referred to as the Clean Water Act ("CWA").\(^\text{19}\)

With a body of state water law already in existence, Congress was not legislating regarding water on a clean slate with either Act, but the very act of legislating shows that Congress apparently deemed the state law insufficient for one reason or another. On the other hand, unless Congress makes it very clear otherwise, Congress intends for its legislation to be understood in the context of that existing body of state water law.\(^\text{20}\) Indeed Congress provides in SMCRA that state law remains extant unless found to be "inconsistent with" SMCRA.\(^\text{21}\)

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\(^\text{14}\) Barge traffic carrying coal is common on the Ohio and Mississippi Rivers. See U.S. Army Corp of Eng'rs, Coal for Electric Power Generation (Ohio River basin), at http://outreach.lrh.usace.army.mil/Industries/Coal/default.htm (last visited Apr. 5, 2004); U.S. Army Corp of Eng'rs, Upper Mississippi/Illinois/Missouri Basin Profile (Upper Mississippi River basin), at http://outreach.lrh.usace.army.mil/Basin/UMRiver/text/default.htm (last visited Apr. 5, 2004). In the 1970s, a major, but unsuccessful, effort blossomed to expand the use of coal slurry pipelines, where raw coal is ground and mixed with water to form a slurry of a consistency that can be transported in a pipeline from the mine mouth to the user. See generally Office of Tech. Assessment, A Technology Assessment of Coal Slurry Pipelines 27-29 (1978). As to the failure of the effort, see Barlow Burke, Jr., et al., Mineral Law Cases and Materials 339-380 (1994); William F. Webber, Coal Slurry Pipelines Are Ready, Willing, and Unable to Get There, 11 St. Mary's L.J. 765 (1980).

\(^\text{15}\) See, e.g., cases cited supra notes 8-12.


\(^\text{19}\) See C. Peter Goplerud III, Technological Controls, in 5 Waters and Water Rights, supra note 17, § 53.01(a), at 237 n.4. The Environmental Protection Agency (EPA) still uses both terms. Compare 40 C.F.R. §§122.1(a), 122.2 (2003), with 40 C.F.R. § 104.2(a) (2003).

\(^\text{20}\) The United States Supreme Court has noted, "Where Congress has expressly addressed the question . . . [of abiding] by state water law, it has almost invariably deferred to the state law." United States v. New Mexico, 438 U.S. 696, 702 (1978). Therefore, the assumption is that Congress intends to abide by state law when it does not say anything. See id. at 701-02.

Controversies have arisen about the applicability and scope of the statutory provisions. This Article will explore how the two federal statutes deal with water in the context of coal development, examining them from a perspective of consistency with pre-existing state water law in an attempt to see if that approach would help solve some of the controversies.

Because SMCRA is specific to coal mining whereas the CWA applies generally to industries including coal mining, this Article reviews SMCRA first. The Article then explores how the CWA relates to SMCRA in the coal development context. The balance of this Article begins with a brief history and brief overview of SMCRA. It then summarizes the water provisions in SMCRA, analyzes those provisions and the regulations promulgated thereunder in the context of state water law, reviews the relationship between SMCRA and the CWA, and concludes with a review of how in general the two Acts impact on coal mining in Appalachia.

II. SMCRA History

Although surface mining control and reclamation bills were introduced in Congress before 1965 and many different bills were introduced thereafter, a rather straightforward history of SMCRA begins in 1965 with the enactment of the Appalachian Regional Development Act of 1965. In this Act, Congress directed the Secretary of the Interior to "make a survey and study of strip and surface mining operations and their effects in the United States" and to submit

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22 See, for example, the cases cited infra notes 383, 398, 539.

23 See COMM. ON GROUND WATER RECHARGE IN SURFACED MINED AREAS, NAT'L RESEARCH COUNCIL, SURFACE COAL MINING EFFECTS ON GROUND WATER RECHARGE 118 (1990) [hereinafter SURFACE COAL MINING EFFECTS].

24 See id. at 119.


26 § 205(c), 79 Stat. at 14. The Act also provided for the Secretary of the Army to develop "a comprehensive plan for the development and efficient utilization of the water and related resources of the Appalachian region," § 206(a), 79 Stat. at 16, which may recommend measures for the control of floods, the regulation of the rivers to enhance their value as sources of water supply for industrial and municipal development, the generation of hydroelectric power, the prevention of water pollution by drainage from mines, the development and enhancement of the recreational potentials of the region, the improvement of the rivers for navigation where this would further industrial development at less cost than would the improvement of other modes of transportation, the conservation and efficient utilization of the land resource, and such other measures as may be found necessary to achieve the objectives of this section.

§ 206(b), 79 Stat. at 16. The plan was to be submitted to the Appalachian Regional Commission, created in Title I of the Act, §§ 101-108, 79 Stat. at 6-10, and to Congress by December 31, 1968. § 206(d), 79 Stat. at 16.
recommendations to the President. A general concern that unreclaimed mine land hindered economic development in the Appalachian region appeared to motivate inclusion of the study in the Development Act. However, Congress provided a list of factors for the Secretary to consider in his survey and study. In one of these factors, Congress specified consideration of the "public interest" and "public benefits" that could result from reclamation, rehabilitation, and "appropriate development and use" of the strip and surface mined areas. In this public interest and benefits factor, Congress, in turn, specified consideration of: "(A) economic development growth, (B) public recreation, (C) public health and safety, (D) water pollution, stream sedimentation, erosion control, and flood control, (E) highway programs, (F) fish and wildlife protection and restoration, (G) scenic values, and (H) forestry and agriculture." While all of these considerations can have some relevance to the water resource, (D) and (F) specifically relate to water and appear to do so with an environmental focus.

The Secretary of the Interior's 1967 Report of the Study contained an overall conclusion about the impact of surface mining with a decidedly environmental focus:

The result [of strip and surface mining] is a drastic reshaping of the surface, an alteration of normal surface and sub-surface drainage patterns. Square miles of land may be turned over to a depth of 100 feet or more and valleys rimmed by mile after mile.

From early in its history, the U.S. Army Corps of Engineers has been delegated the task of performing water resource and water project studies such as $5,000 in 1820 to study steamboat navigation on the Ohio and Mississippi Rivers and $20,000 in 1822 for a feasibility study for a Delaware breakwater. See Todd Shallat, Structures in the Stream: Water, Science, and the Rise of the U.S. Army Corps of Engineers 125 (1994). For further discussion of the Corp's role, see infra text accompanying notes 470-491, 509-517, 539-548.

27 These recommendations were to be "for a long-range comprehensive program for reclamation and rehabilitation of strip and surface mining areas in the United States and for policies under which the program should be conducted." § 205(c), 79 Stat. at 14. The President, in turn, was to submit the program and policies to the Congress with his recommendations by July 1, 1967. Id.

28 See §§ 2, 205(a), 79 Stat. at 5-6, 13.
29 § 205(c)(1)-(6), 79 Stat. at 14-15.
30 § 205(c)(4), 79 Stat. at 15. The other items in the list were: (1) the nature and extent of strip and surface mining and the resulting conditions; (2) the ownership of the real property involved in the operations; (3) the effectiveness of past state or local government actions to remedy adverse effects; (4) the appropriate roles for federal and state governments and private interests in the reclamation and rehabilitation of the mined areas; and (5) the cost of reclamation and rehabilitation of existing strip and surface mined areas. § 205(c)(1)-(3), (5)-(6), 79 Stat. at 14-15.
31 § 205(c)(4), 79 Stat. at 15.
of contour benches. Massive landslides have blocked streams and highways, waters have been polluted by acid and sediment, land areas isolated, and economic and esthetic values seriously impaired.\textsuperscript{33}

The Report also contained discrete comments about the impact of surface mining on water in the Appalachian region. It first noted that "[t]he surface mining industries are not the major contributor to the degradation of our water supplies on a national basis, yet in many areas such as Appalachia, they are a significant source of pollution."\textsuperscript{34} The Report then identified two specific Appalachian region problems. First,

many streams in the Appalachian region are affected to various degrees by acid drainage from both surface and underground mines. Although acid conditions are associated with coal mining conducted elsewhere, the problems are not usually so severe because the topography is not as rugged, rainfall is less profuse, pyritic materials oxidize more slowly, and, in some cases, limestone formations act as a neutralizing agent.\textsuperscript{35}

Second,

in areas undisturbed by strip mining within the Appalachian region, the average annual sediment yield ranges from about 20 to 3,000 tons per square mile of watershed, depending upon land use. Research conducted in Kentucky indicated that yields from coal strip-mined lands can be as much as 1,000 times that of undisturbed forest. During a four-year period, the annual average from Kentucky spoil banks was 27,000 tons per square mile while it was estimated at only 25 tons per square mile from forested areas.\textsuperscript{36}

Over the course of the ten years between 1967 and 1977, Congress held many hearings\textsuperscript{37} and passed three SMCRAs,\textsuperscript{38} two of which were vetoed.\textsuperscript{39} As

\textsuperscript{33} \textbf{SURFACE MINING AND OUR ENVIRONMENT}, \textit{supra} note 32, at 51.

\textsuperscript{34} \textit{Id.} at 56.

\textsuperscript{35} \textit{Id.} at 63.

\textsuperscript{36} \textit{Id.}

\textsuperscript{37} \textit{See SURFACE COAL MINING EFFECTS}, \textit{supra} note 23, at 119. For example, see \textit{Regulation of Surface Mining Operations: Hearings on S. 425 and S. 923 Before the Comm. on Interior and Insular Affairs United States Senate Part 1}, 93d Cong. (1973).

\textsuperscript{38} 123 CONG. REC. 23,988, 24,428-29 (1977) (voting on Surface Mining Control and Reclamation Act of 1977); 121 CONG. REC. 12,965, 13,386 (1975) (voting on Surface Mining Control and
the excerpts from the Secretary's Report indicate, underground mining creates some of the same surface effects that surface mining does. Thus, each version of SMCRA, including the two vetoed versions, was drafted to include coverage of both surface mining and the surface effects of underground mining as well. Before SMCRA finally became law in 1977, Congress made each version of SMCRA more stringent and more inclusive than it was in earlier versions. The 1977 House Report on SMCRA noted: "As new environmental problems were identified and mining practices evolved, the bills were amended so that it can be rationally asserted that H.R. 2 now benefits from a 6-year evolution being 'fine-tuned' and updated as it moved through the legislative process."

III. OVERVIEW OF SMCRA

Congress, as we saw, was motivated in the Appalachian Development Act by a concern that unreclaimed mine land in Appalachia was hindering economic development. However, Congress had also raised environmental con-

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39 President Ford pocket vetoed the Surface Mining Control and Reclamation Act of 1974. See Memorandum of Disapproval of Surface Mining Control and Reclamation Legislation, December 30, 1974, in PUBLIC PAPERS OF THE PRESIDENTS OF THE UNITED STATES: GERALD R. FORD 780, 781 (1974) (giving as reasons that, as a result of unnecessary restrictions, it would unduly impair ability to use coal in the United States and at the same time would exacerbate the oil import problem and increase unemployment). The following year he vetoed the Surface Mining Control and Reclamation Act of 1975. See Veto of a Surface Mining Control and Reclamation Bill, May 20, 1975, in 1 PUBLIC PAPERS OF THE PRESIDENTS OF THE UNITED STATES: GERALD R. FORD 693, 693-94 (1975) (giving as reasons: up to 36,000 people losing jobs, higher electricity bills, more dependency on foreign oil, and coal production unnecessarily reduced). However, he noted: "I continue to support actions which strike a proper balance between our energy and economic goals and important environmental objectives." Id. at 694. The House sustained the veto on June 10, 1975, on a vote of 278 for, 143 against, one voting present, and 12 not voting. 121 CONG. REC. at 18,008.

40 See supra text accompanying note 35.

41 See 30 U.S.C. § 1266 (2000); Surface Mining Control and Reclamation Act of 1974, §§ 101, 212, reprinted in 120 CONG. REC. at 25,273-74, 25,280; Surface Mining Control and Reclamation Act of 1975, § 516, reprinted in 121 CONG. REC. at 6213-14. Such coverage was also in the first bill passed in either chamber, H.R. 6482, 92d Cong. (1972), reprinted in 118 CONG. REC. 35,055-56 (1972); see id. §§ 2(c), 3(d), reprinted in 118 CONG. REC. at 35,031-32.

42 H.R. REP. No. 95-218, at 57 (1977), reprinted in 1977 U.S.C.C.A.N. 593, 595. However, to fully understand and apply SMCRA, one should study not just this six-year evolution but the entire twelve-year, 1965-1977, process.

43 See supra text accompanying note 28.
cerns for the Secretary to study and, as we saw, the Secretary’s Report focused on these environmental concerns. Thus, it is not surprising that Congress established a program for reclaiming land currently being mined and land to be mined in the future that focused on environmental parameters. Similarly, it is not surprising that Congress also established a program for reclaiming abandoned mine land. The program for current and future mining was to be accomplished through the regulation of mining operations. The program for abandoned mine areas was to be conducted by the state or federal government and based on a fee imposed on each ton of coal mined in the future.

For the regulatory program, Congress established a permitting process that made it unlawful to operate a coal mine without a permit. As to the standards for issuing permits, the idea initially appeared to be that Congress would only establish minimum standards applicable to all parts of the country leaving detailed regulation to the states, but ultimately Congress included some provisions specific to particular regions of the country. Congress declared that “be-

44 30 U.S.C. §§ 1251-1279 (2000); see infra Part IV.C. “SMCRA regulates surface coal mines that have been active since August 3, 1977, the date of SMCRA’s enactment.” Am. Mining Cong. v. EPA, 965 F.2d 759, 766 (9th Cir. 1992).

45 30 U.S.C. §§ 1231-1243 (2000); see infra Part IV.B.


48 30 U.S.C. §§ 1252(a),1256(a) (2000). Congress created several exceptions to SMCRA coverage. See id. § 1278 (extraction by landowners for own noncommercial use from land owned or leased; extraction as incidental part of federal, state, or locally funded highway or other construction); id. § 1291(28)(A) (extraction of coal incidental to extraction of other minerals where coal does not exceed 16 2/3 % of tonnage of minerals removed for commercial use or sale; coal exploration); id. § 1291(13) (extraction of 250 tons or less within twelve months on one location). Congress initially also created an exception where an “operation affects two acres or less.” § 528(2), 91 Stat. at 514. Congress repealed the exception in 1987. See Act of May 7, 1987, Pub. L. No. 100-34, § 201(a), 101 Stat. 300, 300.

49 Having national minimum standards was important to Congress: “The Congress finds and declares that . . . (g) surface mining standards are essential in order to insure that competition in interstate commerce among sellers of coal produced in different States will not be used to undermine the ability of the several States to improve and maintain adequate standards on coal mining operations within their borders.” 30 U.S.C. § 1201(g) (2000).

50 See, e.g., id. § 1265(b)(7) (prime farmlands provision for the midwest); id. § 1265(c) (mountain top waiver for the Appalachian region); id. § 1260(b)(5)(A) (alluvial valley floor provision for the West); id. § 1277(c) (providing exceptions for bituminous coal mines “west of the 100th meridian west longitude” that meet specified criteria from some of the reclamation requirements including “elimination of depressions capable of collecting water, creation of impound-
cause of the diversity in terrain, climate, biologic, chemical, and other physical conditions in areas subject to mining operations, the primary government responsibility for... [administering the] Act should rest with the States." Congress then provided that states could take over administration of SMCRA by developing "a State program which demonstrates... capability of carrying out the provisions of this Act and meeting its purposes." The "purposes" of SMCRA that the states must demonstrate to the Secretary that they are capable of meeting are set out primarily in Title I of SMCRA. However, essentially all of the substantive and procedural "provisions" regarding current and future coal mining that the states must demonstrate that they are capable of carrying out are set out in Title V of SMCRA, which Congress labeled "Control of the Environmental Impacts of Surface Coal Mining." This wording testifies to the fact that SMCRA is essentially an environmental protection statute enacted to deal

51 Id. § 1201(f). The differences between the Appalachian region and other coal mining areas in the United States had been pointed out by the Secretary in his Report. See supra text accompanying notes 34-36.

52 30 U.S.C.§ 1253(a) (2000). At present, seven of the nine Appalachian region coal states administer SMCRA: Alabama, Kentucky, Maryland, Ohio, Pennsylvania, Virginia, and West Virginia. See 30 C.F.R. pts. 901, 917, 920, 935, 938, 946, 948 (2003). Federal programs exist for the other two Appalachian states: Georgia and Tennessee. Id. pts. 910, 942. In this Article, I focus on SMCRA requirements and not on how the nine Appalachian region coal states individually apply SMCRA.

53 30 U.S.C. §§ 1251-1279 (2000). There are nine titles in SMCRA. Three titles, Titles III, VIII, and IX, create research institutes, laboratories, and fellowships and have no bearing on this Article. The remaining five titles have relevance to this Article and are considered at appropriate points. They are Title I on Findings and Policy, Title II on the Office of Surface Mining Reclamation and Enforcement, Title IV on Abandoned Mine Reclamation, Title VI on Designation of Lands Unsuitable for Mining, and Title VII on Administrative and Miscellaneous Provisions.

54 Id. § 1202(a); id. § 1202(d). The major focus that SMCRA would take was determined in the House of Representatives in 1974. Three bills were in contention and all three were voted on by the full House. The Committee bill (H.R. 11,500) prevailed on a vote of 291 in favor and 81 against, with 62 not voting. 120 CONG. REC. 25,271-73 (1974). The other two bills had been defeated. The Hechler bill (H.R. 15,000), so-called because Congressman Hechler of West Virginia was its chief proponent, would have phased out surface mining completely within several years. See Strip Mining Abolition Act of 1974, H.R. 15,000, 93d Cong. § 101, reprinted in 120 CONG. REC. at 24,081. It was defeated on a vote of 69 in favor and 336 against, with 29 not voting. 120 CONG. REC at 24,107-08. The Hosmer bill (H.R. 12,898) named for its chief proponent Congressman Hosmer of California, was defeated on a vote of 156 in favor and 255 against, with 23 not voting. Id. at 24,080. A later vote to substitute the Hosmer bill lost on a vote of 106 in favor and 267 against, with 61 not voting. Id. at 25,271-72.

In 1972, the chief proponent of banning all surface mining, Congressman Hechler of West Virginia, observed:

Why am I adamantly opposed to strip mining as a means of removing coal from the land? Why have I continued to work for the abolition of this strip mining of coal? Representing one of the largest coal-producing States in the
with the perceived environmental problems arising from surface mining. The same fact situations that create environmental problems also create threats to public safety such as from spoil slides on mountain slopes and flooding, threats to the economy from rendering other resources such as land and water unusable for other purposes, and even threats to the supply of coal itself. If a

Nation, I have seen what havoc and obliteration is left in the wake of strip mining. It has ripped the guts out of our mountains, polluted our streams with acid and silt, uprooted our trees and forests, devastated the land, seriously disturbed or destroyed wildlife habitat, left miles of ugly highwalls, ruined the water supply in many areas, and left a trail of utter despair for many honest and hard-working people. It is very important to remember that this devastation is not restricted to West Virginia or to Appalachia.

118 CONG. REC. 35,049 (1972).

The Hosmer bill was touted by advocates as "a viable alternative" and as "the balanced substitute for the unbalanced H.R. 11500." 120 CONG. REC. at 24,076-77.

55 For example in SMCRA § 516(c), 30 U.S.C. § 1266(c) (2000), Congress provided that the Regulatory Authority is to "suspend underground mining adjacent to ... major impoundments, or permanent streams" among other locations when the Authority finds "imminent danger to inhabitants of the urbanized areas, cities, towns, and communities." For additional references to safety in SMCRA, see infra text accompanying or within notes 84, 134, and 234. See also the summary conclusion from the Secretary of the Interior's Report, SURFACE MINING AND OUR ENVIRONMENT, supra note 32, quoted supra text accompanying note 33.


57 Concern for the future of coal was reflected in President Nixon's message to Congress:

Our most abundant domestic source of energy is coal. We must learn to use more of it, and we must learn to do so in a manner which does not damage the land we inhabit or the air we breathe.

Surface mining is both the most economical and the most environmentally destructive method of extracting coal. The damage caused by surface mining, however, can be repaired and the land restored. I believe it is the responsibility of the mining industry to undertake such restorative action and I believe it must be required of them.

I have proposed legislation to establish reclamation standards which would regulate all surface and underground mining in this country. These standards would be enforced by the States. I call again for enactment of this proposal, for it would enable us to increase the supply of a highly economic fuel while avoiding the severe environmental penalties which we have often paid in the past.

Special Message to Congress on National Legislative Goals, Sept. 10, 1973, in PUBLIC PAPERS OF THE PRESIDENTS OF THE UNITED STATES: RICHARD NIXON 761, 769 (1973) (included under the heading, "Meeting the Energy Challenge"). In the same message, President Nixon also berated Congress for failing to pass proposals on National Land Use Policy, Toxic Substances, and Safe Drinking Water. Id. at 771-72 (included under the heading, "Restoring and Renewing our Environment"). The litany of adverse effects of surface mining operations recited in SMCRA § 101(c) attest to the legitimacy of the concern over the future of coal mining in at least some mining areas:

[M]any surface mining operations result in disturbances of surface areas that burden and adversely affect commerce and the public welfare by destroying or
state program is approved, state jurisdiction is exclusive "except as provided in sections 521 and 523 and title IV of this Act" once the state takes over administration. Because section 521 deals with enforcement of SMCRA, it therefore contains a significant exception to exclusivity.

To oversee implementation of the provisions in SMCRA, Congress created the Office of Surface Mining Reclamation and Enforcement (commonly abbreviated OSM) in the Department of the Interior. Congress gave the Secretary of the Interior, acting through OSM, authority to promulgate regulations, approve or disapprove state programs, oversee state administration, and provide federal programs for states that do not take over administration.

