Order Code RS21421
Updated October 11, 2007

CRS Report for Congress

# Mountaintop Mining: Background on Current Controversies

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## Summary

Mountaintop removal mining involves removing the top of a mountain in order to recover the coal seams contained there. This practice occurs in several Appalachian states. It creates an immense quantity of excess spoil (dirt and rock that previously composed the mountaintop), which is typically placed in valley fills on the sides of the former mountains, burying streams that flow through the valleys. Critics say that, as a result of valley fills, stream water quality and the aquatic and wildlife habitat that streams support are destroyed by tons of rocks and dirt. The mining industry argues that mountaintop mining is essential to conducting surface coal mining in the Appalachian region and that surface coal mining would not be economically feasible there if producers were restricted from using valleys for the disposal of mining overburden. Mountaintop mining is regulated under several laws, including the Clean Water Act. This report provides background on regulatory requirements, controversies, and legal challenges to Clean Water Act regulation of mountaintop mining. Congressional attention to these issues also is discussed. It will be updated as warranted by events.

## What Is Mountaintop Mining?

The environmental, economic, and societal impacts of the surface mining practice termed mountaintop removal mining have attracted considerable attention. This type of surface mining occurs in an area of approximately 12 million acres located in portions of Kentucky, West Virginia, Virginia, and Tennessee.

As its name suggests, mountaintop removal mining involves removing the top of a mountain in order to recover the coal seams contained in the mountain. Explosives are used to break the mountain's rock, and massive earth-moving equipment, often including equipment called draglines, removes the spoil, i.e., the dirt and rock that composed the mountaintop over or between the coal seams. While federal law calls for excess spoil to be placed back in the mined areas — returning the lands to their approximate original contour (AOC) — that result ordinarily cannot be accomplished with mountaintop mining because broken rock takes up more volume than did the rock prior to mining and because

there are stability concerns with the spoil pile. Mountaintop removal creates an immense quantity of excess spoil, which is typically placed in valley fills on the sides of the former mountains. One consequence is that streams flowing through the valleys are buried.

All types of surface and underground coal mining in Appalachia generate excess spoil fills due to the increased volume of broken rock, limitations on the steepness and height to which broken rock may be placed to achieve a stable slope, and the steep topography of the region. Large mines may be surrounded by several valley fills. Depending on the local topography and the profile of those valleys, a single fill may be over 1,000 feet wide and over a mile long.

While mountaintop removal mining has been practiced in some form since the 1960s, it became a prevalent coal mining technique in parts of central Appalachia during the 1990s for several reasons. First, as the demand for electricity increased, so has the demand for the relatively clean-burning, low-sulfur coal found in Appalachia. Second, coal supplies near the surface have been significantly depleted. Third is the development of large surface mining equipment (draglines) capable of moving over 100 cubic yards of earth in a single scoop.

For many years, excess spoil from coal mining was generally placed in the extreme headwaters of streams, affecting primarily ephemeral streams that flow intermittently only in direct response to precipitation in the immediate watershed. Because smaller upstream disposal sites are exhausted and because of the increase in mountaintop mining activity, today the volume of a single stream fill can be as much as 250 million cubic yards. As a result, streams are eliminated, stream chemistry is harmed by pollutants in the mining overburden, and downstream aquatic life is impaired. From 1985 to 2001, an estimated 724 stream miles in West Virginia, Kentucky, and parts of Virginia and Tennessee were covered by valley fills, and 1,200 miles of headwater streams were directly impacted by mountaintop mining activities.[1]

**Regulatory Setting.** Regulation of valley fills associated with mountaintop removal mining is primarily under the authority of two federal statutes, the Surface Mining Control and Reclamation Act (SMCRA, 30 U.S.C. §1201) and the Clean Water Act (CWA, 33 U.S.C. §1252), and involves several federal and state agencies.

SMCRA addresses the necessary approvals for surface mining operations, as well as inspection and enforcement of mine sites until reclamation responsibilities are completed and all performance bonds are released. SMCRA permits may be issued by the Office of Surface Mining (OSM), U.S. Department of the Interior, or by qualified states, only if it has been shown that the proposed mining activities will satisfy general performance standards applicable to all surface coal mining operations.[2] Among those standards, SMCRA addresses disturbances at the mine-site and in associated offsite areas and AOC requirements, as well as the quality and quantity of water in surface and ground water systems both during and after surface coal mining operations.