With Congress's initial concern that abandoned mine land affected economic development, it is not surprising that a major focus of the environmental provisions in SMCRA is on those environmental problems that leave the land unproductive after the mining is over. Thus, SMCRA is primarily an environmental reclamation statute dealing with putting the affected land back into "a condition capable of supporting the uses which it was capable of supporting prior to any mining, or higher or better uses of which there is reasonable likeli-


Thus, although the federal government cannot issue mining permits during state administration, it can enforce the law. See generally Robert E. Beck, The Federal Role Under the Surface Mining Control and Reclamation Act of 1977 (SMCRA) on Nonfederal Lands After State Primacy, 31 TULSA L.J. 677 (1996) (discussing the scope of the federal role after state administration begins).


30 U.S.C. § 1211(c). Whoever administers the regulatory program, whether the state or the federal government, in a given state is known as the "regulatory authority" in that state. Id. § 1291(22).

See supra note 28 and accompanying text.

See supra text accompanying note 31.
hood." Indeed, if the land cannot be reclaimed, it is to be treated as unsuitable for mining. The reclamation process focuses on segregating and saving the overburden; returning the overburden to the mined area in the proper order and to the approximate original contour; and revegetating the surface. These focal points indicate that regulatory controls apply not only after mining is over but also during the mining process.

In one section of Title V, Congress specifies twenty-five discrete environmental controls that cover both the mining process and the reclamation that follows mining. These controls apply to all "surface coal mining and reclamation operations" that are regulated by SMCRA. This phrase is defined

64 30 U.S.C. § 1265(b)(2) (2000); see also id. § 1265(b)(19)-(20). Congress created a higher standard for “prime farmland” as “equivalent or higher levels of yield.” Id. § 1260(d)(1). Congress defined prime farmland to have the same meaning as that previously prescribed by the Secretary of Agriculture on the basis of such factors as moisture availability, temperature regime, chemical balance, permeability, surface layer composition, susceptibility to flooding, and erosion characteristics, and which historically have been used for intensive agricultural purposes, and as published in the Federal Register. Id. § 1291(20).

65 Land is not to be mined if it cannot be reclaimed, see id. § 1201(c), and the permit is to be denied. Id. § 1260(b)(2). As to designation of other land as unsuitable, see infra text accompanying notes 80-81, and infra Part IV.D.

66 30 U.S.C. § 1265(b)(4)-(5) (2000). Sometimes overburden is referred to as “spoil.” However, OSM defines the two differently in terms of before and after. Thus, it defines overburden as “material of any nature, consolidated or unconsolidated, that overlies a coal deposit, excluding topsoil,” and spoil as “overburden that has been removed during surface coal mining operations.” 30 C.F.R. § 701.5 (2003).


68 Id. § 1265(b)(2)-(3), (5)-(6).

69 Id. § 1265(b)(19)-(20).

70 Id. § 1265(b)(1)-(25).

71 Surface coal mining operations are defined in SMCRA § 701(28). Id. § 1291(28). Title V of SMCRA provides for two phases of implementation, an initial program phase and a permanent program phase. Congress specified those environmental control sections that were to be implemented during the first phase and, of the ones relating to water, they include SMCRA § 515(b)(2)-(3), (5), (10), and (15), id. §§ 1265(b)(2)-(3), (5), (10), (15), but did not include SMCRA § 515(b)(4), (8)-(9), (12), (14), (17)-(18), and (24). Id. §§ 1265(b)(4), (8)-(9), (12), (14), (17)-(18), (24). New mines were to comply within six months and mountaintop and related mines were to comply within nine months, but only if annual production exceeded 100,000 tons. Id. § 1252(a)-(c). For mountaintop mines, SMCRA § 515(c)(4)-(5) standards were to be enforced, but SMCRA §§ 515(b)(3), (d)(2)-(3) were to be disregarded. Id. § 1252(c). Further, SMCRA § 515(d) on steep slopes was to be enforced except that as to mountaintop mining § 515(d)(2) and (3) were to be disregarded. Id.

American Mining Congress v. EPA, 965 F.2d 759 (9th Cir. 1992), illustrates that this now long past phasing-in can still make a difference. EPA exempted permanent program coal mines,
broadly so that it covers (1) mining on the surface and other related activity as specified in the definition, and (2) surface operations of, and surface impacts incident to, mining underground. However, Congress also included a section within Title V that specifies twelve discrete environmental controls that apply specifically to operators who mine coal underground. To the extent that there are any conflicts between the general environmental controls section and the underground mining controls section, the provisions in the underground mining section would prevail due to their specificity. Congress also provided that in applying standards to underground coal mining that are not specified in the underground mining provision, the Secretary can modify the standards to take into account the differences between mining on the surface and mining underground.

Despite the application to underground mining, the principal focus of SMCRA is on mining that takes place on the surface. Although the environmental controls on surface coal mining are to be stringent, Congress did not intend to terminate surface coal mining. The observations of Senator Howard Baker of Tennessee seem fairly representative:

There are those who have argued long and with much conviction that we must ban coal surface mining, at least in the mountains. While I understand and sympathize with their cause, I

but not initial program coal mines, from the storm water discharge permit requirement promulgated under CWA § 402(p) in 1990. See National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges, 55 Fed. Reg. 47,990, 48,065 (Nov. 16, 1990) (to be codified at 40 C.F.R. pts. 122, 123, 124). Section 402(p) was added in 1987. The court upheld the EPA’s discrimination. Am. Mining Cong., 965 F.2d at 768. As to why phase two operations are exempted, see id. at 767-68.

72 For exceptions to SMCRA’s coverage, see supra note 48.
74 Id. §1266(b)(1)-(12).
75 Id. § 1266(b)(10).
76 See supra text accompanying note 42.
77 See supra note 54.
78 Mr. BAKER. . . . I make no bones about it. If I thought for one moment we could depend entirely in our country on gas or oil for electricity for our needs, I would say that we should do just that.

I come from an area of the country that has been virtually destroyed. I can see from my house a whole watershed that has been virtually destroyed.

I would like to stop it at this moment — it is an atrocity. However, I have a responsibility to see to it that we do what is best for our country. So I subordinate my dislike for coal mining to the hard reality that we have to continue, I hope only under the most carefully drafted standards.
feel that the impact upon the economy and the electric power industry warrants that we take a more rational approach by undertaking to analyze the environmental impacts of surface mining and then drafting strong protective measures to control and prevent those problems.  

Despite the extensive environmental control and protection measures that Congress included in SMCRA and despite its decision not to terminate surface mining, Congress still found that geographic areas exist where significant alteration of the environment through human endeavors should not be allowed. Thus, Congress both listed specific areas that are unsuitable for mining\(^\text{80}\) and set forth criteria for identifying other areas that are unsuitable for mining.\(^\text{81}\)

Of the twenty-five environmental standards noted earlier,\(^\text{82}\) fifteen specifically relate to water,\(^\text{83}\) although often dealing with another resource as well.

\begin{quote}
The key and operative test, it seems to me, is how do we go about internalizing the cost of the environmental impact of surface mining, because for every pound of coal that is moved from the ridges and hills of Appalachia without a concomitant requirement for restoration, it represents a subsidy to the cost of the coal to the rest of the Nation borne by a region of the country that is the poorest and least able to pay for it.

I am tired of Appalachia paying part of the bill for the rest of the Nation. I am tired of seeing the mountains destroyed in order that the cost of electricity might be less than if sound technology were used.

I am tired of seeing poor people pay part of the bill for rich people. However, I cannot bring myself to say that we do not need that coal. We do need the coal. It is not a question of needing coal. It is a question of what it costs and who pays for it.

I believe this bill . . . requires a difficult but desirable degree of reclamation as a price for extracting coal by the strip mine method.

So I support surface mining, not because I like it — I do not — but because I think it is essential and will be more essential to recover our vast coal resources and develop them in the future.
\end{quote}


\(^{79}\) Id. at 33,191.


\(^{81}\) 30 U.S.C. § 1272(a)-(d). For discussion of the criteria, see infra Part IV.D.

\(^{82}\) See supra text accompanying note 70.

\(^{83}\) 30 U.S.C. § 1265(b)(2)-(5), (7)-(10), (12), (14)-(15), (17)-(18), (22), (24) (2000). Of direct relevance, but not included in the list, are SMCRA § 515(b)(23), id. § 1265(b)(23), relating to climate factors, and SMCRA § 515(b)(25), id. § 1265(b)(25), relating to erosion. SMCRA §
as water.\textsuperscript{84} Of the twelve environmental standards that apply specifically to surface effects of underground mining, four specifically relate to water.\textsuperscript{85} Other sections in SMCRA besides these two that provide environmental standards also refer specifically to water, for example those relating to abandoned mine lands\textsuperscript{86} and lands unsuitable for mining.\textsuperscript{87} There also are many provisions in SMCRA that just refer to "adverse effects" of surface mining operations, or use similar language, some of which will, of course, relate to the water resource.\textsuperscript{88} In this Article, I focus on the provisions that specifically identify the water resource and discuss the role that each group of water-specific provisions plays.

IV. THE WATER PROVISIONS IN SMCRA

The water provisions in SMCRA can be classified into four general groups for discussion purposes. Those groups consist of (A) Findings, Declarations, and Purposes; (B) Abandoned Mine Reclamation; (C) Active Mines; and (D) Designating Lands Unsuitable for Mining.

A. Findings, Declarations, and Purposes

In the findings and declarations in SMCRA, Congress made specific reference to impacts from mining operations on the water resource and the impacts that the damaged water resource has in turn on commerce and the public welfare.\textsuperscript{89} These operations, Congress noted, contribute to floods, pollute water, destroy fish and wildlife habitats, and counteract government programs and efforts to conserve soil, water, and other natural resources.

Although Congress stated the purposes of SMCRA generally in terms of protecting the "environment,"\textsuperscript{90} Congress did mention water specifically in one of the purposes. That purpose is to "promote the reclamation of mined areas left

\textsuperscript{84} E.g., 30 U.S.C. § 1265(b)(4) (covering water pollution and air pollution); id. § 1265(b)(12) (covering water and health and safety of underground miners); id. § 1265(b)(14) (covering water and combustion); id. § 1265(b)(15) (covering water and injury to persons and property).

\textsuperscript{85} Id. § 1266(b)(4), (9), (11)-(12); see infra text accompanying notes 133, 138-139, 157, 159. The reference to "fish" in SMCRA § 516(b)(11), 30 U.S.C. § 1266(b)(11), is considered a reference to the water habitat. See also id. § 1266(c), quoted supra note 55.

\textsuperscript{86} See infra Part IV.B.

\textsuperscript{87} See infra Part IV.D.

\textsuperscript{88} E.g., 30 U.S.C. § 1201(a) (2000); id. § 1267(h).

\textsuperscript{89} Id. § 1201(c); see also id. § 1201(d).

\textsuperscript{90} Id. § 1202(a), (d); see supra text accompanying notes 54-57.
without adequate reclamation prior to [the enactment of this Act] and which continue . . . [to] prevent or damage the beneficial use of . . . water resources . . . .91 This purpose is carried out in Title IV of SMCRA on Abandoned Mine Reclamation.92

B. Abandoned Mine Reclamation

In Title IV of SMCRA,93 Congress established a program for the “reclamation and restoration of land and water resources adversely affected by past coal mining.”94 Past coal mining was defined in terms of land and water that would not be subject to either the active mine program under SMCRA or an obligation to reclaim under a pre-existing State program.95 Title IV contains specific references to water in four contexts.96

First, Congress created an Abandoned Mine Reclamation Fund (“Fund”)97 and made it clear that money from the Fund could be spent to deal

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92 Id. §§ 1231-1243.
93 Id.
94 Id. § 1231(c)(1); see Comm. on Abandoned Mine Lands, Nat’l Research Council, Abandoned Mine Lands: A Mid-Course Review of the National Reclamation Program for Coal 3-8 (1986) (containing nineteen recommendations for improvement). The recommendations generally were programmatic in nature; however, one recommendation did focus specifically on the water resource. It recommended that Title V and the Clean Water Act should encourage remining of abandoned mine lands “where the condition of these lands and associated water can, at a minimum, be maintained at least to that at the time of remining.” Id. at 5. Congress amended the CWA in 1987 to include provisions on coal remining operations allowing modification of pH levels of pre-existing discharges and of iron and manganese. Water Quality Act of 1987, Pub. L. No. 100-4, § 307, 101 Stat. 7, 37 (codified as amended at 33 U.S.C. §§ 1313, 1342 (2000)). This amendment specified, however, that nothing in the amendment was to “affect the application of [SMCRA] . . . to any coal remining operation.” Id. Remining is to result “in the potential for improved water quality from the remining operation.” Id. Congress subsequently added specific consideration of remining to SMCRA. See 30 U.S.C. § 1234 (2000), amended by Energy Policy Act of 1992, Pub. L. No. 102-486, § 2503(d), 106 Stat. 2776, 3103. Congress also added a section on abandoned coal refuse sites to SMCRA, allowing “on-site reprocessing of abandoned coal refuse.” § 2503(e), 106 Stat. at 3103 (codified at 30 U.S.C. § 1251a (2000)).
95 30 U.S.C. § 1234 (“lands and water eligible for reclamation or drainage abatement expenditures”). In general the cut-off date was August 7, 1977. See supra note 44. In 1990, Congress amended SMCRA to allow the use of moneys in the Fund “for the reclamation and drainage abatement of lands and waters” where operations occurred on or after August 4, 1977 and were left inadequately reclaimed if (1) the events occurred during the period before state primacy was approved, or (2) if the events occurred any time up to November 5, 1990, and the surety of the operator became insolvent during that period and other sources of funds were insufficient. Abandoned Mine Reclamation Act of 1990, Pub. L. No. 101-508, §§ 6004, 104 Stat. 1388-289, 1338-290 (codified as 30 U.S.C. § 1232(g)(4) (2000)).
96 30 U.S.C. §§ 1233(3)-(4), 1236(a)-(d), 1237(a), (c), 1242(d) (2000).
97 Id. § 1231.
with sedimentation and acid mine drainage – the two major Appalachian region water problems identified by the Secretary.\footnote{98}{Moneys from the Fund could be used for “planting of land adversely affected by past coal mining to prevent erosion and sedimentation; prevention, abatement, treatment, and control of water pollution created by coal mine drainage including restoration of stream beds, and construction and operation of water treatment plants.” \textit{Id.} \S 1231(c)(1). As to the source of the funds, see \textit{supra} note 47.} Two of the listed objectives for the Fund specifically referred to water.\footnote{99}{\textit{See} Surface Mining Coal and Reclamation Act of 1977, Pub. L. No. 95-87, \S 403(3)-(4), 91 Stat. 445, 459 (amended by Abandoned Mine Reclamation Act of 1990, Pub. L. No. 101-508, 104 Stat. 1388-289) (current version as amended at 30 U.S.C. \S 1233(a)(3) (2000)).} Congress listed objectives in order of priority for the expenditure of moneys from the Fund on eligible lands and water as identified in the Act.\footnote{100}{\S 403, 91 Stat. at 458 (current version at 30 U.S.C. \S 1233(a) (2000)); 30 U.S.C. \S 1234.} The third objective in priority but the first to refer to water is restoring “land and water resources and the environment previously degraded by adverse effects of coal mining practices.”\footnote{101}{\textit{Id.} \S 403(3), 91 Stat. at 459 (current version at 30 U.S.C.1233(a)(3) (2000) as renumbered by \S 6002, 104 Stat. at 1388-290).} Such restoration efforts could include “measures for the conservation and development of soil, water (excluding channelization), woodland, fish and wildlife, recreation resources, and agricultural productivity.”\footnote{102}{\textit{Id.}; see also \S 6010(2), 104 Stat. at 1388-296 (current version at 30 U.S.C. \S 1240a (2000)) (establishing further priorities where a state or Indian tribe certifies that all priorities listed in 30 U.S.C. \S 1233(a) have been achieved)).} The fourth objective in priority and second to refer to water was repealed in 1992.\footnote{103}{This objective had been for “research and demonstration projects relating to the development of surface mining reclamation and water quality control program methods and techniques.” 30 U.S.C. \S 1233(4) (1988), \textit{repealed by} Energy Policy Act of 1992, Pub. L. 102-486, \S 2504(c)(2), 106 Stat. 3105, 3106.} However, amendments to the section in 1990 added a provision on utilities and other facilities.\footnote{104}{\S 6005(3), 104 Stat. at 1388-294 (current version at 30 U.S.C. \S 1233(b) (2000)); see also \S 6010(2), 104 Stat. at 1388-296 (current version at 30 U.S.C. \S 1240a(e) (2000)) (utilities provision)).} This provision authorizes states and Indian tribes to expend up to thirty percent of funds allocated to them on “protecting, repairing, replacing, constructing, or enhancing facilities relating to water supply, including water distribution facilities and treatment plants, to replace water supplies adversely affected by coal mining practices.”\footnote{105}{30 U.S.C. \S 1233(b).} Second, in addition to the general objectives and identification of eligible lands and waters just noted, Congress created a separate section on reclamation of rural lands.\footnote{106}{\textit{Id.} \S 1236.} This section authorizes the Secretary of Agriculture to
enter into agreements with landowners, "including owners of water rights." 107 Such agreements are to provide "for land stabilization, erosion, and sediment control, and reclamation through conservation treatment, including measures for the conservation and development of soil, water (excluding stream channelization), woodland, wildlife, and recreation resources, and agricultural productivity of such lands." 108 A landowner wanting such an agreement would submit a conservation and development plan to the Secretary. 109 If "the water rights or water supply of a tenant, landowner, including owner of water rights, resident, or tenant have been adversely affected by a surface or underground coal mine operation which has removed or disturbed a stratum so as to significantly affect the hydrologic balance," the plan can "include proposed measures to enhance water quality or quantity by means of joint action with other affected landowners, including owners of water rights." 110 Where the plan is incorporated into an agreement, 111 the Secretary of Agriculture can furnish financial and other assistance to carry out the land use and conservation treatment called for in the agreement. 112 This includes up to eighty percent of the cost of enhancing water quality or quantity although the amount can be reduced whenever the primary benefits are offsite. 113 The agreements, which are for up to ten years, 114 can be terminated by mutual agreement. 115

Third, the Secretary of the Interior or a State with an approved state program can obtain entry onto property where "land or water resources have been adversely affected by past coal mining practices" if some action should be taken on the property, but the property owner refuses consent. 116 Furthermore, they can acquire the land where, among other things, "permanent facilities such as a treatment plant or a relocated stream channel will be constructed on the land." 117

Finally, a section on miscellaneous powers gives the Secretary of the Interior or a State with an approved state program authority to construct and oper-
ate plants to control and treat water pollution that results from mine drainage.\textsuperscript{118} The extent of the control and treatment depends on what the ultimate use of the water will be.\textsuperscript{119} This authority, however, does not repeal or supersede any part of the Clean Water Act ("CWA"), and no control or treatment under this authority can be less than that required by the CWA.\textsuperscript{120}

Coal mining states can establish approved state programs and request funds from the Secretary. Two major problems that the Secretary identified from abandoned mine lands in the Appalachian region were sedimentation and acid mine drainage.\textsuperscript{121} As noted above,\textsuperscript{122} funds can be spent to deal with these problems. Indeed, when a state continues to apply for funds each year, it is to note among other things "miles of stream improved."\textsuperscript{123} Clearly, acid mine drainage is still identified as a significant problem of pre-SMCRA coal mining in the Appalachian region.\textsuperscript{124} In 1990, Congress added special provisions to SMCRA for states to use funds for "acid mine drainage abatement and treatment" if the state set up a fund as authorized in the legislation.\textsuperscript{125} The Secretary’s Clean Streams Program now funds projects to deal with acid mine drainage, having funded seventy-seven projects in ten states to date.\textsuperscript{126} One reason that problems remain is that the federal government has not been spending all of the money that it has collected for abandoned mine reclamation on abandoned mine reclamation purposes.\textsuperscript{127} Another problem relates to allocation of the funds. Mike Ferullo, a BNA reporter, has noted that it would take West Vir-

\textsuperscript{118} Id. § 1242(d).

\textsuperscript{119} Id.

\textsuperscript{120} Id.; see supra note 17. For discussion of the relationship of the rest of SMCRA to the CWA, see infra Part VI.C.

\textsuperscript{121} See supra text accompanying notes 35-36.

\textsuperscript{122} See supra note 98.


ginia fifty years under the present formula to complete its high-priority abandoned mine reclamation projects.\textsuperscript{128}

However, despite shortcomings, the Abandoned Mine Reclamation program has provided for reclamation that might not otherwise have been accomplished. It certainly is not clear that the states would have stepped in to fund the reclamation or that they would have had the will to tax coal producers in their borders for funding.\textsuperscript{129} Obviously, there were impediments to finding common-law responsibility for the problems, even assuming a cause of action in the first instance.\textsuperscript{130} Legal impediments such as statutes of limitation and practical impediments such as dissolution or insolvency stood in the way.\textsuperscript{131}

C. Active Mines

There are numerous provisions in SMCRA that refer to the water resource in connection with active coal mines. These provisions are divided into six categories for discussion purposes: (1) Water Pollution; (2) Water Quantity and/or Ecosystem Maintenance; (3) The Approximate Original Contour Requirement and Related Water Provisions; (4) Water Resource Information; (5) Enforcement; and (6) Protecting and Replacing Water Rights and Water Supply.

1. Water Pollution

Not surprisingly, in view of the Appalachian region findings of the Secretary relating to acidification and sedimentation noted earlier,\textsuperscript{132} water-specific environmental standards in SMCRA relate to acidification and to erosion and sedimentation. Three of the fifteen general environmental standards and two of the standards that relate specifically to underground mining deal with acidification.\textsuperscript{133} The general standards require that the mining operation (1) seal auger


\textsuperscript{129} Some states, such as Pennsylvania, had provided some statutory reinforcement to the common law, but states did not have programs whereby current mine operations were taxed to pay for solutions to problems created by abandoned mines. \textit{See} Commonwealth v. Barnes & Tucker Co., 319 A.2d 871 (Pa. 1974).

\textsuperscript{130} Nuisance would be the most likely basis.


\textsuperscript{132} \textit{See supra} text accompanying notes 35-36.

holes in order to prevent drainage,\textsuperscript{134} (2) dispose of specified materials\textsuperscript{135} in a way “designed to prevent contamination of ground or surface waters,”\textsuperscript{136} and (3) keep a prohibited distance from an underground mine unless going closer will itself abate water pollution.\textsuperscript{137} The first underground mining standard specifies that mining permits must require the operator to stabilize spoil and waste and assure that any leachate will not degrade water below applicable federal and state surface or ground water quality standards.\textsuperscript{138} The second underground mining standard specifies that the permits must require the operator to site openings for all new drift mines that work acid-producing or iron-producing coal seams so that the openings “prevent a gravity discharge of water from the mine.”\textsuperscript{139}

If in no other way, the three general provisions in SMCRA go beyond requirements in the CWA in setting bright line standards of sealing auger holes and maintaining a specific distance from underground mines and in protecting groundwater from contamination. While the specific underground mining standard on drift mines presents a bright line standard, the other underground mining standard protects against nonpoint source pollution.\textsuperscript{140} While the CWA does not protect against nonpoint source pollution, the CWA’s standards for cleanliness of the water would apply to determining the amount of nonpoint source pollution allowed under SMCRA.\textsuperscript{141}

Three of the fifteen general environmental standards deal with sedimentation. One standard requires the mining operation “to effectively control erosion and attendant . . . water pollution,” from all surface areas including spoil piles that have been affected by the mining operation by stabilizing and protecting those surface areas.\textsuperscript{142} A second standard requires the mining operation to insure that access road construction, maintenance, and postmining conditions of access roads into and across the site of the operation “will control or prevent

\textsuperscript{134} 30 U.S.C. § 1265(b)(9) (2000). Sealing applies except where the Regulatory Authority on the one hand determines that impounding of the water in the auger holes “may create a hazard to the environment or the public health or safety” or on the other hand prohibits augering if necessary to maximize fuel source recovery or conservation “or to protect against adverse water quality impacts.” \textit{Id.}

\textsuperscript{135} These include debris, acid-forming materials, toxic materials, or materials constituting a fire hazard. \textit{Id.} § 1265(b)(14).

\textsuperscript{136} \textit{Id.}

\textsuperscript{137} \textit{Id.} § 1265(b)(12).

\textsuperscript{138} \textit{Id.} § 1266(b)(4).

\textsuperscript{139} \textit{Id.} § 1266(b)(12).

\textsuperscript{140} \textit{See infra} text accompanying notes 426-31.

\textsuperscript{141} \textit{See infra} text accompanying notes 554-57.

\textsuperscript{142} 30 U.S.C. § 1265(b)(4); \textit{see also id.} § 1265(b)(25) (slope slides and erosion).
erosion and siltation, pollution of water, damage to fish or wildlife or their habitat.”

As noted earlier, Congress provided in SMCRA for returning mine spoil to the mined area but recognized that when overburden is removed it loses some of its compaction. With the loss of compaction, “volumetric expansion” occurs and the restoration process would not be able to achieve original compaction during reclamation. Thus, there will be “excess” spoil, that is spoil not needed to meet the approximate original contour requirement Congress set out in SMCRA. The third water-specific general environmental standard relating to sedimentation deals with this excess spoil and provides that it is to be shaped and graded so that “slides, erosion, and water pollution” are prevented.

These SMCRA standards on sedimentation go beyond CWA requirements in that the SMCRA standards require prevention of water pollution from nonpoint sources. Again, however, the CWA standards for cleanliness of the water would apply to determining the amount of nonpoint source pollution allowed under SMCRA.

2. Water Quantity and/or Ecosystem Maintenance

The water-specific environmental standards discussed in subpart 1 dealt with water pollution; the remaining water-specific environmental standards demonstrate the intent of Congress to protect the water resource in two additional ways. These are, first, the way the water contributes to the ecosystem in which it is located and, second, the way the water is used to serve human beings.

Thus, the remaining water-specific environmental standards focus either

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143 Id. § 1265(b)(17).
144 See supra text accompanying note 67.
146 Id.; see infra Part IV.C.3.
147 30 U.S.C. § 1265(b)(3). However, two additional water-specific environmental standards seek solely to prevent “water erosion” in order to protect the topsoil or spoil piles during the mining process so that they are available and suitable for use in the reclamation process and therefore do not have a prevention of sedimentation focus. Thus, under SMCRA § 515(b)(5), the duty is to maintain stored topsoil to preserve it from “water erosion” unless it is to be used “within a time short enough to avoid deterioration of the topsoil.” Id. § 1265(b)(5). Similarly, for protection of stockpiled prime farmland A horizon and B horizon soils from water erosion, see id. § 1265(b)(7)(A)-(B).
148 See infra text accompanying notes 426-31.
149 See infra text accompanying notes 554-57.
150 In Virginia Surface Mining & Reclamation Association v. Andrus, the court, in finding Congress’s commerce power validated SMCRA, noted that the unproductivity of the land resulting from coal mining affected commerce but observed that “more important” were “the potential costs in terms of stream pollution, floods, landslides, loss of fish and wildlife habitats, erosion of other lands, and hydrological imbalances that cumulatively have a substantial impact on interstate
on ecosystem maintenance or protecting water quantity or both. One of the general standards requires the mining operation to restore "land affected" so as not to "pose any actual or probable threat of water diminution or pollution." Thus, this standard focuses on quantity separately from the impact that diminution in quality can have on the usability of the water for any given purpose. A second general standard requires the operation to "minimize the disturbances to the prevailing hydrologic balance at the mine-site and in associated offsite areas and to the quality and quantity of water in surface and ground water systems both during and after surface coal mining operations and during reclamation." This is to be done by doing specific things listed in the Act. In commerce." 483 F. Supp. 425, 431 (W.D. Va. 1980), aff'd in part, rev'd in part, Hodel v. Va. Surface Mining & Reclamation Ass'n, 452 U.S. 264 (1981). On appeal, the Supreme Court, in sustaining SMCRA, reinforced this multi-faceted environmental focus, quoting at length from a House Committee Report:

The most widespread damages . . . are environmental in nature. Water users and developers incur significant economic and financial losses as well.

Reduced recreational values, fishkills, reductions in normal waste assimilation capacity, impaired water supplies, metals and masonry corrosion and deterioration, increased flood frequencies and flood damages, reductions in designed water storage capacities at impoundments, and higher operating costs for commercial waterway users are some of the most obvious economic effects that stem from mining-related pollution and sedimentation.


Some of the pollution standards contain broader language that serve these purposes as well as pollution control. See supra note 84. To review the list of factors that, in 1965, Congress instructed the Secretary of the Interior to look at in studying the effects of surface mining, see supra text accompanying note 31.

"Land affected" is not defined in SMCRA. While "land affected" is not defined in C.F.R. either, "affected area" is defined to include "any land or water surface area which is used to facilitate, or is physically altered by, surface coal mining and reclamation operations." 30 U.S.C. § 701.5 (2003).

The list contains six specific provisions and one catch-all provision. See id. § 1265(b)(10)(A)-(G). The specific provisions, (A)-(F), relate to acidification, sedimentation, water quantity and supply, and alluvial valley floors.

(A) avoiding acid or other toxic mine drainage by such measures as, but not limited to—

(i) preventing or removing water from contact with toxic producing deposits;

(ii) treating drainage to reduce toxic content which adversely affects downstream water upon being released to water courses;

(iii) casing, sealing, or otherwise managing boreholes, shafts, and wells and keep acid or other toxic drainage from entering ground and surface waters;
this standard there are three considerations with concern over the prevailing hydrologic balance being considered separately from quality or quantity.\textsuperscript{156} A standard specific to underground mining contains the same hydrologic balance language although the list of things to do is shorter for underground mining.\textsuperscript{157}

(B) (i) conducting surface coal mining operations so as to prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids to streamflow, or runoff outside the permit area, but in no event shall contributions be in excess of requirements set by applicable State or Federal law;

(ii) constructing any siltation structures pursuant to subparagraph (B)(i) of this subsection prior to commencement of surface coal mining operations, such structures to be certified by a qualified registered engineer or a qualified registered professional land surveyor in any State which authorizes land surveyors to prepare and certify such maps or plans to be constructed as designed and as approved in the reclamation plan;

(C) cleaning out and removing temporary or large settling ponds or other siltation structures from drainways after disturbed areas are revegetated and stabilized; and depositing the silt and debris at a site and in a manner approved by the regulatory authority;

(D) restoring recharge capacity of the mined area to approximate premining conditions;

(E) avoiding channel deepening or enlargement in operations requiring the discharge of water from mines;

(F) preserving throughout the mining and reclamation process the essential hydrologic functions of alluvial valley floors in the arid and semiarid areas of the country; and

(G) such other actions as the regulatory authority may prescribe.

\textit{Id.} For several specific sediment control measures, see 30 C.F.R. § 816.45 (2003). Questions about the application of the recharge provision were referred to the National Academy of Sciences. See \textit{Surface Coal Mining Effects}, supra note 23, at v-vi. As to the catchall provision in 30 U.S.C. § 1265(b)(10)(G), OSM is not the "regulatory authority" except in those states where it has primacy. See \textit{supra} text accompanying notes 51-59.


\textsuperscript{157} 30 U.S.C. § 1266(b)(9) (2000); see Permanent Regulatory Program Performance Standards
A third general environmental standard requires the mining operation to “the extent possible using the best technology currently available, minimize disturbances and adverse impacts of the operation on fish, wildlife, and related environmental values, and achieve enhancement of such resources where practicable.”\(^{158}\) This standard focuses on even larger ecosystem patterns than the two previous standards. A standard specific to underground mining contains the same language as the general standard.\(^{159}\)

The four remaining water-specific general environmental standards relate to water supply. Two of those standards seek to maintain normal flow in watercourses as a means to assure no disruption to quantity.\(^{160}\) A third standard allows depressions to be left when contouring the mined area in order to collect moisture for vegetation.\(^{161}\) The fourth standard allows water impoundments with the limitation that the impoundment is not to diminish the quality or quantity of the water that is used “by adjacent or surrounding landowners for agricultural, industrial[,] recreational, or domestic uses.”\(^{162}\)

Based upon the very broad scope of the general hydrologic balance and fish and wildlife standards, OSM promulgated a buffer zone regulation to protect surface waters from harm during the mining and reclamation processes.\(^{165}\) This regulation has become important in recent litigation\(^{166}\) and will be

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\(^{159}\) _Id._ § 1266(b)(11).

\(^{160}\) First, the mining operation must limit the type of explosives, detonating equipment, and blasting practices “so as to prevent . . . (iv) change in the course, channel, or availability of ground or surface water outside the permit area.” _Id._ § 1265(b)(15)(c). Second, the mining operation must refrain from building “roads or other access ways up a stream bed or drainage channel or in such proximity to such channel so as to seriously alter the normal flow of water.” _Id._ § 1265(b)(18).

\(^{161}\) The operation must not leave small depressions unless “needed in order to retain moisture to assist revegetation or as otherwise authorized pursuant to this Act.” _Id._ § 1265(b)(3). This appears to be an exception to the approximate original contour requirement. See _supra_ text accompanying note 67; _infra_ Part IV.C.3. The section also contains requirements to “provide adequate drainage” and to grade excess spoil so as “to prevent slides, erosion, and water pollution.” 30 U.S.C. § 1265(b)(3); see _supra_ text accompanying notes 144-47.

\(^{162}\) 30 U.S.C. § 1265(b)(8)(F). The section provides conditions for any permanent water impoundment on the mining site. This is an exception to the approximate original contour requirement. See Nat’l Wildlife Fed’n v. Hodel, 839 F.2d 694, 759-60 (D.C. Cir. 1988); _infra_ Part IV.C.3.

\(^{163}\) _See supra_ text accompanying note 154.

\(^{164}\) _See supra_ text accompanying note 158.

\(^{165}\) For the text of the regulation, see _infra_ note 338. The district court in _Bragg v. Robertson_,
discussed at some length in the context of surface waters.\textsuperscript{167} While pollution prevention helps retain water sources in a condition that allows them to sustain an ecosystem and be available for human use and/or consumption, having clean water is not enough. There has to be an appropriate quantity in appropriate places as well. Thus, these SMCRA provisions on water quantity and ecosystem maintenance go well beyond the requirements of the CWA with its focus on water pollution.


Although one of the environmental standards in SMCRA requires returning the mined area to the approximate original contour ("AOC"),\textsuperscript{168} Congress provided for several situations where the requirement need not be met. First, SMCRA contains exceptions both for when there is insufficient overburden due to thick coal seams and when there is excessive overburden due to "volumetric expansion."\textsuperscript{169} Second, SMCRA allows granting of an exception for mountain top mining.\textsuperscript{170} Third, SMCRA contains a provision for granting a

\begin{flushleft}
72 F. Supp. 2d 642 (S.D. W. Va. 1999), got mixed up, citing correctly to (b)(10) and (b)(24), but then erroneously quoting (b)(18) rather than (b)(10). \textit{Id.} at 649-50.
\end{flushleft}

\textsuperscript{166} \textit{Id.}

\textsuperscript{167} \textit{See infra} Part V.C.1.

\textsuperscript{168} \textit{See supra} text accompanying note 68.

\textsuperscript{169} 30 U.S.C. § 1265(b)(3) (2000). As to volumetric expansion, see \textit{supra} text accompanying notes 144-47. For the definition of overburden, see \textit{supra} note 66.

\textsuperscript{170} 30 U.S.C. § 1265(c). Senate Bill 425, Surface Mining Reclamation Act of 1973, as introduced in 1973, did not contain a specific mountain top provision. In introducing an amendment to provide such a provision, Senator Jackson summarized the proposed amendment that, with some changes along the way, ultimately became SMCRA § 515(c) (formerly § 213(c)):

\begin{quote}
Mr. President, with regard to surface mining operations on steep slopes, S. 425, as reported, requires backfilling of the mined area to approximate original contour, and prohibits disposition of spoil from surface mining operations on the natural downslope from the operation.

As expressed in the committee report, the intent of the committee was not to preclude such reclamation options as the creation of reservoirs and creation of usable flat land by mountain top mining. However, there was some ambiguity in the bill as written with regard to this latter need.

There is no doubt that in certain mountainous areas of Appalachia, creation of plateaus on formerly peaked mountain tops creates usable flat land away from the flood plain. Responsible surface mining operators have demonstrated that such mountain top mining operations can be carried out in a self-contained area with little damage to the surrounding environment. In order to clearly permit the beneficial creation of level or gently rolling land in an environmentally acceptable manner, section 213(c) was drafted as a clarifying amendment to S. 425.
\end{quote}
variance from the requirement.\textsuperscript{171} Finally, although not expressly involving the approximate original contour requirement, SMCRA contains a provision that deals expressly with surface mining on steep slopes.\textsuperscript{172} All of these provisions, except the one for insufficient overburden, recognize that there will be excess spoil to dispose of.\textsuperscript{173} Both the standard and the situations where the standard need not be met contain specific references to water.

There has been disagreement over what restoring to approximate original contour entails.\textsuperscript{174} Congress changed the definition over SMCRA's gestation process.\textsuperscript{175} In SMCRA as enacted, Congress defines approximate original contour to mean

Section 213 is carefully limited to require planning, advance review, and approval by the regulatory agency, a circumscribed variance procedure rather than a general rule, specific standards in addition to those required by the act, and other appropriate safeguards.

The amendment, which does permit variances from certain reclamation standards, is not intended to provide a loophole, and does not permit the casting of spoil on any natural downslope, or to allow the retention of highwalls. The amendment prescribes prudent restrictions on the granting of such variances, to make the granting of such variances the exception rather than the rule.


\textsuperscript{171} 30 U.S.C. § 1265(e); see infra text accompanying notes 194-201.

\textsuperscript{172} 30 U.S.C. § 1265(d) (providing standards “in addition to” those in the rest of § 515(b), but recognizing that “excess spoil” may exist).

\textsuperscript{173} The mountain top provision, the variance provision, and the steep slope provision all provide that the excess spoil is to be disposed of in compliance with SMCRA § 515(b)(22). \textit{Id.} § 1265(b)(22); see id. §§ 1265(c)(4)(E), 1265(d)(1), 1265(e)(4). The volumetric expansion provision does not similarly state that excess spoil is to be disposed of pursuant to SMCRA § 515 (b)(22). \textit{See supra} text accompanying notes 144-47. Instead, the volumetric expansion provision appears to contemplate disposal on the mine site. In the three situations noted first above, there is excess spoil because the mine site is unsuitable for its disposal, and therefore it cannot be disposed of there but must be disposed of off-site. Thus, SMCRA § 515 (b)(22) applies to off-site, not on-site, disposal of excess spoil.

\textsuperscript{174} In \textit{Bragg v. Robertson}, 54 F. Supp. 2d 635 (S.D. W. Va. 1999), where defendants did not have an exception or variance as to approximate original contour, the requirement had to be met. \textit{Id.} at 646-47. West Virginia apparently argued that the decision as to whether it had been met was totally within the state’s discretion. \textit{Id.} at 647. The court disagreed, stating there is some law there to apply. \textit{Id.} A straight-line landscape likely would not qualify. Furthermore, it was not clear to the court what law, if any, West Virginia had applied, with the court concluding on this issue: “These questions are so complex and difficult that they are ‘fair ground for litigation and thus for more deliberate investigation.’” \textit{Id.} at 649; see also III. S. Project, Inc. v. Hodel, 844 F.2d 1286, 1292-93 (7th Cir. 1988).

\textsuperscript{175} Originally, Senate Bill 425, Surface Mining Reclamation Act of 1973, defined “backfilling to approximate original contour” as

that part of the reclamation process achieved by grading from a point at or above the top of the highwall to a point at or below the toe of the spoil bank in which the maximum slope shall not exceed the original average slope from the
that surface configuration achieved by backfilling and grading of the mined area so that the reclaimed area, including any terracing or access roads, closely resembles the general surface configuration of the land prior to mining and blends into and complements the drainage pattern of the surrounding terrain, with all highwalls and spoil piles eliminated; water impoundments may be permitted where the regulatory authority determines that they are in compliance with section 515(b)(8) of this Act.\textsuperscript{176}

Thus, the definition contains two specific references to water: configuring the reclaimed area to blend into and complement the drainage pattern of the surrounding terrain and allowing water impoundments where the regulatory authority determines that they comply with standards set in SMCRA.

When applicable, the mountain top exception allows "removing all of the overburden and creating a level plateau or a gently rolling contour with no highwalls remaining, and capable of supporting postmining uses in accord with the requirements of this subsection."\textsuperscript{177} The exception relates only to returning overburden and meeting the approximate original contour requirement; otherwise the new post mining uses must meet "all other requirements of this Act."\textsuperscript{178}

horizontal by more than five degrees, and no depressions capable of collecting water shall be permitted except where the retention of water is determined by the regulatory authority to be required or desirable for reclamation purposes.


Senator McClure of Idaho complained about the lack of flexibility in this definition and offered an amendment, which he said "is intended to replace a somewhat rigid formula in the bill." 119 CONG. REC. at 33,316. His amendment defined the term as

that surface configuration achieved by backfilling and grading of the mined area so that it closely resembles the surface configuration of the land prior to mining and blends into and complements the drainage pattern of the surrounding terrain, with all highwalls, spoil piles, and depressions eliminated except that water impoundments may be permitted where the regulatory authority determines that they are necessary or desirable for reclamation or public recreation purposes.

\textit{Id.} This amendment was adopted and turned out to be very close to the definition as enacted in 1977. \textit{Cf.} 30 U.S.C. § 1291(2) (2000), quoted \textit{infra} text accompanying note 176.

\textsuperscript{176} 30 U.S.C. § 1291(2). As to water impoundments, see \textit{supra} text accompanying note 162.

\textsuperscript{177} 30 U.S.C. § 1265(c)(2).

\textsuperscript{178} \textit{Id.} § 1265(c)(3)(E).
To qualify for the mountain top exception the mining permit applicant must meet two sets of criteria.\textsuperscript{179} Basically, the first set of criteria is to assure that a viable postmining land use exists.\textsuperscript{180} The second set of criteria specifies environmental conditions\textsuperscript{181} that must be met; these criteria include two specific provisions on water. The first water provision requires that the resulting plateau or contour must drain "inward from the outslopes except at specified points."\textsuperscript{182} The second water provision requires that "no damage will be done to natural watercourses."\textsuperscript{183} Finally, the second set of criteria also provides that any excess spoil that is not kept on the mountaintop is to be "placed in accordance with the provisions of subsection (b)(22) of this section."\textsuperscript{184}

The environmental standard in SMCRA section 515(b)(22) for disposing of excess spoil is concerned with two major problems, stability and sedimentation,\textsuperscript{185} and contains eight specific criteria to deal with them. Three of the eight criteria are water-specific, and all three relate to drainage. First, there must be "surface and internal drainage systems and diversion ditches . . . to prevent spoil erosion and movement."\textsuperscript{186} Second, the "disposal area" must not "contain springs, natural water courses or wet weather seeps unless lateral drains are constructed from the wet areas to the main underdrains in such a manner that filtration of the water into the spoil pile will be prevented."\textsuperscript{187} Third, the final configuration of the disposal site has to be "compatible with the natural drainage pattern."\textsuperscript{188}

Some questions have been raised whether natural watercourses, which cannot be damaged in the mountain top mining process can be damaged in the disposal of excess spoil from the mountain top mining, particularly because of the reference to "natural water courses" in the disposal criteria.\textsuperscript{189} Several fac-

\textsuperscript{179} Id. §§ 1265(c)(3), 1265(c)(4); see id. § 1265(c)(2).
\textsuperscript{180} Id. § 1265(c)(3).
\textsuperscript{181} Id. § 1265(c)(4).
\textsuperscript{182} Id. § 1265(c)(4)(C).
\textsuperscript{183} Id. § 1265(c)(4)(D).
\textsuperscript{184} Id. § 1265(c)(4)(E). For definition of spoil, see supra note 66, and for discussion of excess spoil in a different context, see supra text accompanying notes 144-47.
\textsuperscript{185} 30 U.S.C. § 1265(b)(22).
\textsuperscript{186} Id. § 1265(b)(22)(C).
\textsuperscript{187} Id. § 1265(b)(22)(D).
\textsuperscript{188} Id. § 1265(b)(22)(G).
\textsuperscript{189} See supra text accompanying note 187. For the original, see Amendment No. 613, § 213(c)(5)(A)-(E), reprinted in 119 CONG. REC. 33,145, 33,146 (1973), as introduced by Senator Jackson, modified and renumbered as § 213(c)(4)(A)-(E). See 119 CONG. REC. at 33,308. The amendment was agreed to at id. at 33,316.
tors militate against such a conclusion. First, the focal point of concern by Congress in the standard containing the reference to natural water courses is on avoiding "filtration of water into the spoil pile" to in turn prevent instability and erosion. In other words, this is not a permissive standard designed to relax other standards and allow destruction of particular water resources; it is a protective standard designed to prevent instability and erosion. Second, section 515(b)(22) itself provides that spoil is to be placed so that "all other provisions of this Act are met." Third, the standard does not state that watercourses can be filled. It only speaks to the listed waters being in the disposal area. Any time any water source is nearby, whether being filled or not, there is and should be concern for the stability and possible erosion of the spoil.