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[1] U.S. Army Corps of Engineers et al., "Mountaintop Mining/Valley Fill Draft Environmental Impact Statement," 2003, pp. ES-3-ES-4.

[2] In the Appalachian states where mountaintop mining occurs, the SMCRA regulatory program has been delegated by the federal government to state agencies, except in Tennessee.

The CWA prohibits the discharge of any pollutant from any point source into the waters of the United States, except in compliance with a permit issued under one of the two permit programs established by the statute. The two permit programs are the National Pollutant Discharge Elimination System (NPDES) program, administered by the Environmental Protection Agency (EPA) under CWA Section 402, and the dredge and fill permit program administered by the U.S. Army Corps of Engineers (Corps) under CWA Section 404.[3] The two permit programs employ different regulatory approaches.

The NPDES program is focused primarily (but not exclusively) on discharges such as wastewater discharges from industrial operations and sewage treatment plants. Section 402 permits must include limitations on the quantities, rates, and concentrations of pollutants that reflect treatment with available pollution control technology and any more stringent limitations necessary to meet state-established water quality standards for the receiving water. The standard for issuance of a Section 402 permit is compliance with pollutant limitation and control provisions in the act.

The Section 404 permit program, which applies to the discharge of dredged or fill material, calls for the application of a set of environmental guidelines promulgated by EPA in conjunction with the Corps. These guidelines are intended to provide a comprehensive means of evaluating whether any discharge of fill is environmentally acceptable. The standard for issuance of a 404 permit is consideration of the full public interest by balancing the favorable impacts of a proposed activity against the detrimental impacts to reflect the national concerns for both the protection and utilization of important resources. A discharge is categorically prohibited if it would significantly degrade water quality. In addition, no discharge may be allowed if there is a less environmentally damaging practicable alternative. Where there is no other alternative, the discharge may be allowed if the applicant has taken all practicable steps to minimize the amount of material discharged and to compensate for unavoidable impacts through mitigation.

Section 404 permits consist of two basic types: Individual permits for a particular site and nationwide (general) permits for categories of discharges that have no more than minimal adverse impacts, individually and cumulatively, on the waters of the United States. If the discharge may have more than minimal impacts, an individual permit is required. Nationwide permits cover approximately 74,000 activities annually (about 90% of total Corps permits) and involve less regulatory burden and time than authorization by individual permits. Disposal of excess overburden associated with mountaintop removal mining has generally been permitted under Nationwide Permit 21 (NWP 21), which authorizes discharges from surface coal mining activities that result in no more than minimal impacts (site-specifically and cumulatively) to the aquatic environment.[4]

The U.S. Fish and Wildlife Service (FWS) also has responsibilities relevant to mountaintop removal mining. FWS implements and enforces the Endangered Species Act (35 U.S.C. §1531) and the Fish and Wildlife Coordination Act (16 U.S.C. §661), and

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[3] The CWA authorizes delegation of both of these permit programs to qualified states. The NPDES program has been delegated to 45 states, including each of the Appalachian states. The Section 404 program has been delegated to two states, Michigan and New Jersey.

[4] For additional information, see CRS Report 97-223, *The Army Corps of Engineers' Nationwide Permit Program: Issues and Regulatory Developments*, by Claudia Copeland.

under both laws, agencies proposing projects affecting U.S. waters are required to consult with FWS to ensure that fish and wildlife conservation and impacts on threatened or endangered species are considered. Coordination with FWS is required for both SMCRA and CWA permits.

## Criticism and Legal Challenges to Mountaintop Mining

Because of the increase in valley fill disposal of mountaintop mining overburden in areas of Appalachia, the practice has drawn public attention and criticism. Critics says that, as a result of valley fills, streams and the aquatic and wildlife habitat that they support are destroyed by tons of rocks and dirt. Flow regimes are altered, increasing the likelihood and severity of floods, and the water quality downstream from fills also is significantly degraded. In addition, mountaintop removal can crack the walls and foundations of nearby homes; cause dust, noise and vibration from blasting; collapse drinking water wells; destroy nearby streams for fishing, hiking, swimming or aesthetic pleasure. It also has forced the relocation of whole communities.[5] Environmental groups argue that the practice of authorizing valley fills under Section 404 is unlawful because mining overburden is waste material which pollutes and destroys waterways, and impacts are far more than minimal, which is the standard for coverage by a nationwide permit.

The mining industry argues that mountaintop mining is essential to conducting surface coal mining in Appalachia. The poor stability of the soil surrounding coal deposits in this region makes it impossible to mine the coal using underground mining techniques. Waste disposal in valley fills is a necessary part of that activity because of the steep topography of the region, and they assert that mountaintop mining would not be economic or feasible if producers were restricted from using valleys for the disposal of mining overburden. Requiring Section 402 permits would effectively prohibit a broad range of mining activities which have been allowed by longstanding practice, they say.

Critics have been using litigation to challenge the practice. In 1998, a West Virginia citizen group sued the state of West Virginia and the Corps for failure to prevent or enforce against environmental violations caused by mountaintop removal practices. The principal claim under SMCRA was that the state was failing to enforce OSM's buffer zone rule, which protects intermittent and perennial streams from disturbance by coal mining activities. In addition, the lawsuit asserted that the Corps had been granting permits that allow disposal of waste in waters of the United States, contrary to the CWA, through permits under the nationwide permit program that have greater than minimal adverse effects, individually and cumulatively. Some of the claims were settled when the federal agencies agreed to complete a programmatic Environmental Impact Statement (PEIS) of the effects of mountaintop removal mining. The Corps also agreed that proposed valley fills in West Virginia in watersheds of at least 250 acres must be permitted by individual, not nationwide, permits.

The remaining claims were addressed in an October 1999 ruling which held that disposal of mining spoil in valley streams violates federal and state mining rules and the CWA (*Bragg v. Robertson*, 72 F.Supp.2d 642 (S.D.W.Va. 1999)). Under the ruling,

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[5] Daniel L. Rosenberg, "Mountaintop Mining and Proposed Rule Change Will Waste Clean Water Act," *National Wetlands Newsletter*, vol. 22, no. 4, July-August 2000, p. 12.

mining spoil was reclassified from "dredge and fill material," requiring a CWA Section 404 permit, to "waste material" that is subject to CWA Section 402 permit requirements, thus raising the regulatory hurdles for disposing of mining waste.

Upon appeal, the district court ruling was overturned (*Bragg v. Robertson*, 248 F.3d 275 (CA4 2001)) in a decision that dealt with jurisdiction and state sovereignty issues. The court held that the stream buffer regulation at issue was, in fact, a matter of state law, not federal law and, thus, the case should not have been brought in federal court. The Clinton Administration had sided with the industry by appealing the district court's finding that mountaintop mining must be regulated under CWA Section 402, but it concurred with the related finding, supported by environmentalists, that the activity violates stream buffer zone requirements under SMCRA, which were issued in 1983. In January 2002, the Supreme Court declined to hear a challenge to the 4th Circuit decision.

In October 2005, the Corps, EPA, and other federal agencies released a final PEIS on mountaintop mining, as promised in the 1999 partial settlement of *Bragg*. It identified three alternatives for improving coordination of regulatory efforts to limit the negative impacts of mountaintop mining. Under the preferred alternative, OSM, the Corps, EPA, and state agencies would determine the size, number, and location of valley fills for a proposed operation, under a joint permit application integrating the CWA and SMCRA programs. The Corps would make case-by-case determinations whether a project would be covered under NWP 21 or under an individual Section 404 permit. More than 70,000 public comments were submitted on the draft PEIS, issued in May 2003. Industry groups favored continued use of general permit authorizations, while environmental groups said that the preferred alternative fails to place adequate limits on mountaintop mining and valley filling. A number of comments were critical that all of the alternatives were process alternatives, and none would minimize the environmental impacts from valley fills. The agencies responded that the alternatives were appropriate for a programmatic EIS and that they would provide increased protections for the human and natural environments. A number of changes to agency rules, policy, and guidelines will follow. For example, the draft PEIS called for OSM to make changes to the stream buffer zone rule, authorized under SMCRA, to improve consistency with the Clean Water Act, and OSM proposed changes to that rule in 2004. However, OSM subsequently decided to prepare a new PEIS and a revised rule, both of which were released in August (72 *Federal Register* 48890, August 24, 2007). Both industry and environmental groups that studied the proposal reportedly said that it does little to change the existing practice of disposing mountaintop mining spoil into valleys and streams.