In addition to the mountain top exception to the approximate original contour requirement, SMCRA contains a provision for granting a variance from the approximate original contour requirement. While the variance provision does not contain a "no damage" to watercourses clause like that in the mountain top provision, variances are limited to seeking improved watershed control. Thus, the expectation is that whatever action is taken under the variance, the watershed of which the watercourse is a part will be improved rather than damaged. Furthermore, a variance can be granted only if, as a part of the application process, it has been knowingly requested in writing by the surface owner.

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190 See supra text accompanying note 185.
192 See supra text accompanying note 187.
193 Congress expressly repeated its concern. See supra text accompanying notes 31, 108, 147, 184, 186; see also supra notes 57, 64, 98, 142, 161.
194 30 U.S.C. § 1265(e). Unlike the mountain top provision, which was added to SMCRA from the floor of the Senate in 1973, the variance provision was added from the floor of the Senate in 1977. 123 CONG. REC. at 15,705 (introduction of language); id. at 15,711 (approval of provision). The provision was sponsored by Senator Ford of Kentucky. Id. at 15,705. As with the mountain top exception, the sponsor contemplated this be, as the name suggests, a variance from the norm and not to become the norm. See supra note 170.
195 See 30 U.S.C. § 1265(e)(1) ("provided that the watershed control of the area is improved"); id. § 1265(e)(3)(C) ("the watershed of the affected land is deemed to be improved").
196 The mountain top exception is requested by the mining permit applicant. Id. § 1265(c)(2). The owner of the surface has to request the variance. Id. § 1265(e)(2).
The request must be to make the land "suitable for an industrial, commercial, residential, or public use (including recreational facilities) in accord with the further provisions of (3) and (4) of this subsection." Subsection (3) includes requirements that the potential use is deemed to constitute an "equal or better economic or public use" and again that "the watershed of the affected land is deemed to be improved." Subsection (4) relates to spoil disposal. As with the mountain top exception, excess spoil must be disposed of in conformity with section 515(b)(22). Finally, "drainage" necessary for the intended use must be provided.

The net result of the water provisions set out in SMCRA in relation to the approximate original contour standard is that although Congress has allowed variations from the standard, Congress has not allowed variations from the water resource standards. The water provisions within those exceptions to the approximate original contour do not provide for any relaxation of the water standards contained elsewhere in SMCRA. Indeed Congress sought to reinforce those standards in the provisions creating the exceptions. Deviation from the approximate original contour requirement creates excess spoil, and excess spoil is to be disposed of in conformity to the rest of SMCRA, including the water provisions.

4. Water Resource Information

How well any of the water-specific environmental standards or other water-related obligations that Congress specified in SMCRA can be met depends to a large extent on what is known about the water resource in the area that is going to be mined. Questions that need to be answered include, first, whether there are any water sources that will be affected by the mining, second, if so, how seriously will they be affected and third whether any of the impact can be prevented. Four sections of SMCRA contain specific requirements for providing information about the water resource during the mining permit application process.

197 Id. § 1265(e)(2).
198 Id. § 1265(e)(3)(A), (C). For a discussion of watershed improvement in the context of mining in West Virginia, see Blair M. Gardner, Reconciling Surface Mining and the CWA: Section 404(b)(1) and Mitigation, 17 NAT. RESOURCES & ENVTL. L. 146, 181 (2003).
200 Id. For discussion of SMCRA § 515(b)(22), see supra text accompanying notes 185-88.
202 See West Virginia Highlands Conservancy v. Norton, 238 F. Supp. 2d 761, 767-70 (S.D. W. Va. 2003), discussing future water treatment cost estimates as they relate to the adequacy of a state's bonding program under SMCRA. Much of this discussion centers around the "inaccuracies and gaps in the data currently available." Id. at 769.
203 30 U.S.C. §§ 1257(b)(10)-(12), (14), 1258(a)(5), (9)-(10), (13), 1260(b)(3), (5), 1260(c)
First, the section setting forth the contents of the application for a mining permit specifies that the application contain: (1) watershed designation and drainage discharge locations; (2) determination of probable hydrologic consequences of the mining; (3) climate data, including precipitation, and (4) mapping that includes locations of water.

Second, under the permit application process, a reclamation plan has to be prepared and submitted. The requirements for the reclamation plan set

(2000).

Id. § 1257.

Id. § 1257(b)(10) (requiring "the name of the watershed and location of the surface stream or tributary into which surface and pit drainage will be discharged.").

Id. § 1257(b)(11) (requiring "a determination of the probable hydrologic consequences of the mining and reclamation operations, both on and off the mine site, with respect to the hydrologic regime, quantity and quality of water in surface and ground water systems including the dissolved and suspended solids under seasonal flow conditions and the collection of sufficient data for the mine site and surrounding areas so that an assessment can be made by the regulatory authority of the probable cumulative impacts of all anticipated mining in the area upon the hydrology of the area and particularly upon water availability").

While this provision contains a qualification that the determination of the probable cumulative impacts is not required "until such time as hydrologic information on the general area prior to mining is made available from an appropriate Federal or State agency," it also provides that no permit is to "be approved until such information is available and is incorporated into the application." Id.


30 U.S.C. § 1257(b)(12) (requiring "when requested by the regulatory authority, the climatological factors that are peculiar to the locality of the land to be affected, including the average seasonal precipitation, the average direction and velocity of prevailing winds, and the seasonal temperature ranges").

Id. § 1257(b)(14) (requiring "cross-section maps or plans of the land to be affected including the actual area to be mined, . . . showing pertinent elevation and location of test borings or core samplings and depicting the following information: . . . the location of subsurface water, if encountered, and its quality; . . . the location of aquifers; the estimated elevation of the water table; . . . the location of all impoundments for waste or erosion control; any settling or water treatment facility; constructed or natural drainways and the location of any discharges to any surface body of water on the area of land to be affected or adjacent thereto").

A mining permit cannot be granted without an approved reclamation plan. See id. § 1260(b)(2).
forth in SMCRA contain four provisions that specifically refer to water,\textsuperscript{211} plus one on climate.\textsuperscript{212} The reclamation plan must include a statement of: (1) an engineering plan for controlling surface water drainage and water accumulation;\textsuperscript{213} (2) steps to comply with water quality laws;\textsuperscript{214} (3) the location of subsurface water;\textsuperscript{215} and (4) measures to protect water quality, water rights, and water quantity.\textsuperscript{216} In addition, water treatment agencies and water companies in the locality are to receive notice of the intent to mine and of where the mining and reclamation plan is available and are to be given an opportunity to comment.\textsuperscript{217}

Third, under the permit application process, the criteria for approval or denial of the application\textsuperscript{218} contains three provisions specifically referring to water. They relate to: (1) hydrologic balance, (2) alluvial valley floors, and (3) violation of environmental laws.\textsuperscript{219} First, the application has to affirmatively demonstrate and the regulatory authority has to make specific findings in writing that it has made the required assessment\textsuperscript{220} of "the probable cumulative impact of all anticipated mining in the area on the hydrologic balance" and that the proposed mining operation is designed "to prevent material damage to hydrologic balance outside [of the] permit area."\textsuperscript{221} Second, specific findings also have to be made that the mining operation will protect certain alluvial valley floors for agriculture.\textsuperscript{222} However, the alluvial valley floor provision applies

\textsuperscript{210} \textit{Id.} § 1258.

\textsuperscript{211} \textit{Id.} § 1258(a)(5), (9), (12)-(13).

\textsuperscript{212} The climate provision is found at SMCRA § 508(a)(10). \textit{Id.} § 1258(a)(10).

\textsuperscript{213} \textit{Id.} § 1258(a)(5) (requiring inclusion of "the engineering techniques proposed to be used in mining and reclamation and a description of the major equipment; a plan for the control of surface water drainage and of water accumulation").

\textsuperscript{214} \textit{Id.} § 1258(a)(9) (requiring inclusion of "the steps to be taken to comply with applicable . . . water quality laws and regulations").

\textsuperscript{215} \textit{Id.} § 1258(a)(12) (requiring "the results of test boring . . . or other equivalent information and data . . . including the location of subsurface water").

\textsuperscript{216} \textit{Id.} § 1258(a)(13) (requiring "a detailed description of the measures to be taken during the mining and reclamation process to assure the protection of: (A) the quality of surface and ground water systems, both on- and off-site, from adverse effects of the mining and reclamation process; (B) the rights of present users to such water; and (C) the quantity of surface and ground water systems, both on- and off-site, from adverse effects of the mining and reclamation process or to provide alternative sources of water where such protection of quantity cannot be assured").

\textsuperscript{217} See \textit{id.} § 1263(a).

\textsuperscript{218} \textit{Id.} § 1260.

\textsuperscript{219} \textit{Id.} §§ 1260(b)(3), (5), 1260(c).

\textsuperscript{220} The assessment is specified in SMCRA § 507(b)(11). \textit{Id.} § 1257(b)(11); see supra note 206.

\textsuperscript{221} 30 U.S.C. § 1260(b)(3).

\textsuperscript{222} See \textit{id.} § 1260(b)(5). Alluvial valley floors are defined as "the unconsolidated stream laid
only to the western United States and thus does not affect the Appalachian region.\textsuperscript{223} Third, the applicant must disclose

any and all notices of violations of this Act and any law, rule, or regulation of the United States, or of any department or agency in the United States pertaining to air or water environmental protection incurred by the applicant in connection with any surface coal mining operation during the three-year period prior to the date of application.\textsuperscript{224}

If such a violation exists, a permit cannot be issued until the applicant provides proof that any such violation is being, or has been, corrected.\textsuperscript{225}

Finally, during the application process, the regulatory authority also determines the amount of the bond that the mining operation will have to post.\textsuperscript{226} SMCRA requires that the amount depend at least in part on the "probable difficulty of reclamation" for which "hydrology" is one of the factors to be considered.\textsuperscript{227}

These provisions on water-related data require the mining applicant to present three types of data. First the mining permit applicant provides basic data about the location of water in the mining operation area. Second, the applicant presents data about the probable impacts on that water from the mining operation. Finally, the applicant presents data about how the mining operation will meet or comply with the water-related standards discussed earlier in this Article.\textsuperscript{228} While these provisions do not create any new standards, the totality of the data produced should give the regulatory authority the basis for deciding whether or not the proposed mining operation is geared up to meet the standards that have been created by SMCRA and other relevant environmental statutes. Furthermore, the provisions require the regulatory authority to focus on certain water issues by having to make specific written findings about them.

\begin{itemize}
\item \textsuperscript{223} Id. § 1291(1).
\item \textsuperscript{224} Id. § 1256.
\item \textsuperscript{225} Id. § 1256(c).
\item \textsuperscript{226} Id. § 1260(b)(5) (specifying "west of the one hundredth meridian west longitude").
\item \textsuperscript{227} Id. § 1256(d)(2) allows expansion of the area for alluvial valley floor mines that had a "valid permit" without the restriction. Id. § 1256.
\item \textsuperscript{228} See supra Part IV.C.1-2.
5. Enforcement

In addition to the availability of data, the success of the environmental standards may also depend on enforcement. The last two provisions discussed above in subpart 4, on reporting violations and on bond amount, do also have important enforcement roles. Four additional enforcement-related provisions in SMCRA contain specific reference to water. 229

First, protection of the water resource can be the basis for a Secretarial cessation order under SMCRA. When “any condition or practices exist, or any permittee is in violation of any requirement of ... [SMCRA], which condition, practice, or violation ... is causing, or can reasonably be expected to cause significant, imminent environmental harm to ... water resources,” the Secretary of the Interior or an authorized representative must immediately order a cessation. 230 If the Secretary finds that the cessation will not result in a complete abatement of the harm, the Secretary must additionally “impose affirmative obligations on the operator requiring” whatever actions the Secretary believes is necessary to abate the harm. 231 However, if there is no imminent threat, the Secretary is to fix a reasonable time for abatement. 232

This provision goes beyond the SMCRA environmental standards discussed earlier. 233 It calls for action of the Secretary not only in response to a violation of SMCRA but whenever the operation is engaging in any practices, or allowing any condition to exist, that could cause the designated harm to water resources. Thus the provision clearly reinforces the role of SMCRA as an environmental statute.

Second, the Secretary may not grant temporary relief from notices and orders, including the foregoing cessation order, if the granting of relief will “adversely affect the health or safety of the public or cause significant, imminent environmental harm to land, air, or water resources.” 234 In prohibiting relief,

229 30 U.S.C. §§ 1267(b), 1269(a), (b), (c)(1)-(2), 1271(a)(2), 1275(c)(3), 1276(c) (2000).

230 Id. § 1271(a)(2). For the colloquy between Senators Baker and Jackson as to when the Secretary might intervene, see Beck, supra note 59, at 688. See also Beck, supra note 59, at 685-89 (discussing SMCRA § 521(a)(2)). As to when there is no threat of significant imminent harm, see SMCRA § 521(a)(3), 30 U.S.C. § 1271(a)(3).


232 Id. § 1271(a)(3).

233 See supra Part IV.C.1-2.

234 30 U.S.C. § 1275(c)(3) (2000). Other provisions in SMCRA provide similarly that regulators may provide temporary relief when a hearing is requested after the final decision on a permit application, and courts in reviewing orders or decisions of the Secretary may grant temporary relief pending final determination if “such relief will not adversely affect the public health or safety or cause significant imminent environmental harm to land, air, or water resources.” Id. § 1264(d)(3), 1276(c)(3).
this provision serves as the counterpart of the provision just discussed which requires the Secretary to act in the imminent environmental harm situation.

Third, the section on inspections and monitoring\(^{235}\) provides that where surface coal mining and reclamation operations "remove or disturb strata that serve as aquifers" that "significantly insure the hydrologic balance of water use either on or off the mining site," the regulatory authority is to specify monitoring sites.\(^{236}\) Sites are to be designated for recording three types of data. First, they are to record "the quantity and quality of surface drainage above and below the minesite as well as in the potential zone of influence."\(^{237}\) Second, they are to record the "level, amount, and samples of ground water and aquifers potentially affected by the mining and also directly below the lowermost (deepest) coal seam to be mined."\(^{238}\) Third, they are to record "precipitation."\(^{239}\) In addition, the Regulatory Authority is to specify any "records of well logs and borehole data" that are to be kept.\(^{240}\)

The inspections and monitoring provisions support the environmental standards in providing additional data both for current and future use in the regulatory process. Particularly important is the support that is provided for the hydrologic balance provision, perhaps the most important one relating to water in SMCRA.

Fourth, the section on release of bonds or deposits\(^{241}\) contains several water-specific provisions. First, letters notifying of the intention to seek bond release must be sent to "sewage and water treatment authorities" and "water companies in the locality."\(^{242}\) Second, the regulatory authority is to inspect and evaluate the reclamation work.\(^{243}\) The evaluation is to consider whether there is any pollution of surface and subsurface water occurring, what the probability of future occurrences of such pollution is, and what the estimated cost of abating such pollution would be.\(^{244}\)

\(^{235}\) See id. § 1267.

\(^{236}\) Id. § 1267(b)(2).

\(^{237}\) Id. § 1267(b)(2)(A).

\(^{238}\) Id. § 1267(b)(2)(B).

\(^{239}\) Id. § 1267(b)(2)(B).

\(^{240}\) Id. § 1267(b)(2)(D).

\(^{241}\) Id. § 1267(b)(2)(C).

\(^{242}\) Id. § 1269.

\(^{243}\) Id. § 1269(a).

\(^{244}\) Id. § 1269(b).

\(^{244}\) Id. For a discussion of the future water treatment cost estimates as they relate to the adequacy of a state’s bonding program, see West Virginia Highlands Conservancy v. Norton, 238 F. Supp. 2d 761, 767-70 (S.D. W. Va. 2003). West Virginia had been required to “ensure that sufficient money will be available to complete reclamation, including the treatment of polluted water, at all existing and future bond forfeiture sites.” Id. at 772 (citing 30 C.F.R. § 948.16(III)).
Finally, the section provides a schedule for allowing bond release.\textsuperscript{245} Sixty percent is released upon completing the listed items that include "drainage control . . . in accordance with the reclamation plan."\textsuperscript{246} An additional amount can be released after revegetation is established but not "so long as the lands to which the release would be applicable are contributing suspended solids to streamflow or runoff outside the permit area in excess of the requirements set by section 515(b)(10)."\textsuperscript{247} Furthermore, "where a silt dam is to be retained as a permanent impoundment" under SMCRA § 515(b)(8),\textsuperscript{248} this additional amount may be released only if "provisions for sound future maintenance by the operator or the landowner have been made with the regulatory authority."\textsuperscript{249}

Bonds are required both to pressure the operator to carry through with all of the statutory duties and to accomplish reclamation if the operator defaults somewhere in the process and fails to carry through. The bonding provisions are of assistance only to the extent that the bond amount is significant and adequate to the reclamation task in case of default.

6. Protecting and Replacing Water Rights and Water Supply

SMCRA, as enacted in 1977, contains a section on "water rights and replacement."\textsuperscript{250} That section provides, first, that "[n]othing in . . . [SMCRA] shall be construed as affecting in any way the right of any person to enforce or protect, under applicable law, his interest in water resources affected by a surface coal mining operation."\textsuperscript{251} That section provides, second, that the operator of "a surface coal mine" must:

\textsuperscript{245} 30 U.S.C. § 1269(c).
\textsuperscript{246} Id. § 1269(c)(1).
\textsuperscript{247} Id. § 1269(c)(2). As to SMCRA § 515(b)(10), id. § 1265(b)(10), see supra text accompanying notes 154-56.
\textsuperscript{248} As to SMCRA § 515(b)(8), 30 U.S.C. § 1265(b)(8), see supra text accompanying note 162.
\textsuperscript{249} 30 U.S.C. § 1269(c)(2).
\textsuperscript{250} Id. § 1307. Congressman Evans of Colorado proposed language in 1975 on the floor of the House that was adopted. 121 CONG. REC. 7065 (1975). However, the Conference Committee rejected the language because of a concern for respecting state water rights law. "The House bill contains certain procedural mechanisms for the protection of water rights. The conferees rejected this language as it could possibly interfere with or modify well developed State law on the subject of water rights and was viewed as unnecessary." 121 CONG. REC. at 13,370.
\textsuperscript{251} 30 U.S.C. § 1307(a). How SMCRA may alter pre-SMCRA legal rights in relation to water is illustrated by two Indiana cases. In Wiggins v. Brazil Coal & Clay Corp., 452 N.E.2d 958 (Ind. 1983), the defendant dug a pit in preparation for strip mining coal. Id. at 962. Because defendant's pit was lower in elevation than the former strip pit on the neighboring land, the water in the neighboring pit drained into defendant's pit and was pumped away. Id. The Indiana Supreme Court affirmed the lower court decision that the strip mining activity was a reasonable use of the defendant's land and, as owner of all that was contained in the earth below its surface, the defendant could not be held accountable for the plaintiff's loss. Id. at 964. The court noted the factor that the strip mine pit that drained was not constructed for the purpose of holding water, suggest-
replace the water supply of an owner of interest in real property who obtains all or part of his supply of water for domestic, agricultural, industrial, or other legitimate use from an underground or surface source where such supply has been affected by contamination, diminution, or interruption proximately resulting from such surface coal mine operation.252

The first provision quoted above appears to say that if a person's state recognized legal interest in water has been affected by the mining operation, that

However, in a 1994 case applying the Indiana Surface Mine Control and Reclamation Act (I-SMCRA) to interference with groundwater, Natural Resources Commission v. Amax Coal Co., 638 N.E.2d 418 (Ind. 1994), the Indiana Supreme Court made it clear that "[w]hen this Court decided Wiggins, the I-SMCRA regulations specifically did not apply. The cause of action in Wiggins arose in 1977, but Indiana did not attain control over strip coal mining regulation until July 29, 1982." Id. at 428. In Amax, the court, although by a 3 to 2 vote, upheld the regulatory action taken by the Indiana Department of Natural Resources (DNR) in two fact situations involving efforts or would-be efforts by mine operators to keep surface coal mines free of groundwater. Id. at 430-31.

In one of the situations, DNR attached a condition to a coal mine permit application limiting interference. Id. at 420-21. Groundwater under hydrostatic pressure seeped upwards into the mine through cracks caused by the mining. Id. at 420. The mine operator sought approval of using dewatering wells; the neighbor was concerned that dewatering would cause subsidence of the neighbor's land. Id. at 420-21. DNR attached a condition prohibiting the use of dewatering wells until additional surveys and additional information were provided as to the possible surface subsidence effects of the wells and required a monitoring plan and a monitoring well. Id. at 421.

The other situation also involved a plan to pump surface water and groundwater out of surface mining pits, but in this case DNR had issued a permit, claiming it had no authority to regulate groundwater. Id. Later, DNR sent a Director's Order to the mine operator requiring that the operator either obtain permission to lower lakes on neighboring lands or demonstrate that the mining operation would not cause damage through lowering those off-site lakes. Id. at 422. Without one or the other, DNR would find noncompliance. Id.

The Indiana Supreme Court held that ownership rights in groundwater like rights in any other property were subject to regulation by the state through the exercise of the state's police power and that, in I-SMCRA, the state had regulated water in the context of coal mining and delegated authority to DNR to carry this regulation out. Id. at 430-31. In both fact situations, the court found that DNR was acting within this statutory authority. Id. The court concluded that the regulations did not go too far and constitute a taking of defendants' property. Id. It found, first, that the regulations were within the scope of the police power and, second, that the defendants' claims did not suggest that they were being denied all economically viable use of their property. Id. at 430.

252 30 U.S.C. § 1307(b). OSM's definition of "replacement of water supply" includes "an equivalent water delivery system and payment of operation and maintenance costs in excess of customary and reasonable delivery costs for premining water supplies." 30 C.F.R. § 701.5 (2003). The water supply owner can agree to accept a one-time payment representing the present worth of the increased costs. Id. A separate provision deals with the situation where the supply was not needed at the time of loss or for the postmining land use. Id.
person is saved any common-law or statutory remedies provided by the state law. However, OSM interpreted the provision to protect not only those affected by the mining operation but also those conducting the mining operation, and in National Wildlife Federation v. Hodel, the court upheld OSM’s interpretation. The regulation involved in National Wildlife Federation was issued under the second provision quoted above but made use of the first provision. It provided that a mine operator did not have to replace water supply where “a surface coal mine operator consumes or legitimately uses the water supply under a senior water right determined under applicable state law.” The “senior water right” terminology is consistent with the prior appropriation doctrine, but the court did not take any position on whether the interpretation is limited to that doctrine saying simply “§ 717(a) merely preserves for each party whatever rights state law allows.”

The 1988 National Wildlife Federation decision also upheld the Secretary’s interpretation that the second provision did not protect water users from disruption of their supply due to underground mining. The “surface coal mine

253 839 F.2d 694 (D.C. Cir. 1988).
254 Id. at 756-57.
255 Id. at 756 (quoting In re Permanent Surface Mining Regulation Litig., 620 F. Supp. 1519, 1525 (D.D.C. 1985) (citations omitted)).
256 See supra note 250.
258 Nat’l Wildlife Fed’n, 839 F.2d at 753-55. In Russell, the West Virginia Supreme Court of Appeals ruled that an owner of a right to water replacement under SMCRA § 717, 30 U.S.C. § 1307, could knowingly waive that right as specified in West Virginia’s counterpart statute, West Virginia Code § 22A-3-24(b). 389 S.E.2d at 194. SMCRA § 717, however, is silent as to waiver. See 30 U.S.C. § 1307 (2000). Because Congress expressly provided for waiver in one instance, the argument would be that waiver was not intended in this instance. Thus, Congress provided in SMCRA § 522(e)(5) that only existing surface mining operations can come within three hundred feet of an occupied dwelling “unless waived by the owner thereof.” 30 U.S.C. § 1272(e)(5) (2000). OSM had required West Virginia to clarify the waiver by August 1, 1996, so it applied consistently with OSM’s definition of replacement in 30 C.F.R. § 701.5. See 30 C.F.R. § 948.16 (sss) (2001) (superseded); West Virginia Regulatory Program, 61 Fed. Reg. 6511, 6536 (Feb. 21, 1996) (to be codified at 30 C.F.R. pt. 948).

In 2002, the OSM requirement was removed on the basis that Canestraro v. Faerber, 374 S.E.2d 319 (W. Va. 1988), required West Virginia law to be interpreted consistent with SMCRA and that was good enough. West Virginia Regulatory Program, 67 Fed. Reg. 21,904, 21,912 (May 1, 2002) (to be codified at 30 C.F.R. pt. 948); see 30 C.F.R. § 948.16 (2002) (superseded). In West Virginia Highlands Conservancy v. Norton, 238 F. Supp. 2d 761 (S.D. W. Va. 2003), the court held that OSM could not simply rely on West Virginia court decisions to the effect that inconsistent West Virginia statutory provisions must be read in a way to make them consistent with federal law. Id. at 776-78; see also West Virginia Regulatory Program, 68 Fed. Reg. 10,178, 10,179 (Mar. 4, 2003) (to be codified at 30 C.F.R. pt. 948). So, in 2003, the requirement was back in the OSM regulation but with a May 5, 2005, deadline. 30 C.F.R. § 948.16(sss) (2003). But see West Virginia Regulatory Program, 68 Fed. Reg. 40,157, 40,167 (to be codified at 30 C.F.R. pt. 948) (changing the date in 30 C.F.R. § 948.16 to September 5, 2003)).
operation” language is broad enough to cover surface effects of underground mining. However, the supply replacement provision stated that “a surface coal mine” was liable, and, according to the court, “surface coal mines” refers to mines using a surface mining method and does not include mines using an underground mining method. In 1992, Congress amended SMCRA to include a water replacement provision where underground mining was at fault. However, the 1992 underground mining replacement provision is more limited in scope than the surface mining replacement provision in two respects. First, while the surface mining replacement provision protects any “legitimate use” of water, the underground mining replacement provision protects only a “drinking, domestic, or residential water supply.” Thus, for example, an industrial water supply is not included. Second, while the surface mining replacement provision protects “an underground or surface source,” the underground mining replacement provision protects the water only if it is “from a well or a spring.” Thus, the only surface source that would be protected would be a spring.

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259 See supra text accompanying notes 71-73.


261 Energy Policy Act of 1992, Pub. L. No. 102-486, § 2504(a)(1), 106 Stat. 2776, 3104 (codified at 30 U.S.C. § 1309a(a)(2) (2000)). In Krug v. Ohio Department of Natural Resources, 654 N.E.2d 185 (Ohio Ct. App. 1995), plaintiffs alleged that in 1985 they lost their water supply when the coal operation breached an abandoned coal mine. Id. at 186. It is not clear from the opinion why they are unable to collect from the coal operator. Id. at 187. In this case, their suit against the state for negligent administration of the statute failed with dismissal being affirmed. Id. at 189. It is not clear from the opinion whether the operation was a surface mine or an underground mine. Had it been a surface mine, the operator had a duty to replace plaintiffs’ water supply but not if it was an underground mine. See supra text accompanying notes 258-60. Had events in the case occurred after the 1992 amendment, the plaintiffs would have been protected because their water came from a well. See infra text accompanying note 263.


263 Id. In Castle Valley Special Service District v. Utah Board of Oil, Gas & Mining, 938 P.2d 248 (Utah 1996), plaintiffs claimed that their existing underground water supply, a spring used for “culinary and irrigation purposes,” had been reduced in quantity and quality by defendant’s underground coal mining. Id. at 251. Utah had not enacted a statute similar to the 1992 amendment by Congress to SMCRA, which required replacement of water supply interfered with by underground coal mining operations. Id. at 252. The court noted that plaintiffs’ claim therefore would rest directly on the federal requirement rather than on a State requirement. Id. The plaintiffs failed because they did not prove that the mining operation had “affected” their supply “by contamination, diminution, or interruption resulting from” the coal operations. Id. at 251-52. The Board had accepted the defendants’ argument and evidence that the plaintiffs’ source of supply was not connected to the water in the areas being mined by the defendant. Id. at 253. The court also found that this provision did not serve to require mine operations to protect existing supplies; the provision merely provides for replacing supplies if they are interfered with. Id. at 252-53.
D. Lands Unsuitable for Mining

As already noted, in addition to providing that if land cannot be reclaimed, it is not to be mined, SMCRA declares certain specific categories of lands to be unsuitable for mining and provides criteria for determining additional lands to be unsuitable.\textsuperscript{264} Under this provision "renewable resource lands" can be designated unsuitable for mining when such lands would be affected by the mining operations and could see a "substantial loss or reduction of long-range productivity of water supply."\textsuperscript{265} Renewable resource lands "include aquifers and aquifer recharge areas."\textsuperscript{266} SMCRA does not contain a separate definition of the term "renewable resource lands" and OSM's definition adds only "and other underground waters."\textsuperscript{267} A second category of unsuitable lands, "natural hazard lands," exist where mining "could substantially endanger life and property," such as areas that are "subject to frequent flooding."\textsuperscript{268}

V. Fitting SMCRA's Water Provisions into the States' Water Law Regimes

As noted in Part IV, some of the water specific provisions in SMCRA simply reinforce other water provisions that establish standards of conduct for coal mining operations. In this Part, the focus is on the latter provisions and how they fit or do not fit into the state water law regimes in the eastern United States.\textsuperscript{269} Although state water law regimes have been alluded to and some characteristics noted already in this Article, at this point it is necessary to under-

\textsuperscript{264} See supra text accompanying notes 80-81; see also 30 U.S.C. § 1272(a)-(d) (2000). SMCRA also contains a provision for designating federal lands unsuitable for noncoal mining operations. See id. § 1281.


\textsuperscript{266} Id.; see Appolo Fuels, Inc. v. United States, 54 Fed. Cl. 717, 720 (2002) (involving a takings claim arising out of Kentucky and Tennessee and based on an unsuitability designation justified largely because of "the impact of surface coal mining operations in the petition area on [the] productivity of the Fern Lake water supply"); Buckeye Forest Council v. Div. of Mineral Res. Mgmt., No. 01BA18, 2002 WL 1371007 (Ohio Ct. App. 2002) (involving agency denial of an unsuitability petition that alleged, among other effects, an effect on water level because significant investments had been made).

\textsuperscript{267} 30 C.F.R. § 701.5 (2003).

\textsuperscript{268} 30 U.S.C. § 1272(a)(3)(D). "Natural hazard lands" is not defined further in SMCRA or by OSM.

\textsuperscript{269} The eastern United States is contrasted with the western United States because the East developed riparianism for surface waters, and the West developed prior appropriation for surface waters. See supra note 3. The Appalachian states lie entirely within the eastern zone and developed riparian rights based regimes. See supra notes 4, 6. For a description of the "property" regimes in water, see Dellapenna, supra note 3, § 6.01(b).
stand more fully what those regimes were like in the Appalachian region in 1977.

A. Introduction to the Appalachian States' Water Law Regimes

The common-law regimes generally and in the Appalachian region divide the water resource on or in the ground into three basic categories: surface waters, diffused surface waters, and groundwater. Whenever the phrase "surface waters" is used, rarely, if ever, does it mean every drop of water on the surface of the earth. The common-law regimes thus distinguish "surface waters" from "diffused surface waters." Diffused surface waters are waters, primarily from rain and melting snow, that diffuse over the surface of the ground. Both surface waters and diffused surface waters, however, are on the surface of the ground and are distinguished in turn from "groundwater" which is water located in the ground.

Generally, surface waters were used first, and riparianism developed in the context of the surface waters category, particularly surface "rivers," "streams," or "watercourses." Diffused surface waters were viewed generally as not useable where located on the land but instead as interfering with the use

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270 A fourth category, atmospheric waters, is disregarded for purposes of this Article. See Robert E. Beck, Augmenting the Available Water Supply, in 1 WATERS AND WATER RIGHTS, supra note 3, § 3.04(d). In addition to the distinction between East and West noted supra note 269, the West may treat fewer waters as diffused than the East because of the relative scarcity of water in the West. See Joseph W. Dellapenna, Related Systems of Water Rights, in 2 WATERS AND WATER RIGHTS § 10.03(a), at 10-36 (Robert E. Beck ed., 1991 ed., repl. vol. 2001) (text accompanying note 250). Groundwater regimes vary across the country although none are prior appropriation in the East. See Dellapenna, supra note 8, ch. 19; Robert E. Beck et al., Introduction and Background, in 2 WATERS AND WATER RIGHTS, supra, §§ 11.04, 11.06(c) [hereinafter Beck et al., Introduction and Background].

271 The phrase appears often in SMCRA. See supra text accompanying notes 136,154-55; infra text accompanying note 447.

272 See Beck et al., Introduction and Background, supra note 270, §§ 11.06(a), 11.06(d); Beck, supra note 3, §§ 4.05(a), 4.05(b); Dellapenna, supra note 3, § 6.02; Dellapenna, supra note 270, § 10.03.

273 Dellapenna, supra note 270, § 10.03.

274 Beck et al., Introduction and Background, supra note 270, § 11.06(c); Dellapenna, supra note 3, § 4.05(c); Joseph W. Dellapenna, The Physical and Social Bases of Quantitative Groundwater Law, in 3 WATERS AND WATER RIGHTS, supra note 8, ch. 18.

275 Riparianism depends on being a riparian landowner, which means owning land that touches the water. See supra text accompanying notes 3-4.

276 The terminology varied. A different term, "littoral," was used in connection with lakes and ponds. See Dellapenna, supra note 3, § 6.02(b). However, because of the similarities in the law relating to watercourses and that relating to lakes, they have been merged for the most part and today riparianism generally also covers what used to be termed littoral. Id.
of the land. Terms such as "drainways" and "drainage channels" were used to identify conduits for disposal. Issues over groundwater were rarer than issues relating to water on the surface and were further complicated by lack of knowledge as to how groundwater behaved. Thus, when groundwater issues did arise, courts tended to solve those issues without looking underground and a different body of law developed for groundwater. There is some dispute, however, as to just how different that body of law was.

As indicated, differing bodies of law developed for each of the three categories of water that developed under the common-law regimes. First, as to surface waters, a riparian owner could make a reasonable use of the water taking into account that every other riparian owner had a similar right to make a reasonable use of the water. The definition of what constituted reasonable use

277 See Laur v. City of Milwaukee, 85 N.W.2d 349, 351 (Wis. 1957).
278 Id.
279 Peter N. Davis, Drainage, in 5 Waters and Water Rights, supra note 17, ch. 59; Dellapenna, supra note 270, § 10.03. Water law regimes have long distinguished between stream beds and drainways or drainage channels where diffused surface waters may flow. See, e.g., Borgmann v. Florissant Dev. Co., 515 S.W.2d 189, 195 (Mo. Ct. App. 1974) (stating that the plaintiffs "make the common mistake of confusing 'watercourse' with a 'natural surface water drainway'... Riparian rights attach to a watercourse... A natural surface water channel or drainway (too frequently referred to in the opinions as a watercourse) is, on the other hand, a drainway through which an upper landowner may discharge surface waters from his land because it is via this drainway that nature has provided for the flow of surface waters"); Rothweiler v. Clark County, 29 P.3d 758, 762 (Wash. Ct. App. 2001) (defining "drainway" as "that course, formed by nature, which water naturally and normally follows in draining from higher to lower lands"). As Borgmann demonstrates, there is some difficulty keeping the terminology straight. The court should have referred to "may discharge diffused surface waters from his land" and not "discharge surface waters." See Davis, Drainage, supra, § 59.02(b)(1), (5); Dellapenna, supra note 3, § 6.02(a); Dellapenna, supra note 270, §§ 10.03(a), 11.06(d).
280 See Dellapenna, supra note 8, § 19.02.
281 But where one could tell from surface indicators that an underground stream existed, the courts applied the same rules to the underground stream that they applied to a surface stream. See id. § 19.05(a).
283 Riparianism and prior appropriation applied to surface waters; drainage law applied to diffused surface waters; and absolute ownership, reasonable use, correlative rights, and prior appropriation applied to groundwater. Beck, supra note 3, § 4.05.
284 Many early cases suggest that a "natural flow" regime may have existed. If so, it has generally been rejected and certainly so by the time SMCRA was enacted in 1977. See Joseph W. Dellapenna, The Right to Consume Water Under "Pure" Riparian Rights, in 1 Waters and Water Rights, supra note 3, § 7.02(c). For Appalachian region cases, see Ulbricht v. Eufaula Water Co., 6 So. 78 (Ala. 1889); Brown v. Kistler, 42 A. 885 (Pa. 1899); Cox v. Howell, 65 S.W. 868 (Tenn. 1901); Va. Hot Springs Co. v. Hoover, 130 S.E. 408 (Va. 1925); Roberts v. Martin, 77
evolved and more or less culminated in the *Restatement (Second) of Torts* articulation of a balancing approach in 1977. The Restatement approach involved considering "the interests" of (1) the riparian making the use of the water, (2) any riparian proprietor harmed by that use, and (3) society as a whole.

Riparian rights reasonable use cases analyze pollution of the water as a use of the water referring to the water right as involving "quantity and quality." Riparian ownership gave the basic right to use the water; however, bed ownership was also relevant to the use of water. Bed ownership depended on navigability of the waters. If the waters were navigable, the state owned the bed, having acceded to ownership at the time of statehood under the equality doctrine.

If the waters were nonnavigable, the abutting landowners, as a general rule, owned the bed.

The state's ownership of the beds underlying navigable bodies of water was held in public trust for the people of the state and therefore its use by the state was limited. A riparian landowner's use of the state owned bed was generally limited to "wharfing out" in furtherance of a right to navigate. A riparian owner's use of the bed that the riparian owned under nonnavigable waters could be used in connection with making use of the water. It probably could even be filled as long as the filling did not interfere with rights of other riparians.

Early on, diffused surface waters were generally regulated under one of two rules. Under the common-law rule, the landowner could get rid of the water almost with impunity. Under the civil law rule, the landowner could not alter natural patterns without suffering the consequences if harm was caused to other

S.E. 535 (W. Va. 1913).


286 *Restatement (Second) of Torts* § 850A.


289 See Dellapenna, *supra* note 3, § 6.03(a).

290 Dunning, *supra* note 288, § 30.01(c); see Campbell Brown & Co. v. Elkins, 93 S.E.2d 248, 260 (W. Va. 1956).

291 Dellapenna, *supra* note 3, § 6.01(a)(7), at 6-51. On wharfing out, see *id.* § 6.01(a)(2).

292 *Id.* § 6.01(a)(7), at 6-58.

293 Davis, *supra* note 279, § 59.02(b)(2).
landowners. Generally, however, a landowner could not collect and cast the water onto neighboring land in greater quantity without responsibility for the damage. Today, many jurisdictions apply the reasonable use doctrine to diffused surface waters.

For groundwater, some jurisdictions developed an absolute dominion concept that allowed the surface owner to make whatever use of the land, or to withdraw any amount of water the surface owner could use, regardless of the consequences to the water resource even as it affected other users. Other courts began to look at whether the use being made of the groundwater was reasonable. Controversy exists over just what reasonable use means in the groundwater context. Some courts reason that reasonable use is determined in the abstract without comparing one landowner’s use of the water against another landowner’s use. Others argue that it means a comparison of landowner uses just as it does for surface waters.

These common-law rules were generally enforced through judicial action when someone believed that his or her water right had been interfered with. To the extent that beds under navigable waters were subject to the public trust, the state could enforce that against encroachment by private parties. There is an open question as to what extent private parties can prevent others from interfering with the public trust.

With differing consequences for each category, it is necessary to define each category in a way that hopefully makes ascertainment relatively easy without too much violence to reality. Hydrologists, and other scientists and engineers, argue that the foregoing three part categorization is erroneous to begin with because of the interconnection of all waters as represented by the hydro-

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294 Id. § 59.02(b)(3).
296 Davis, supra note 279, § 59.02(b)(4). For Appalachian region cases, see Whitman v. For- nay, 31 A.2d 630 (Md. 1943); Lucas v. Ford, 69 A.2d 114 (Pa. 1949); Morris Assocs. v. Priddy, 383 S.E.2d 770 (W. Va. 1989).
297 See Joseph W. Dellapenna, The Absolute Dominion Rule, in 3 WATERS AND WATER RIGHTS, supra note 8, ch. 20.
299 See Dellapenna, supra note 282, § 22.04(b).
300 Id.
301 See Dellapenna, supra note 284, § 7.03.
302 See id. § 7.05.
303 Id.
logic cycle. Water sources were not always easy to classify under the common law developed boundary lines, and today scientific realism is being reflected more and more in state water law. Two developing concepts reflect these efforts at scientific realism. The first concept is conjunctive management, where all water resources, or at least surface waters and groundwaters, or perhaps quantity and quality aspects of water, are managed conjunctively. The second concept is variously referred to as integrated management, ecosystem management, or watershed management, where water resources are managed together with other resources, particularly land use, in some more or less integrated manner. However, twenty-six to thirty-six years ago when SMCRA was being formulated and enacted, Congress and the states were still busy with their resource by resource, or problem by problem, approach. Clean air, clean water, toxic or hazardous substances, endangered species, wild and scenic rivers, and so on, were all treated separately rather than under an integrated ecosystem approach. Coal mining was also treated in this manner even though SMCRA contains some provisions that require looking at and planning for several resources together.

As to distinguishing surface waters from diffused surface waters, a hypothetical may help. Suppose that your backyard generally is lower than your neighbor’s backyard and when it rains, water generally flows into your yard from your neighbor’s yard, but the flow seems to concentrate at one particularly low point. Is the general flow diffused and the flow at the low point a watercourse? If you answer that at the low point it is still diffused surface water and not a watercourse, just what characteristics must exist to have a watercourse and thus to constitute surface waters? The common law focused on the presence or

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304 See Dellapenna, supra note 8, § 19.05(b)(1), at 19-45; Dellapenna, supra note 274, § 18.01, at 18-4 to -5. For description of the hydrologic cycle, see Robert E. Beck, The Water Resource Defined and Described, in 1 WATERS AND WATER RIGHTS, supra note 3, § 1.03, at 1-9 to -13.

305 See infra text accompanying notes 313-15. Indeed, when underground streams are ascertainable from surface indicia, the common law treats them the same as surface streams. See Dellapenna, supra note 8, § 19.05(a).

306 Dellapenna, supra note 274, § 18.03(a).

307 Id. § 18.03(b).

308 Beck, Introduction, Background, and Trends, supra note 17, § 52.06(d)(4).

309 Id.


311 See supra text accompanying notes 23-42.

312 See supra Part IV.C.2.

313 The Restatement (Second) of Torts uses “watercourses” and “lakes” in place of “surface water” and then uses “surface water” in place of “diffused surface water.” RESTATEMENT (SECOND) OF TORTS §§ 841, 842, 846 (1979).
absence of a channel or bed and banks, or a flow or current, and the permanence
or regularity of the source of supply, as relevant criteria.\textsuperscript{314} Based on these fac-
tors, the probability is that the low point would be termed a drainway or drain-
age channel\textsuperscript{315} and not a watercourse.