A second lawsuit challenging issuance of a specific permit under the nationwide permit program for a mountaintop mining operation in Kentucky was decided in May 2002 (*Kentuckians for the Commonwealth v. Corps of Engineers*, 204 F.Supp. 2d 927 (S.D. W.Va. 2002)). The federal district court ruled that the disposal of waste from mountaintop mining into U.S. waters is not allowed under Section 404, and the court permanently enjoined the Corps from issuing Section 404 permits for the disposal of mountaintop mining overburden where the purpose is solely to dispose of waste. In January 2003, a federal court of appeals ruled that the district court's action was too broad and lifted the injunction prohibiting the Corps from issuing Section 404 permits for disposal of mountaintop mining waste (*Kentuckians for the Commonwealth v. Rivenburgh*, 317 F.3d 425 (CA4 2003)).

Citizen groups also have filed lawsuits seeking generally to halt the Corps' use of Nationwide Permit 21 for mountaintop mining operations. In the first such case, a federal district court ruled that NWP 21 violates the Clean Water Act by authorizing activities that have more than minimal adverse environmental effects. The court enjoined the Corps from using NWP 21 to authorize new mountaintop mining in southern West Virginia and ordered the Corps to revoke previous authorization for 11 operations. On appeal, the judgment of the district court and the injunction against NWP 21 were vacated when the court of appeals found that the Corps had complied with the Clean Water Act when it promulgated NWP21 (*Ohio Valley Environmental Coalition v. Bulen*, 429 F.3d 493 (CA4 2005)). In January 2005, three groups filed a lawsuit to extend the West Virginia federal district court decision to Kentucky valley fills (*Kentucky RiverKeeper v. Rowlette*, E.D. Kent., No. 05-181). How the court of appeals' ruling in the related case will affect this lawsuit, which is still pending, is unknown for now.

## Administrative Actions and Congressional Activity

Additional controversies arose because of a proposal by EPA and the Corps in 2000 to revise regulations that implement CWA Section 404 by redefining the terms "fill material" and "discharge of fill material." One result of the proposal would be regulatory definitions more consistent with the Administration's position in the then-ongoing *Bragg* litigation, namely its view that regulating mountaintop removal mining under CWA Section 404 is not inconsistent with that act. This proposed rule was not finalized before the Clinton Administration left office but was finalized by the Bush Administration, substantially as proposed, in May 2002.[6]

The revised rules were intended to clarify the regulatory definition of fill material — which determines whether the activity is subject to Section 404 permit requirements or more stringent Section 402 requirements — by replacing two separate and inconsistent definitions with a single, common definition to conform with long-standing Corps and EPA practice in regulating surface mining activities. According to the Administration, the previous definitional differences had led to considerable confusion, as reflected in part in the *Bragg* and *Kentuckians for the Commonwealth* lawsuits, but that the changes were not driven solely by concerns over regulating mountaintop mining practices. Environmental groups continue to contend that the disposal practice is unlawful under the Clean Water Act, and that the revised EPA and Corps rules allow for inadequate regulation of disposal activities, including coal mining waste.

Some congressional interest in these issues has been evident. In June 2002, following issuance to the regulatory definition of "fill material," the Senate Environment and Public Works Committee held an oversight hearing to examine the rule, receiving testimony from Administration, mining industry, and public witnesses. In the 110th Congress, legislation to reverse the 2002 revised regulations has been introduced (H.R. 2169), but no further action has occurred.

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[6] Department of the Army, Corps of Engineers, and Environmental Protection Agency, "Final Revisions to the Clean Water Act Regulatory Definitions of 'Fill Material' and 'Discharge of Fill Material,'" 67 *Federal Register*, No. 90, May 9, 2002, pp. 31129-31143. For additional background information on the 2002 rule, see CRS Report RL31411, *Controversies over Redefining "Fill Material" under the Clean Water Act*, by Claudia Copeland.