Turning next to distinguish groundwater from surface water or diffused
surface water, again a hypothetical may help. If you have a watercourse that is
flowing in a channel below ground level elevation as all watercourses likely are, where
is the boundary line between the surface water and the groundwater? Even in Arizona, the state that appears to draw the boundary of the watercourse the narrowest, the courts recognize that some water beyond what is actually in the clearly defined channel itself is surface water.\textsuperscript{316} Arizona calls that additional quantity "subflow" and recognizes that it includes groundwater within the "saturated floodplain Holocene alluvium."\textsuperscript{317} However, eastern states generally
appear to have been less concerned with groundwater and surface water bound-
ary issues.\textsuperscript{318} To the extent that courts developed the same reasonable use approach
to groundwater that they had developed for surface waters, it should not make any difference to the common-law regime. The regulated riparianism statutes being adopted in the East generally treat groundwater and surface water together.\textsuperscript{319}

\textbf{B. Categorization of Water in SMCRA and by OSM}

In SMCRA, Congress generally used terminology consistent with the
common-law distinctions between surface waters, diffused surface waters, and
groundwater.\textsuperscript{320} Although Congress did not define the borderlines between the
categories, OSM has defined the borderline between surface waters and diffused
surface waters,\textsuperscript{321} although it did not do so using the common-law distinc-

\begin{footnotes}
\textsuperscript{314} Beck et al., \textit{Introduction and Background}, supra note 270, \S 11.06(d)(1).
\textsuperscript{315} See supra text accompanying notes 313-15.
\textsuperscript{316} See, e.g., \textit{In re} the Gen. Adjudication of All Rights to Use Water in the Gila River Sys. &
Source, 9 P.3d 1069 (Ariz. 2000).
\textsuperscript{317} Id. at 1080.
\textsuperscript{318} See Dellapenna, supra note 8, \S 19.05.
\textsuperscript{319} Joseph W. Dellapenna, \textit{The Regulated Riparian Approach to Groundwater, in 3 Waters
and Water Rights}, supra note 8, \S 23.02, at 23-6 to -7. However, among the Appalachian re-
gions states, Georgia and Virginia have separate statutes for surface and ground waters. \textit{Id. See
generally} Dellapenna, supra note 4, ch. 9; Dellapenna, supra, ch. 23.
\textsuperscript{320} See infra Part V.C.
\textsuperscript{321} Groundwater, although treated different from the other categories in SMCRA, is not defined
in SMCRA. For OSM definitions of groundwater and aquifer, \textit{see infra} text accompanying notes
334-35. However, OSM does not otherwise define the borderline between groundwater and other
categories.
\end{footnotes}
Instead, OSM focused on the hydrologic concepts of perennial, intermittent, and ephemeral streams. Thus OSM treats all perennial streams as well as most intermittent streams as surface waters. That leaves ephemeral streams and some intermittent streams to be treated as diffused surface waters.

These OSM definitions appear to conform reasonably well to the common-law classifications, but, at the same time, facilitate classification of the sources. OSM’s explanations accompanying repromulgation of the buffer zone regulations in 1983 show OSM’s concern for ease in boundary ascertainment. A principal reason that OSM gave for changing the 1979 buffer zone regulations was that “much confusion” arose in trying to apply the 1979 regulations to specific areas. OSM defended its new approach as serving “to avoid problems of

322 See supra text accompanying notes 313-15.

323 “A stream which flows throughout the year, and from source to mouth,” or “[o]ne which flows continuously.” BUREAU OF MINES, U.S. DEP’T OF THE INTERIOR, A DICTIONARY OF MINING, MINERAL, AND RELATED TERMS 806 (Paul W. Thrush et al. eds., 1968); see also McGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS 1186 (Daniel N. Lapides ed., 2d ed. 1978) [hereinafter DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS]. OSM defines a perennial stream as “a stream or part of a stream that flows continuously during all of the calendar year as a result of ground-water discharge or surface runoff. The term does not include intermittent stream or ephemeral stream.” 30 C.F.R. § 701.5 (2003).

324 An intermittent stream is “[a] stream which flows part of the time, as after a rainstorm, during wet weather, or during part of the year,” or “[a] stream which flows only at certain times when it receives water from springs . . . or from some surface source . . . such as melting snow in mountainous areas.” BUREAU OF MINES, supra note 323, at 585; see also DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS, supra note 323, at 831. OSM defines an intermittent stream to mean

(a) A stream or reach of a stream that drains a watershed of at least one square mile, or
(b) A stream or reach of a stream that is below the local water table for at least some part of the year, and obtains its flow from both surface runoff and ground water discharge.

30 C.F.R. § 701.5. Compare with the definition of an ephemeral stream infra note 325.

325 An ephemeral stream is “[a] stream which flows in direct response to precipitation.” BUREAU OF MINES, supra note 323, at 390; see also DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS, supra note 323, at 546. OSM defines ephemeral stream to mean “a stream which flows only in direct response to precipitation in the immediate watershed or in response to the melting of a cover of snow and ice, and which has a channel bottom that is always above the local water table.” 30 C.F.R. § 701.5.

326 It includes the intermittent streams that drain a large enough area. See supra note 324.

327 It includes the intermittent streams that do not drain a large enough area to qualify as intermittent streams under OSM’s definition. See supra note 324.


329 48 Fed. Reg. at 30,313. The 1979 regulations put all streams into the surface waters cate-
interpretation,"\textsuperscript{330} and as helping "avoid problems of practical application and . . . [as aiding] in uniform interpretation of the rule,"\textsuperscript{331} and as "a simple and valuable standard for enforcement purposes."\textsuperscript{332} In sum, OSM made a judgment in 1983 that having a simple and uniform rule was better than continuing the ad hoc determinations required under the 1979 regulations and state judicial proceedings interpreting common-law riparianism distinctions.\textsuperscript{333}

As to groundwater, OSM definitions seem more attuned to the common law. "Ground water" is defined as "subsurface water that fills available openings in rock or soil materials to the extent that they are considered water saturated."\textsuperscript{334} Aquifer is defined to mean "a zone, stratum, or group of strata that can store and transmit water in sufficient quantities for a specific use."\textsuperscript{335}

\section*{C. Applying SMCRA to the Categories of Water}

How SMCRA deals with the three water categories will be discussed in the following order: surface waters, diffused surface waters, and groundwater.

\subsection*{1. Surface Waters}

As already discussed, the environmental standards in SMCRA focus on the water resource from three perspectives: (1) pollution control, (2) prevention of loss to quantity, and (3) prevention of harm to the water-related ecosystems. As to pollution, Congress defined harm in terms of the effluent limitations set by the Environmental Protection Agency ("EPA") under the CWA.\textsuperscript{336} To the extent that coal mine-related water pollution is governed by the CWA,\textsuperscript{337} SMCRA does not alter the law.

As to quantity and ecosystem protection, Congress did not use a similar pre-existing reference point, perhaps because it believed that none existed. Instead, to discuss what would constitute harm to water quantities or to the water-related ecosystems one needs to examine the specific SMCRA provisions that relate to quantity and ecosystem protections.

\textsuperscript{330} 48 Fed. Reg. at 30,313.
\textsuperscript{331} Id.
\textsuperscript{332} Id. at 30,314.
\textsuperscript{333} See supra text accompanying notes 313-15.
\textsuperscript{334} 30 C.F.R. § 701.5 (2003).
\textsuperscript{335} Id.
\textsuperscript{336} See supra Part IV.C.1; infra text accompanying notes 554-57.
\textsuperscript{337} See infra text accompanying notes 456-59.
OSM implements the protection of surface water quantity and ecosystems in part by creating a buffer zone consisting of the area within 100 feet of a watercourse in which no mining activity can take place, unless the activity obtains a waiver as provided for in the regulations.\textsuperscript{338} The original buffer zone regulation was promulgated in 1979\textsuperscript{339} and the revised buffer zone regulation was promulgated in 1983.\textsuperscript{340} OSM viewed the pre-1983 regulation as broader in scope than the revised regulation promulgated in 1983. The old regulation covered "a perennial stream or a stream with a biological community determined according to paragraph (c) of this section."\textsuperscript{341} The new regulation covered only "a perennial stream or an intermittent stream" thus leaving out "some small biological communities which contribute to the overall production of downstream ecosystems."\textsuperscript{342} However,

\textit{t}hose streams not covered by . . . [the revised regulation] will still be subject to the general requirements for protection of water quality and hydrologic balance . . . . It is impossible to conduct surface mining without disturbing a number of minor natural streams, including some which contain biota. For this reason, surface coal mining operations will be permissible as long as environmental protection will be afforded those streams with more significant environmental-resource value.\textsuperscript{343}

\begin{flushleft}
\textsuperscript{338} 30 C.F.R. § 816.57(a) (2003). The buffer zone regulation as rewritten in 1983 provides:
\begin{itemize}
  \item[(a)] No land within 100 feet of a perennial stream or an intermittent stream shall be disturbed by surface mining activities, unless the regulatory authority specifically authorizes surface mining activities closer to, or through, such a stream. The regulatory authority may authorize such activities only upon finding that--
    \begin{itemize}
      \item[(1)] Surface mining activities will not cause or contribute to the violation of applicable State or Federal water quality standards, and will not adversely affect the water quantity and quality or other environmental resources of the stream; and
      \item[(2)] If there will be a temporary or permanent stream-channel diversion, it will comply with § 816.43.
    \end{itemize}
  \item[(b)] The area not to be disturbed shall be designated as a buffer zone, and the operator shall mark it as specified in § 816.11.
\end{itemize}
\textit{Id.} § 816.57(a)-(b); see Surface Coal Mining and Reclamation Operations Permanent Regulatory Program, 48 Fed. Reg. 30,312, 30,327 (June 30, 1983) (to be codified at 30 C.F.R. pts. 816-817) (implementing 30 U.S.C. § 1265(b)(10), (24)).
\textsuperscript{340} 48 Fed. Reg. at 30,327.
\textsuperscript{341} 30 C.F.R. § 816.57(a) (1979) (superseded).
\textsuperscript{342} \textit{Id.} at 30,313.
\textsuperscript{343} \textit{Id.}
\end{flushleft}
The net result of the revision is that ephemeral streams, which would be treated as drainways or drainage channels under the common law,344 would not be protected from mining operations except to the extent that diffused surface waters are protected.345 However, some intermittent streams,346 all of which probably would be treated as surface waters under the common law, could be disturbed in the mining process. Perennial streams and the balance of intermittent streams347 would be fully protected.

In the process of reformulating the buffer zone regulation in 1983, objectors argued that some intermittent streams might not need protection; therefore, ad hoc consideration should be allowed for determining whether an intermittent stream was significant enough to be protected rather than having an inflexible rule.348 OSM responded that its definition of an intermittent stream together with the final buffer zone regulation provided sufficient flexibility to deal with this concern.349 Objectors raised the issue that the regulation might prohibit, or at least impede, filling of rills, gullies, and drains, thus making it difficult to have the valley or head-of-hollow fills necessary to allow mountain top mining.350 OSM responded that under the definition of intermittent streams, rills, gullies, and drains were not included.351 In other words, they fell within the diffused surface waters category. When objectors raised the issue that even when a stream is diverted there might not be enough room in the valley to maintain a 100-foot buffer,352 OSM responded that the waiver provision would allow

344 See supra text accompanying notes 277-79.
345 See infra Part V.C.2.
346 See supra text accompanying note 327.
347 See supra text accompanying note 326.
349 Id.
350 Id. OSM defines valley fills as
a fill structure consisting of any material, other than organic material, that is placed in a valley where side slopes of the existing valley, measured at the steepest point, are greater than 20 degrees, or where the average slope of the profile of the valley from the toe of the fill to the top of the fill is greater than 10 degrees.

30 C.F.R. § 701.5 (2003). It defines head-of-hollow fill as
a fill structure consisting of any material, other than organic material, placed in the uppermost reaches of a hollow where side slopes of the existing hollow, measured at the steepest point, are greater than 20 degrees or the average slope of the profile of the hollow from the toe of the fill to the top of the fill is greater than 10 degrees. In head of hollow fills the top surface of the fill when completed, is at approximately the same elevation as the adjacent ridge line, and no significant area of natural drainage occurs above the fill draining into the fill area.

Id.
adjusting the 100-foot figure.\textsuperscript{353} Objectors raised the issue that the draft buffer zone regulation appeared to require diversion of the stream in order to obtain a waiver even for "minimal clearing for drill holes or construction of hydrologic-discharge structures."\textsuperscript{354} OSM responded that "such activities may not be significant enough to justify a diversion of the stream channel" and adjusted the language\textsuperscript{355} to clarify that waiver and diversion were alternatives.\textsuperscript{356} When concerns about the ability to create head-of-hollow or valley fills were raised, OSM did not respond by saying that it was the U.S. Army Corps of Engineers who would determine whether such fills would take place or mention any other role for the Corps in connection with valley or head-of-hollow fills.\textsuperscript{357}

Because environmental concerns were the reason for enacting SMCRA,\textsuperscript{358} OSM should resolve any ambiguities in SMCRA to the extent that they reflect an environmental aspect in favor of environmental protection,\textsuperscript{359} subject however, to a major qualification. Because Congress rejected banning surface mining,\textsuperscript{360} primarily for energy reasons,\textsuperscript{361} OSM needs to therefore consider the impact on energy resource production of any regulation it adopts that resolves an ambiguity.\textsuperscript{362} This pattern can be seen in the promulgation of the buffer zone regulation. OSM determined first that a buffer zone will protect

\begin{itemize}
  \item \textsuperscript{353} Id.
  \item \textsuperscript{354} Id.
  \item \textsuperscript{355} Id.
  \item \textsuperscript{356} Id.
  \item \textsuperscript{358} See supra text accompanying notes 54-57.
  \item \textsuperscript{359} See, e.g., Trustees for Alaska v. Gorsuch, 835 P.2d 1239 (Alaska 1992). In Trustees for Alaska, the Alaska Supreme Court, in interpreting the state version of SMCRA, stated:
    
    These purposes cannot be accomplished by ignoring cumulative impacts. Based on the policies inherent in these purposes, we conclude that DNR may not ignore cumulative impacts . . . . These purposes require that at the time DNR reviews any . . . permit application it consider the probable cumulative impact . . . .

    \textit{Id.} at 1246.
  \item \textsuperscript{360} See supra text accompanying notes 76-79.
  \item \textsuperscript{361} See supra text accompanying notes 76-79. Some members of Congress did express concern about job loss. See 118 CONG. REC. 35,042 (1972) (statement from Wayne Aspinall and James Kee).
  \item \textsuperscript{362} Thus, Congress stated that it is a purpose of SMCRA to "assure that the coal supply essential to the Nation's energy requirements, and to its economic and social well-being is provided and strike a balance between protection of the environment and agricultural productivity and the Nation's need for coal as an essential source of energy." 30 U.S.C. § 1202(f) (2000).
\end{itemize}
quantity and ecosystems as well as quality. Congress had rejected an economic analysis for regulating hydrologic balance and for minimizing disturbances to fish, wildlife and related environmental values under SMCRA by using "the best technology currently available" standard. So the only concern left for OSM to consider was whether compliance with the buffer zone regulation would end mountain top mining. Once it concluded that the regulation would not end mountain top mining, there was really nothing further that needed to be said. When Congress added the provision to allow excepting mountain top mining from the approximate original contour, Congress apparently was concerned that this exception might be viewed as relaxing its protection of the surface water resource. Congress provided explicitly in the exception provision that "no damage will be done to natural watercourses." However, while watercourses cannot be harmed in situ, they can be moved or diverted under SMCRA and the regulations. Such relocations have been carried out. An early example arose in Illinois. In 1979, the U.S. Army Corps of Engineers permitted moving three and one half miles of Galum Creek. However, the Corps conditioned the move on the operator doing so only between September 15 and April 1 to avoid harm to the endangered Indiana bat and establishing a comparable bat habitat on the new channel within the time limit. An earlier version of SMCRA contained a specific provision that allowed watercourses to be moved. It could be argued that because Congress did not retain that provision in SMCRA as enacted, Congress intended that no such authority exist. However, the result allowing watercourses to be moved follows from necessity in order for surface mining to continue on a modern scale. Thus, the earliest OSM regulations specified standards for stream relocation. The 1979 regulations included two separate sections on "diverting" water. The first section was diversion of "overland and shallow ground water flow, and


367 Mine Company to Reroute Creek, S. ILLINOISAN, Aug. 21, 1979, at 22.

368 It stated so only in the 1973 Senate bill. Senate Bill 425, as passed in the Senate on October 9, 1973, contained the following provision in the hydrologic balance section: "(D) not removing, interrupting, or destroying surface waters during the mining or reclamation process except that surface waters may be relocated where consistent with the operator's approved reclamation plan." Surface Mining Reclamation Act of 1973, S. 425, 93d Cong. § 213(b)(7)(D), reprinted in 119 CONG. REC. 33,337 (1973).

369 See supra note 57.

370 30 C.F.R. §§ 816.43, 816.44 (1979) (superseded).
ephemeral streams” and the second section was diversion of "stream channels." The first was essentially to divert flowing diffused surface waters (ephemeral streams), particularly after rain or snow melt events, away from loose materials or acid-forming materials so as to reduce the prospects of further sedimentation and acid mine drainage. The second was to deal with the diversion either temporary or permanent of surface water stream channels (permanent or intermittent streams) to allow for a continuous surface mining operation where the coal deposit area is traversed by a stream. Thus, it was clear under the 1979 regulations that streams could be diverted either temporarily or permanently either to prevent pollution or to allow mining.

The two diversion provisions were to be read and applied in conjunction with the buffer zone requirement. The stream diversions could be made with approval from the regulatory authority "after making the findings called for in § 816.57(a)," the first part of the buffer zone regulation. A permanent diversion required compliance with special criteria. OSM created some confusion in 1983 by putting both types of diversions into one section.

Based both on SMCRA and the detail in the OSM regulations, coal mining operations are to fully protect surface waters, and watercourses in particular, from harm either by not engaging in mining activities near enough to watercourses to harm them or by diverting or moving them out of harms way. This result varies the common law relating to surface waters to some extent. There would be no all-encompassing bright line rule under the common law such as the buffer zone regulation creates. Private landowners, of course, had no authority to fill in navigable surface waters, but they probably could fill in nonnavigable surface waters if it was a "reasonable use." Reasonableness generally would be determined on the basis of the balancing of the user’s inter-

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371 Id. § 816.43 (superseded).
372 Id. § 816.44 (superseded).
374 30 C.F.R. § 816.44(a) (1979) (superseded).
375 Id. § 816.44(d) (superseded) (requiring restoration or maintenance of natural riparian vegetation on the banks, establishing or restoring the natural meandering shape with an environmentally acceptable gradient, and establishing or restoring to a longitudinal profile and cross-section approximating premining characteristics).
377 To understand the distinctions in protection that Congress is making in SMCRA, it is necessary to compare all of the provisions in SMCRA that relate specifically to water.
378 See supra text accompanying notes 338-47.
379 See supra text accompanying notes 290-92.
est against the impact on other uses or users. Under the Restatement formulation, the public interest was a relevant consideration for determining reasonableness as well. Since state ownership of the bed was subject to the public trust, issues remained as to when the state could authorize filling in without violating that trust.

The most significant consideration and discussion of the buffer zone standard to date is in Bragg v. Robertson, a West Virginia case. In counts two and three of the complaint in Bragg, the plaintiffs alleged violations by West Virginia of the buffer zone regulations. Count two alleged that the West Virginia Director "engaged in a pattern and practice of approving buffer zone variances based on permit applications that did not include findings required before such variances may be approved." Count three alleged in part that the Director's authority under the regulation does not allow the burial of substantial parts of intermittent and perennial streams. The Director admitted that when authorizing valley fills in streams he had not made six of the seven findings re-

380 See Dellapenna, supra note 3, § 6.01(a)(7).
381 See supra text accompanying note 286.
382 See supra note 290.

In Bragg v. Robertson, No. 2:98-0636, 1998 WL 1781736 (S.D. W. Va. Oct. 9, 1998), the court held that plaintiffs did not have to exhaust administrative remedies before bringing a citizen suit alleging a pattern of violations and also dealt with issues of standing, lack of jurisdiction, and the statute of limitations. In Bragg v. Robertson, 183 F.R.D. 494 (S.D. W. Va. 1998), the court granted the motion to intervene by owners and lessors of coal rights that were under current permits to be mined. Id. at 496-97.

384 The remaining counts were settled so they are not discussed in this Article. On June 17, 1999, the court accepted the settlement agreement resolving counts 11, 12, and 13. See Bragg, 72 F. Supp. 2d at 645; see also Press Release, U.S. Army Corps of Eng'rs, Agencies Extend Public Comment Period for Draft EIS About Mountain Top Coal Mining (Aug. 14, 2003), http://www.OSMRE.gov/news/081403.pdf (extending the comment period to January 6, 2004, on "new actions to protect Appalachian streams from effects associated with mountain top coal mining"). On July 26, 1999, the court received a settlement agreement purporting to resolve all remaining counts except counts 2 and 3, with the parties agreeing that they would be unable to reach agreement on those two counts. It was approved in Bragg v. Robertson, 83 F. Supp. 2d 713 (S.D. W. Va. 2000).

385 See Bragg, 72 F. Supp. 2d at 647.
386 Id.
quired before granting buffer zone variances. They argued, first, that the buffer zone regulation applied only to stream segments below the valley fill. They argued, second, that when the buffer zone regulation is harmonized with the rest of SMCRA, valley fills are not prohibited. Finally, they argued that under a memorandum of understanding ("MOU") entered into among DEP, EPA, OSM, and the Corps, the Corps had authority to authorize filling of streams.

The court rejected the first argument because streams or stream segments are covered expressly in the West Virginia regulations and via the OSM-promulgated definitions. The court rejected the second argument for two reasons. First, the West Virginia regulation refers only to "natural drainway", by which apparently is meant the ephemeral stream area where diffused surface water will congregate to flow. Thus, authority to fill ephemeral streams is not authority to fill perennial and intermittent streams. Second, the OSM regulation does not imply that perennial and intermittent streams can be filled. The court rejected the third argument on the basis that the Corps' own regulation limits its authority to approving fill only where fill is to be used for some constructive purpose and not merely to get rid of waste. The authority of the Corps to authorize filling of streams becomes the core of the case in Kentuckians for the Commonwealth, Inc. v. Rivenburgh, so that issue will be considered again in the context of that case.

387 Id. at 647. He claimed one of the findings was made when the state granted CWA § 401 certification. Id. at 647 n.7.
388 Id. at 647.
389 Id. at 647-48.
390 The MOU authorizes the Corps to approve valley fills in perennial and intermittent streams and provides that buffer zone rule findings are met through compliance with the requirements necessary to carry out dredge and fill activities under section 404. Id. at 648.
391 Id. at 648.
392 Id. at 651-52.
393 See id. at 651.
396 Id. at 653.
397 Id. at 654-60.
399 See infra text accompanying notes 539-60.
In *Bragg v. West Virginia Coal Association*, the Fourth Circuit Court of Appeals affirmed in part, reversed in part, and remanded the West Virginia case. The court affirmed the consent decree of February 17, 2000 that settled some of the claims, but vacated the injunction and remanded for dismissal of the complaint without prejudice. The court upheld the consent decree on the basis that the Eleventh Amendment claim had been waived. It reversed the other two counts on the basis that sovereign immunity under the Eleventh Amendment barred the plaintiffs from suing an official of West Virginia in federal court.

Because *Bragg* involved a citizen suit, the court examined the citizen suit provision that Congress included in SMCRA. It provides that any person having an appropriate interest may bring a civil action against the Secretary or the appropriate State regulatory authority to the extent permitted by the eleventh amendment to the Constitution where there is alleged a failure of the Secretary or the appropriate State regulatory authority to perform any act or duty under this chapter which is not discretionary with the Secretary or with the appropriate State regulatory authority.

Clearly, Congress contemplated citizen suits against states that have received primacy under SMCRA through the approval of the state’s program because only then does a State become the “regulatory authority.” Consequently, any interpretation of SMCRA that would automatically reject all citizen suits in federal court against states that have primacy should be rejected since it would render the provision nugatory. The district court had allowed the suit to proceed on the basis that federal, and not just state, law exists. Thus, a plausible basis to preserve citizen suits in federal court after state primacy would appear to exist.

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401 *Bragg*, 72 F. Supp. 2d 642.
402 248 F.3d at 300. As noted earlier supra note 384, there were two settlement agreements with two consent decrees in the case. The first of the two consent decrees apparently was not appealed. *See id.* at 287 n.1.
403 *Id.* at 300.
404 *See id.* at 286.
405 *Id.*
407 *Id.* § 1270(b).
408 *Id.* § 1291(22).
409 *Bragg* v. Robertson, No. 2:98-0636, 1998 WL 1781736 (S.D. W. Va. Oct. 9, 1998). The district court rejected the Eleventh Amendment claim of Michael Miano, Director of the West Virginia Division of Environmental Protection. The court’s basis was the “well-established, nar-
The Fourth Circuit examined the Eleventh Amendment and two principal arguments by Bragg that an exception should apply. These arguments were, first, that *Ex parte Young* provided a relevant exception that had been applied by the district court and, second, that waiver should apply.

In examining the first argument, the court explored the nature of the federal/state relationship under SMCRA and distinguished the relationship under the Clean Water Act, the other Act whose applicability is explored in this Article. The court concluded that it was state law, if anything, that was being violated. Therefore, the *Ex parte Young* exception does not apply and the federal government telling a state to comply with state law "conflicts directly" with the principles of federalism underlying the Eleventh Amendment. Finally, the court reasoned that the federal government can sue the state and the citizens can pursue the matter in state court so it is not necessary to "offend the dignity of the State."

As to Bragg’s second argument, that the State waived sovereign immunity when it elected to seek the approval of the federal government for its state program, the court responded in effect that the language of the citizen suit provision quoted above preserves state immunity. Bragg was arguing that the language served as a warning to the state that if the state provides a program under SMCRA it may be waiving its immunity; the court responded that such a warning has to be "unmistakably clear and unequivocal" which this, in its opinion, was not.

On the other hand, intervenors in *Bragg* argued that the second settlement agreement approved by the district court was also vitiated by sovereign

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411 209 U.S. 123.

412 See *Bragg*, 248 F.3d at 292.

413 *Id.* at 293-94.

414 *Id.* at 296 (quoting *Pennhurst State Sch. & Hosp. v. Halderman*, 465 U.S. 89, 106 (1984)).

415 *Id.* at 297.

416 See *supra* text accompanying note 407.

417 See *Bragg*, 248 F.3d at 298.

418 *Id.*

419 See *supra* note 384.
immunity, but the court noted in response that sovereign immunity can be waived and a failure by the state to raise it constitutes waiver.\textsuperscript{420}

Thus, while \textit{Bragg} limits the forum available to citizens in seeking to enforce SMCRA, it also clarifies that surface waters, defined particularly in OSM’s buffer zone regulations as perennial and intermittent streams, cannot be filled, or otherwise harmed, by surface coal mining activities. Such streams can, however, be moved out of harms way to allow the mining to proceed.

2. Diffused Surface Waters

In SMCRA, Congress uses terminology consistent with waters being identified as diffused surface waters. For example, the mining operation is to clean out and remove “temporary or large settling ponds or other siltation structures from drainways after disturbed areas are revegetated and stabilized.”\textsuperscript{421} The “drainways” terminology is consistent with the diffused surface waters category\textsuperscript{422} as contrasted with the “watercourse” terminology consistent with the surface waters category.\textsuperscript{423}

However, there is no general protection against disturbing diffused surface waters in surface mining under SMCRA as there is for surface waters.\textsuperscript{424} As OSM pointed out in adopting the buffer zone regulation: “It is impossible to conduct surface mining without disturbing a number of minor natural streams, including some which contain biota. For this reason, surface coal mining operations will be permissible as long as environmental protection will be afforded those streams with more significant environmental-resource value.”\textsuperscript{425}

There are, however, two points to be made. First, Congress recognized that diffused surface waters serve as vehicles for carrying acidic materials and sediments into surface waters and groundwater.\textsuperscript{426} Thus, SMCRA requires diffused surface waters to be managed in such a way that they do not contribute to sedimentation or acidification of surface waters or groundwater.\textsuperscript{427} Among management methods that Congress contemplated for diffused surface waters are impoundment of the waters to allow mining contaminants in the water to settle,\textsuperscript{428} diversion of the waters to keep the waters away from mining contami-

\textsuperscript{420} See \textit{Bragg}, 248 F.3d at 298-300.


\textsuperscript{422} See supra text accompanying notes 313-15.

\textsuperscript{423} See supra text accompanying notes 270-79.

\textsuperscript{424} See supra Part V.C.1.

\textsuperscript{425} See supra text accompanying note 343.

\textsuperscript{426} See supra text accompanying note 343.

\textsuperscript{427} See supra Part IV.C.1.

\textsuperscript{428} See supra text accompanying notes 133, 142-47.

nants,\textsuperscript{429} and collection and treatment of the waters to remove mining contaminants from the waters.\textsuperscript{430} Thus, even though the Clean Water Act already deals with water pollution, the primary emphasis in SMCRA with respect to diffused surface waters is on water pollution control because in general the CWA does not deal with diffused surface waters as carriers of pollutants.\textsuperscript{431} To what extent the CWA and SMCRA change the common law regarding water pollution will be discussed in the context of the CWA.\textsuperscript{432}

Second, while diffused surface waters are potential conduits for mining contaminants, diffused surface waters contribute quantity to surface waters and to groundwater. Even though the common law treated diffused surface waters as something to be got rid of, they were usually got rid of by draining into ditches that led to streams and/or other useable bodies of water.\textsuperscript{433} They contribute to groundwater, by a process known as "recharge,"\textsuperscript{434} by percolating through the soil until at least some of the waters reach usable water supplies, commonly called aquifers.\textsuperscript{435} So, as part of the overall protection of the hydrologic balance under SMCRA, diffused surface waters have a role to play. The hydrologic balance provision\textsuperscript{436} for surface mining specifically requires mining operations to restore "recharge capacity of the mined area to approximate pre-mining conditions."\textsuperscript{437} Furthermore, reclamation requires recontouring so the mine area "blends into and complements the drainage pattern of the surrounding terrain."\textsuperscript{438} Under the common law, landowners generally were free to alter their landscape and thereby affect the diffused surface water as long as the change did not cause undue harm to others. Usually, such harm would come through directing the water to locations where it had not gone before, or directing it in greater quantities or concentrations where it had gone before.\textsuperscript{439} What

\textsuperscript{429} Id. § 1265(b)(10)(A)(iii).
\textsuperscript{430} Id. § 1265(b)(10)(A)(ii).
\textsuperscript{431} See infra Part VI.B.
\textsuperscript{432} See infra Part VI.C.
\textsuperscript{433} See generally Dellapenna, supra note 274, §§ 18.03, 18.03.
\textsuperscript{434} Id.
\textsuperscript{435} Id.
\textsuperscript{436} 30 U.S.C. § 1265(b)(10) (2000). This requirement is not in the underground hydrologic balance provision. Id. § 1266(b)(9).
\textsuperscript{437} Id. § 1265(b)(10)(D). Having delayed implementing this provision, OSM ultimately wound up contracting with the National Academy of Sciences to review and report on what restoring recharge capacity meant in the mining context. See SURFACE COAL MINING EFFECTS, supra note 23, at v-vi (responding to a request to interpret this provision of SMCRA); Id. at 9-17 (describing the legislative history of the provision).
\textsuperscript{439} See supra text accompanying notes 293-96.
a coal-mine operator can do or not do with diffused surface waters under SMCRA may be more circumscribed in this context, although that is not clear. Perhaps administration of the rules through a regulatory process rather than through court action by affected persons makes it more intensive. Certainly, the process should make the actor more aware of the rules.

3. Groundwater

In SMCRA, Congress anticipates that groundwater will be disturbed through both surface and underground mining operations. As a result someone’s well may be interfered with and water supply diminished. While Congress apparently did not seek to prevent disturbances to groundwater to the same degree that it did disturbances to surface water, Congress was nevertheless concerned with disturbances to the groundwater resource. Congress therefore provided some measures to deal with the disturbances.

First, Congress provides some detail for monitoring of the disturbances. As noted earlier, monitoring should provide data about the resource that was not available before.

Additionally, Congress also sought in SMCRA to provide some positive protections for the groundwater resource and for a person’s rights therein. Thus, in the provisions for designating land unsuitable for mining SMCRA specifically provides that lands that could see “substantial loss or reduction of long-range productivity of water supply” can be designated as unsuitable for mining operations. SMCRA specifically includes “aquifers and aquifer recharge areas” in such areas.

Further, in the general environmental standards relating to hydrologic balance, Congress focused on avoiding acid mine drainage but also specifically required that mining operations “keep acid or other toxic drainage from entering ground and surface waters.” In the environmental standard specifically directed at underground mining that relates to hydrologic balance, Congress required minimizing disturbances to “the quantity of water in surface ground water systems.” After mining is over, as already noted, SMCRA contains a pro-

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440 See supra text accompanying notes 236-37.
441 See 30 U.S.C. § 1267(b)(2) (2000); see also supra text accompanying notes 236-41.
442 See supra text accompanying notes 236-41.
443 See, e.g., supra text accompanying note 136.
444 See 30 U.S.C. § 1272 (2000); see also supra Part IV.D.
446 Id.
447 Id. § 1265(b)(10)(A)(iii) (emphasis added).
448 Id. § 1266(b)(9).
vision requiring a surface mining operation to restore the "recharge capacity of the mined area to approximate premining conditions." However, restoration of the aquifer is not required. And nothing equivalent to the buffer zone rule that applies to and protects surface waters exists with reference to groundwater.

Finally, SMCRA contains a provision requiring that when someone’s water supply from “an underground or surface source” is interfered with, the operator has to replace the supply. When it was determined that the replacement provision did not apply to loss due to underground mining, Congress amended SMCRA in 1992 to provide for supply replacement for loss due to underground mining. However, as discussed earlier, the underground mining provision is not as broad in scope as the provision that applies to interference with water supply due to surface mining.

D. Conclusions to Part V

Congress recognized the different categories of water that had developed under state law and treated each category differently. However, the focus in SMCRA is on protecting water resources from pollution, from the lessening of quantity, and from damage to the water related ecosystem. In substantial part this focus is motivated by a desire to have the water resource available as an adjunct to the land in order to preserve the economic viability of the mined lands. SMCRA, on the other hand, does not itself provide water for mineral development purposes. There are no procedures in SMCRA for obtaining water to use in mining or for mineral processing once the mining has been completed.

SMCRA provides the strongest protection for surface waters and the least protection for groundwater. In providing the protections, SMCRA deviates to some extent from the common law as it had developed in the Appalachian states in that the water resource does appear to receive greater protection under SMCRA than under the common law. However, since the common law is an evolving institution, it is unclear how the common law would have developed as it related to coal mining absent SMCRA.

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451 See supra text accompanying notes 338-47.


453 See supra text accompanying note 259.

454 See supra text accompanying note 261.

455 See supra text accompanying notes 261-63.
Because SMCRA deals so extensively with environmental matters, the question arises as to how SMCRA interrelates with the many other federal environmental statutes and particularly for purposes of this Article, the Clean Water Act. Congress provided in SMCRA that "[n]othing in this Act shall be construed as superseding, amending, modifying, or repealing . . . the Federal Water Pollution Control Act . . ., as amended . . .," the State laws enacted pursuant thereto, or other Federal laws relating to preservation of water quality." As the emphasized language shows, Congress clearly views the CWA as "relating to preservation of water quality," and to that extent and in that context it is not to be superseded. SMCRA also contains several other provisions that refer to the CWA. Thus, the approval of state programs require EPA concurrence, and the abandoned mine reclamation provisions require that no water quality standards "shall in any way be less that that required under the Federal Water Pollution Control Act."

VI. THE CLEAN WATER ACT

A. History of the Clean Water Act

Congress enacted the Federal Water Pollution Control Act ("FWPCA") in 1948. However, even with substantial amendments beginning in 1965, FWPCA had an insignificant role until the passage of the Federal Water Pollution Control Act Amendments of 1972. State common law and state statutes

456 Initially, the federal legislation was known as the Federal Water Pollution Control Act ("FWPCA"). The Clean Water Act title came into being after the passage of the Clean Water Act of 1977 ("CWA"), which amended the FWPCA. See 40 C.F.R. §§ 122.1(a), 122.2 (2003) (indicating that the CWA was formerly referred to as the Federal Water Pollution Control Act). But see 40 C.F.R. § 104.2(a) (2003); supra notes 17-19 and accompanying text.

457 30 U.S.C. § 1292(a) (2000) (emphasis added). The FWPCA is one of eight listed statutes, which also includes the Fish and Wildlife Coordination Act of 1934. See id. § 1292(a)(1)-(8).

458 Id. § 1253(b)(2).

459 Id. § 1242(d); see supra text accompanying note 120.


had dealt with water pollution issues over the years and so the 1948 federal Act dealt only with "interstate waters." It was perceived that any one state could not deal with interstate waters effectively on its own. Environmental concerns came to the forefront in the 1960s. Because of this heightened concern for the environment, other avenues of regulation were sought to deal with growing concerns over water pollution, the ineffective national act, and perceived inadequacies in state law.

The Rivers and Harbors Act of 1899 became the focal point of increased scrutiny because it contained two seemingly relevant provisions. Section 10 of that Act provided that "the creation of any obstruction not affirmatively authorized by Congress, to the navigable capacity of any of the waters of the United States is hereby prohibited." Section 10 also provided that "it shall not be lawful to excavate or fill, or in any manner to alter or modify the course, location, condition, or capacity of, any . . . lake . . . or of the channel of any navigable water of the United States . . . " Section 13 of that Act provided that

463 See Peter N. Davis, Common Law of Water Pollution, in 5 WATERS AND WATER RIGHTS, supra note 17, ch. 57.

464 § 2(d)(1), 62 Stat. at 1156. The Act defined such waters as "all rivers, lakes, and other waters that flow across, or form a part of, State boundaries." § 10(e), 62 Stat. at 1161. The Act made it clear that it covered only pollution "which endanger[ed] health or welfare of persons in a State other than that in which the discharge originates." § 2(d)(1), 62 Stat. at 1156.


467 § 10, 30 Stat. at 1151 (codified at 33 U.S.C. § 403 (2000)). The provision has its history in a series of U.S. Supreme Court cases beginning in 1829 with Wilson v. Black Bird Creek Marsh Co., 27 U.S. (2 Pet.) 245 (1829), and culminating in 1888 with Willamette Iron Bridge Co. v. Hatch, 125 U.S. 1 (1888), wherein the Court repeatedly held that the states could authorize the construction of obstructions, such as piers, bridges, and dams, in rivers and other bodies of water even if they were "navigable waters of the United States" as long as Congress had not acted to regulate those waters. See United States v. Rio Grande Dam & Irrig. Co., 174 U.S. 690 (1899).

468 § 10, 30 Stat. at 1151.
it shall not be lawful to throw, discharge, or deposit... any refuse matter of any kind or description whatever other than that flowing from streets and sewers and passing therefrom in a liquid state, into any navigable water of the United States, or into any tributary of any navigable water from which the same shall float or be washed into such navigable water [without permission from the Secretary of War].

Thus, section 10 appears to focus on what might be an affixed or otherwise permanent change to the navigable channel whereas section 13 appears to focus on ephemeral changes, such as floating material and hazardous substances.

The Rivers and Harbors Act was within the jurisdiction of the Secretary of War and the U.S. Army Corps of Engineers. The Corps, almost from the beginning of the country, had charge of maintaining navigability of U.S. waterways and the Corps focused on the Rivers and Harbors Act as relating to navigation. In effect, therefore, the Act gave the Corps a veto power. The Corps could prohibit activity in order to protect navigability but it could not override other restrictions that might prevent the activity unless the activity was being undertaken with the Corps' permission to further navigability; this approach appears to have remained in effect until 1960.

In 1960, in United States v. Republic Steel Corp., the United States Supreme Court, relying on both sections 10 and 13, ruled that the Rivers and Harbors Act prohibited the deposit of industrial solids into a navigable body of

469 Section 13 was generally known as the Refuse Act. See also Act of March 3, 1905, Pub. L. No. 58-215, § 4, 33 Stat. 1117, 1147 (codified as 33 U.S.C. § 419 (2000)) (authorizing regulations for dumping of dredgings, earth, garbage, and other refuse materials into navigable water if "required in the interest of navigation").


471 See §§ 7-14, 30 Stat. at 1150-52.

472 The U.S. Army Corps of Engineers was founded in 1802, see Act of Mar. 16, 1802, ch. 9, § 26-28, 2 Stat. 132, 137, and was to "be stationed at West Point... and shall constitute a military academy..." § 27, 2 Stat at 137. The Corps' construction program began with an Act to procure the necessary surveys, plans, and estimates, upon the subject of roads and canals. Act of Apr. 30, 1824, ch. 46, 4 Stat. 22; see NEW DIRECTIONS IN WATER RESOURCES PLANNING FOR THE U.S. ARMY CORPS OF ENGINEERS 10-18 (1999); SHALLAT, supra note 26. For the type of work approved for and undertaken by the Corps in the 1820s, see §§ 1-2, 30 Stat. at 1121-49.

473 See Dunning, supra note 288, at 17, 72-76 (discussing the federal navigational servitude).

474 362 U.S. 482 (1960).
water without a permit.\textsuperscript{475} Under section 10, the industrial solids created an “obstruction;” under section 13, there was a “discharge” without a permit.\textsuperscript{476}

The Supreme Court followed Republic Steel in 1966 with its decision in United States v. Standard Oil Co.,\textsuperscript{477} where it held that “refuse matter” under section 13 included commercially valuable oil and such oil was covered by the Act even if it entered the water accidentally.\textsuperscript{478} The Court concluded that the legislative history was plain that the injury to watercourses that was to be remedied “was caused in part by obstacles that impeded navigation and in part by pollution.”\textsuperscript{479} In 1970, in Zabel v. Tabb,\textsuperscript{480} the Fifth Circuit applied Standard Oil to section 10. The federal district court, having found no obstruction to navigation, ordered the Corps to issue a fill permit for eleven acres of tidelands in Boca Ciega Bay, Florida, for a mobile trailer park.\textsuperscript{481} The Corps had denied the permit, noting among other considerations that there would be “a distinctly harmful effect on the fish and wildlife resources in Boca Ciega Bay.”\textsuperscript{482} The Fifth Circuit explored the changing nature of the concerns for navigable waters and referring to other legislation,\textsuperscript{483} Congressional reports,\textsuperscript{484} and the Corps own regulations,\textsuperscript{485} concluded that the Rivers and Harbors Act could no longer be construed in isolation.\textsuperscript{486} The Corps could consider “environmental conservation” in deciding whether to approve or deny a permit application,\textsuperscript{487} and “can refuse on conservation grounds to grant a permit.”\textsuperscript{488}

In 1970, shortly after the decision in Zabel, President Nixon ordered the Corps to develop water pollution control regulations.\textsuperscript{489} The Corps issued those

\textsuperscript{475} Id. at 485.
\textsuperscript{476} Id.
\textsuperscript{477} 384 U.S. 224 (1966).
\textsuperscript{478} Id. at 228-30.
\textsuperscript{479} Id. at 229. It covered “all foreign substances and pollutants” except for sewage, which was excluded specifically by the section itself. See supra text accompanying notes 469-70.
\textsuperscript{480} 430 F.2d 199 (5th Cir. 1970).
\textsuperscript{481} Id. at 201.
\textsuperscript{482} Id. at 202.
\textsuperscript{484} H.R. REP. NO. 91-917 (1970).
\textsuperscript{485} 33 C.F.R. § 209.120(d)(1) (1969) (superseded).
\textsuperscript{486} Zabel, 430 F.2d at 209-11.
\textsuperscript{487} Id. at 207-14.
\textsuperscript{488} Id. at 214.
regulations in 1971. Later in 1971, the federal district court enjoined enforcement of the regulations as ultra vires and for noncompliance with NEPA. In the meantime Congress was acting and on October 18, 1972, passed the 1972 Amendments. The history of the 1972 Amendments contains a litany of insufficiencies in state law, but the amendments were themselves limited in scope. Despite significant amendments in 1977, 1987, and 1990, federal water pollution control legislation still is limited in scope.

B. Scope and Approach of the Clean Water Act

The CWA declares unlawful "the discharge of any pollutant by any person" except in compliance with the CWA. Because discharge is defined as adding pollutants to navigable waters from a "point source," nonpoint sources of pollutants are not covered. Furthermore, because "discharge" covers only addition of pollutants to "navigable waters," addition of pollutants to groundwater is not covered unless perhaps when the groundwater is a conduit for pollu-

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490 Permits for Discharges or Deposits into Navigable Waters, 36 Fed. Reg. 6564 (Apr. 4, 1971). The regulations required industrial dischargers of pollutants to apply for a permit. The EPA would decide the pollution control aspect and the Corps would consider the impact on navigation. Id. at 6566.

491 See Kalur v. Resor, 335 F. Supp. 1, 3-4, 15 (D.D.C. 1971); see also supra note 465 as to NEPA.


493 See infra text accompanying notes 497-502.


497 "'Discharge of a pollutant' . . . means (A) any addition of any pollutant to navigable waters from any point source, (B) any addition of any pollutant to the waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft.” 33 U.S.C. § 1362(12) (2000).

498 Pollutant means “dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.” Id. § 1362(6). The definition goes on to provide some exceptions. Id.

499 Id. § 1311(a).

500 Id. § 1362(12).
tion to reach surface waters. Finally, not all surface waters are necessarily within the scope of "navigable" waters.

Basically, all of the pollutants covered by the CWA, except for two, are dealt with by the Environmental Protection Agency (EPA) under section 402 of the CWA, which provides for National Pollutant Discharge Elimination System (NPDES) permits. EPA identifies the pollutants and sets effluent limitations for each pollutant and a permit is required to discharge that pollutant from a point source.

The 1972 amendments did not repeal sections 10 and 13 of the Rivers and Harbors Act. As to section 13, the 1972 amendments provided, first, that permits that had been issued under section 13 would constitute valid NPDES permits and, second, that NPDES permits would be deemed permits issued under section 13. However, the 1972 amendments also provided that no further permits were to be issued under section 13 for discharges into navigable waters. Pending section 13 applications were to be deemed applications for NPDES permits under the 1972 amendments. As to section 10, Congress provided that the 1972 amendments shall not be construed as... affecting or impairing the authority of the Secretary of the Army (A) to maintain navigation or (B) under the Act of March 3, 1899...; except that any permit issued under section 404 of [the 1972 Amendments]... shall be conclusive as to the effect on water quality of any discharge resulting from any activity subject to section 10 of the Act of March 3, 1899.

502 See Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Eng'rs, 531 U.S. 159 (2001). The Supreme Court reached this decision despite the admonition of the Senate/House Conference Committee that the definition should be accorded "the broadest possible constitutional interpretation unencumbered by agency determinations which have been made or may be made for administrative purposes." S. REP. No. 92-1236, at 144 (1972).
506 Id.
508 § 511(a), 86 Stat. at 893 (codified at 33 U.S.C. § 1371(a) (2000)) (emphasis added). The 1972 amendments also provide that discharges "subject to the Rivers and Harbors Act of 1910 (36 Stat. 593; 33 U.S.C. § 421) and the Supervisory Harbors Act of 1888 (25 Stat. 209; 33 U.S.C. §§ 441-451b)" were to be regulated pursuant to the 1972 Amendments and not subject to the earlier
Further, the Administrator of the EPA could not approve state programs for administration of the NPDES permit system unless the State had adequate authority to insure that no permit would be issued if in "the judgment of the Secretary of the Army acting through the Chief of Engineers... anchorage and navigation of any of the navigable waters would be substantially impaired thereby." The amendments also contained several provisions that gave the U.S. Army Corps of Engineers, the Secretary of the Army acting through the Corps, or the Chief of Engineers, specific roles to play under the amended Act. Probably the most significant provision gives the Secretary of the Army authority, acting through the Chief of Engineers, to issue permits "for the discharge of dredged or fill material into the navigable waters at specified disposal sites."

The result of this last provision is that two pollutants, dredge material and fill material, are dealt with by the U.S. Army Corps of Engineers under section 404 of the Clean Water Act in a program separate from the NPDES program. As already noted, the U.S. Army Corps of Engineers has a long history with maintaining the navigability of internal waters both through preventing others from interfering with such waters and through its own dredging operations and other channel modifications. Because dredging the channels to maintain sufficient depth for vessels is a principal means of maintaining navigability, a need exists for the Corps or its contractees to dispose of a lot of dredged material. The Senate version of the 1972 amendments simply provided a special procedure within the NPDES permit system for discharging dredged spoil and did not mention fill. The House version substituted a separate permitting provision for dealing with the discharge of both dredged and fill material. The Senate/House Conference Committee substituted what came out as section 404 in place of the House substitute.

acts "except as to effect on navigation and anchorage." § 511(b), 86 Stat. at 893 (codified at 33 U.S.C. § 1371(b) (2000)).


§ 102(b), § 108(d)(1), § 208(h), § 401(c), 86 Stat. at 817, 829, 843, 879 (codified at 33 U.S.C. § 1252(b), § 1258(d)(1), § 1288(h), § 1341(c) (2000)).

§ 404, 86 Stat. at 884 (codified at 33 U.S.C. § 1344 (2000)).

See supra text accompanying note 503.

See generally Peter N. Davis, Wetlands Preservation, in 5 WATERS AND WATER RIGHTS, supra note 17, § 61.03(c)(1).

See supra note 472. See generally SHALLAT, supra note 26 (discussing the origins, development, and growth of the U.S. Army Corps of Engineers).

S. 2770, 92nd Cong. § 402(m) (1971); 117 CONG. REC. 38,884 (1971).

H.R. 11,896, 92nd Cong. § 404 (1971); 118 CONG. REC. 10,825 (1972).

118 CONG. REC. at 33,692-718 (Senate); id. at 33,747-67 (House).
The FWPCA, while providing for federal primacy, allowed states to administer the NPDES permit program and the 1977 amendments provided for state administration of the dredge and fill program. Most states administer the NPDES permit program, but few states administer the dredge and fill program. Whether the states took administration or not, the FWPCA programs superseded whatever programs the states had. However, states were allowed to be more stringent than the federal statute and, of course, states could fill gaps that existed in the federal regime. By 1972, many states had already passed statutes to supplement their common law on water pollution. Although there were a lot of common-law cases based on a variety of theories, including invasion of riparian rights, nuisance, negligence, and trespass, a regulatory system was generally viewed as better than the common-law ad hoc approach. So even though the federal rules on point source water pollution may have been

519 Id. § 1342(b).
520 Id. § 1344(g).
522 See Davis, supra note 513, § 61.03(c)(6).
524 See Beck, supra note 17, § 52.05(c), at 169.
525 See, e.g., Elmore v. Ingalls, 17 So. 2d 674 (Ala. 1944); Tutwiler Coal, Coke & Iron Co. v. Nichols, 39 So. 762 (Ala. 1905); Roughton v. Thiele Kaolin Co., 74 S.E.2d 844 (Ga. 1953); Inland Steel Co. v. Isaacs, 143 S.W.2d 503 (Ky. 1940); Jessup & Moore Paper Co. v. Zeitler, 24 A.2d 788 (Md. 1942); Gladfelter v. Walker, 40 Md. 1 (1874); Columbus & Hocking Coal & Iron Co. v. Tucker, 26 N.E. 630 (Ohio 1891); McCune v. Pittsburg & Balt. Coal Co., 85 A. 1102 (Pa. 1913); Fricke v. Quinn, 41 A. 737 (Pa. 1898); H.B. Bowling Coal Co. v. Ruffner, 100 S.W. 116 (Tenn. 1907); Sumner v. O'Dell, 12 Tenn. App. 496 (Ct. App. 1930); Arminius Chem. Co. v. Landrum, 73 S.E. 459 (Va. 1912); Day v. Louisvile Coal & Coke Co., 53 S.E. 776 (W. Va. 1906).
528 See, e.g., Hooper v. Dora Coal Mining Co., 10 So. 652 (Ala. 1892); Roughton v. Thiele Kaolin Co., 74 S.E.2d 844 (Ga. 1953); Chapman v. Beaver Dam Coal Co., 327 S.W.2d 397 (Ky. 1959); Upson Coal & Mining Co. v. Williams, 7 Ohio C.C. (n.s.) 293 (Cir. Ct. 1905), aff'd per curiam, 80 N.E. 1134 (Ohio 1906); Keppel v. Lehigh Coal & Navig. Co., 50 A. 302 (Pa. 1901).
more comprehensive and stringent than state rules were, many states were on their way to dealing with the same types of pollution through regulatory means.

C. Applying the CWA to Coal Mining and Harmonizing the CWA with SMCRA

As a result of coal mining operations, pollutants can enter navigable waters via either point or nonpoint sources. In *Sierra Club v. Abston Construction Co.*, the court considered in some detail what constitutes a point source in the context of surface mining for coal. The court described the problems in the *Abston Construction* case as consisting of "[s]ediment basin overflow and the erosion of piles of discarded material" resulting in "rainwater carrying pollutants into a navigable body of water." With no human conveyance involved, the district court granted summary judgment for defendant. The Fifth Circuit Court of Appeals noted that to be a point source there needs to be a "discernible, confined and discrete" conveyance, not "natural rainfall over a broad area." The Fifth Circuit looked at what, if anything, the mine operators had done, saying that if an operator collects or channels the surface runoff, it is a point source discharge. The court found two operator activities that were relevant: (1) collecting the water in pits; and (2) configuring spoil piles so as to in effect create ditches, gullies, or something similar. Thus, summary judgment was in error; further factual development was required. The Fifth Circuit was using a distinction drawn under the common law relating to diffused surface waters

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529 620 F.2d 41 (5th Cir. 1980). *Sierra Club v. El Paso Gold Mines, Inc.*, 198 F. Supp. 2d 1265 (D. Colo. 2002), involved a gold mine. El Paso Gold Mines is alleged to have discharged pollutants into the Roosevelt Tunnel without a valid permit. *Id.* at 1267. "Defendant emphasizes that the Roosevelt Tunnel, which was constructed a century ago to drain subsurface water from mines within the District, is six miles long and runs under mining properties owned or operated by several parties." *Id.* at 1269; see also Rybachek v. EPA, 904 F.2d 1276 (9th Cir. 1990) (describing placer mining and approving of the treatment EPA requires for sluice-box discharge water in gold mining enterprises); Trustees for Alaska v. EPA, 749 F.2d 549, 558 (9th Cir. 1984) (finding a "point source" in the mining context); United States v. Earth Scis., Inc., 599 F.2d 368, 373 (10th Cir. 1979) (finding point source, discharge, navigable waters, and appropriate remedy in a gold leaching operation); Beartooth Alliance v. Crown Butte Mines, 904 F. Supp. 1168 (D. Mont. 1995) (finding a pollutant and rejecting defendants defense that acid mine drainage existed at the location before human disturbance).

530 620 F.2d at 43.

531 See *id.*

532 *Id.* at 44.

533 *Id.* at 45.

534 *Id.*

535 *Id.* at 47.
where courts hold those who collect and discharge such waters in larger volume to someone else's damage liable for the damage.\textsuperscript{536}

In mining operations, however, pollution also comes from nonpoint sources,\textsuperscript{537} or to put it into the context of state law, from the action of diffused surface waters allowed to run their natural course and thus not covered by the CWA. Therefore we have the extensive provisions in SMCRA that seek to control mining and diffused surface water in such a way as to prevent, in particular, further acidification and sedimentation.\textsuperscript{538}

In \textit{Kentuckians for the Commonwealth, Inc. v. Rivenburgh},\textsuperscript{539} a recent coal surface mining case arising out of Kentucky, the federal district court and Fourth Circuit Court of Appeals dealt with the respective roles of OSM under SMCRA and the Corps of Engineers under the CWA.\textsuperscript{540} The case related to the disposal of a mining operation's excess spoil into bodies of water.\textsuperscript{541} Apparently the only reasoning by which anyone thought the Corps had any role to play was that some excess spoil was disposed of by filling perennial or intermittent streams and that since these were "navigable waters" that were being filled, Corps jurisdiction was implicated.\textsuperscript{542} However, as noted earlier, the Corps, in its early history, was simply exercising a veto power.\textsuperscript{543} As protector of navigation, it could say to anyone either you cannot do this because it would interfere with navigation or, as far as we are concerned as protector of navigation, you can do this because in our judgment it will not interfere with navigability. However, the Corps okay did not give the proponent permission to go ahead unless this was a Corps-sanctioned project to further navigation. As with the four state or local agencies having jurisdiction over the activity proposed in \textit{Zabel v. Tabb},\textsuperscript{544} other persons, governments, or entities with rights in the water might have something to say about whether a project can go forward. In the CWA, Con-

\textsuperscript{536} Davis, \textit{supra} note 279, § 59.02(b)(2), at 739 n.37.

\textsuperscript{537} A contention had been made that mining should be treated as a nonpoint source of pollution, but the courts held that mining created both point and nonpoint sources and that the point source pollution could be regulated under the CWA. \textit{See United States v. Earth Scis., Inc.}, 599 F.2d 368, 371-73 (10th Cir. 1979).

\textsuperscript{538} \textit{See supra} Part IV.C.1.


\textsuperscript{540} \textit{Kentuckians for the Commonwealth}, 204 F. Supp. 2d at 930.

\textsuperscript{541} \textit{Id.}

\textsuperscript{542} \textit{Id.} at 938-39.

\textsuperscript{543} \textit{See supra} text accompanying notes 472-73.

\textsuperscript{544} 430 F.2d 199, 201-02 (5th Cir. 1970). \textit{See supra} text accompanying notes 480-88 for discussion of \textit{Zabel}. 
gress chose to retain for the Corps some of the expanded role that the courts had given the Corps under the Rivers and Harbors Act. Congress made a Rivers and Harbors Act section 10 decision by the Corps as to navigability also conclusive as to water quality, and Congress substituted CWA section 404 as to disposal of dredge and fill for section 13. However, the Corps would have to base its decisions as to the water quality impact of the disposal of dredge and fill material on guidelines promulgated by the EPA. So the question arose in *Kentuckians for the Commonwealth* as to whether the Corps could use this section 404 authority to authorize filling in of perennial or intermittent streams with excess spoil.

As we have seen, SMCRA deals with the water resource in a much larger frame of reference than simply water quality. The coverage in SMCRA includes water quantity and ecosystem protection and maintenance. To the extent that SMCRA would deal exclusively with a water quality issue covered by the CWA, the District of Columbia Circuit Court of Appeals held Congress expressed the intent in SMCRA not to override the CWA. The court relied on the following language: "Nothing in this Act shall be construed as superseding, amending, modifying, or repealing . . . the Federal Water Pollution Control Act . . ., as amended, . . . the State laws enacted pursuant thereto, or other Federal laws relating to preservation of water quality." In so holding, the court looked to legislative history to explain the scope and purpose of this provision and affirmatively rejected a "savings clause" interpretation of the provision in favor of "an absolute prohibition" where there is overlap. The D.C. Circuit observed:

545 See *supra* text accompanying notes 471-88.

546 See *supra* text accompanying note 508.

547 See *supra* text accompanying note 504.


549 See *supra* Part IV.C.2.

550 See *supra* text accompanying notes 349-51. Congress provided that, when the Secretary was promulgating environmental standards under SMCRA, the Secretary was to "obtain[] the written concurrence of the Administrator of the Environmental Protection Agency with respect to those regulations promulgated under this section which relate to air or water quality standards promulgated under the authority of the Federal Water Pollution Control Act, as amended (33 U.S.C. §§ 1151-1175), and the Clean Air Act, as amended (42 U.S.C. §§ 1857 et seq.); . . ." 30 U.S.C. § 1251(a)(B) (2000); see also id. § 1242(d) (2000); *supra* text accompanying note 120.

551 *In re Surface Mining Regulation Litig.*, 627 F.2d 1346, 1366-67 (D.C. Cir. 1980).

552 For an explanation of FWPCA and its relation to the CWA, see *supra* note 456.

553 *In re Surface Mining Regulation Litig.*, 627 F.2d at 1366 (quoting 30 U.S.C. § 1292(a)) (emphasis added). As to the other Federal laws, see *supra* note 457.

554 See *In re Surface Mining Regulation Litig.*, 627 F.2d at 1367. While the circuit court's interpretation of the history can be challenged, because there is at least some evidence that what Congress had in mind was that EPA standards under the CWA would not be relaxed by SMCRA,
Congress certainly recognized in the Surface Mining Act that the EPA's existing regulatory authority under the Federal Water Pollution Control Act was deficient with respect to surface coal mining, in that EPA could not directly regulate discharges from abandoned and underground mines or from nonpoint sources (i.e., discharges not emanating from a "discernible, confined, and discrete conveyance"). Congress also knew that EPA lacked statutory authority to establish standards requiring comprehensive preplanning and designing for appropriate mine operating and reclamation procedures to ensure protection of public health and safety and to prevent the variety of other damages to the land, the soil, the wildlife, and the aesthetic and recreational values that can result from coal mining. . . . The Act gave the Secretary authority to regulate in these areas because the Federal Water Pollution Control Act was silent in regard to them, but where the Secretary's regulation of surface coal mining's hydrologic impact overlaps EPA's, the Act expressly directs that the Federal Water Pollution Control Act and its regulatory framework are to control so as to afford consistent effluent standards nationwide.  

The court's focus, like that of Congress in SMCRA, is on the CWA as a "water quality" statute. Thus, if EPA has set an effluent limitation for a particular pollutant from a point source at five parts per million, the OSM cannot set a point source effluent limitation for that pollutant at either four parts per million or six parts per million even though it is a pollutant arising from or loosed by the mining process, and no matter how scientifically justified they might be. So the SMCRA regulations provide only that "discharges" from areas disturbed by surface mining activities are to meet the Clean Water Act standards set forth by EPA.  

In the course of repromulgating the buffer zone regulations in 1983, OSM explained in some detail what it was doing and why:

OSM recognizes that State and Federal water-quality standards ordinarily do not regulate water quantity. However, instead of deleting the word "quantity" in the final rule, OSM separated the "quantity" standard from the applicability of State and Federal water quality standards. Under final section 816.57(a)(1), the regulatory authority will consider impacts on streamflow in

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555 Id.
556 See supra text accompanying note 553.
making the requisite buffer-zone determination. The phrase "and related environmental resources" has been added to the language of the final rule to indicate that regulatory authorities will be allowed to consider factors other than water quantity and quality in making buffer-zone determinations. This revision will provide a more accurate reflection of the objectives of Sections 515(b)(10) and 515(b)(24) of the Act.  

Because SMCRA prohibits filling of streams from quantity and ecosystem perspectives and not just a quality or pollution control perspective, the CWA would not pre-empt SMCRA in this respect. Only if surface waters could be filled with excess spoil from mining might the Corps have a role to play. Then the question raised in the Kentuckians for the Commonwealth case as to the definition of fill would be relevant. However, as discussed in this article, SMCRA prohibits such filling. Ultimately, questions arising under CWA section 404 raise water quality issues stemming from the addition of pollutants. As Congress states in SMCRA, it views the CWA as a federal law "relating to preservation of water quality." As Congress states in the CWA, a section 404 permit is "conclusive as to the effect on water quality of any discharge resulting from any activity subject to section 10 of the Act of March 3, 1899."  

SMCRA does give the Chief of Engineers a specific role to play. That role relates to coal mine waste standards and criteria for "new and existing coal mine waste piles." Those standards are to conform to the standards used by the Chief "to insure that flood control structures are safe and effectively perform their intended function."  

VII. CONCLUSION  

This Article set out primarily to review the water specific provisions in SMCRA to determine their coverage, how they relate to state water law in the Appalachian region, and how they relate to the Clean Water Act. Several conclusions are in order.  

First, the water provisions in SMCRA can further the general goal of SMCRA to keep the mined land area available as an economic resource. Primarily, SMCRA is set up to accomplish this through environmental regulation,

562 Id.
563 Id.
requiring restoration of the land after mining and subjecting the mining process to environmental controls in order to facilitate restoration. The water provisions in SMCRA contribute in three ways toward this goal. They seek to prevent water pollution, particularly from acid mine drainage and sedimentation; they seek to preserve water quantity; and they seek to protect the water-related ecosystem that the water resource supports.

Second, while the CWA has primacy in terms of the water pollution that it deals with, the CWA has gaps that SMCRA seeks to fill. The CWA generally covers only discharges from point sources into navigable waters. Coal mines can contain point sources and to that extent coal mines are regulated by EPA under the CWA. However, the CWA does not cover pollution from nonpoint sources; nor does it protect groundwater. Even some surface waters may not be protected by the CWA. SMCRA adds to water pollution control with provisions that seek to prevent diffused surface waters from becoming sources of pollutants to surface waters and groundwater. However, except to the extent that SMCRA contains bright line standards, the CWA does still play a role. SMCRA cannot protect water to a higher quality standard than what is set by EPA under the CWA.

Third, as noted above, the environmental provisions in SMCRA relating to water go beyond simply dealing with pollution and also seek to preserve water quantity and water-related ecosystems. To do this SMCRA distinguishes among the three common-law categories of water: surface water, diffused surface water, and groundwater. Under SMCRA surface water receives the greatest ecosystem protection. Essentially, OSM has determined that surface waters are not to be disturbed by mining, although they can be moved out of harm’s way, if for example, a coal deposit that is being mined extends under a watercourse. Because the CWA deals only with water quality and not with quantity or ecosystem protection (other than through destruction of quality), those aspects of SMCRA are not subject to control under the CWA. Any effort to enlarge the Corps of Engineers role beyond the quality role it plays under the CWA to give it jurisdiction as to quantity and ecosystem protection would appear to be ultra vires, certainly not contemplated in SMCRA.

Fourth, the CWA goes beyond where state law had progressed in 1972, but clearly the states were moving to a full regulatory system in the water quality area. Thus regulation of coal mining through the CWA should not be a significant change. SMCRA, however, does place restrictions on the use or abuse of the water resource that were not necessarily there under state law. Fewer states were moving toward a regulatory system as to use of water, although several Appalachian region states have now done so. However, there is some evidence that the common law was moving toward considering public interest factors in water allocation. Regardless, Congress did seek to protect water rights that had been acquired under state law and to some extent protect water supplies that were being used and were affected by the mining process. However, SMCRA is not clear as to the scope of the “rights” that were to be protected. Beyond trying to determine water “rights,” the use of state law to understand the
common-law categorization of water resources is probably the most useful journey into state water law in applying SMCRA.