

**TESTIMONY OF
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U.S. ENVIRONMENTAL PROTECTION AGENCY MID-ATLANTIC REGION
BEFORE THE
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
SUBCOMMITTEE ON WATER AND WILDLIFE
U.S. SENATE**

JUNE 25, 2009

Mr. Chairman and Members of the Subcommittee, I am John “Randy” Pomponio, Director of the Environmental Assessment and Innovation Division at the United States Environmental Protection Agency (EPA) Mid-Atlantic Region in Philadelphia, Pennsylvania. Thank you for the opportunity to address the Subcommittee on EPA’s efforts to protect and restore the water quality and water resources affected by the surface mining of coal, including mountaintop removal and valley fill activities. EPA plans to more fully use its authorities under the Clean Water Act and the National Environmental Policy Act (NEPA), to address the impacts of this type of mining activity on the aquatic and forest systems that provide invaluable ecosystem services to Appalachia and to the waters people use for drinking and fishing.

Our discussion here today provides us with the opportunity to talk about what we at EPA have learned from past experience. Over the past three decades, EPA, our state partners and other

concerned stakeholders have begun to make a positive impact on the legacies of abandoned mine lands and acid mine drainage. Over \$8 billion has been paid by coal companies into the Abandoned Mine Lands Fund, managed by the Department of the Interior's Office of Surface Mining. These funds are being spent to address environmental degradation and public health risks caused by past mining practices.^[1] The Office of Surface Mining regulates this industry. EPA has an oversight role for water quality under the Clean Water Act. The Army Corps of Engineers regulates discharges of fill material into waters associated with these activities. The improved use of our authorities for regulating current surface coal mines through transparent and science-driven processes can help us avoid similar consequences from current and future mining activities. EPA is excited to work with other Federal agencies, as announced in our joint June 11 Memorandum of Understanding, to strengthen the regulation and review of these mining activities.

Surface Coal Mining in Central Appalachia

According to information submitted to the Department of Energy by coal companies, surface mining accounted for 40 to 45 percent of coal production in Central Appalachia during 2007.^[2] Surface mining from the Central Appalachia Region produced approximately 10 percent of the nation's coal in 2007.^[3] Surface coal mining, including mountaintop removal, in the steep-slope terrain of Appalachia very often employs valley-fill techniques as a means to dispose of the overburden (excess material) generated during mining activities. Such valley fills are constructed by placing overburden in existing stream valleys, which directly buries some stream segments and can have substantial downstream environmental impacts. The environmental impacts of the mine footprints and these valley fills are of the utmost concern to EPA.

Valley fills associated with surface coal mining buries streams and degrades water quality.

Over the years, the state and federal agencies have worked hard to address water quality impacts associated with valley fills. However, between 1992 and 2002, more than 1,200 miles of Appalachian streams have been filled at an average rate of 120 miles per year by ongoing surface mining practices.^[4] Recent studies of streams below current and past mines have shown that coal mining can result in long-lasting impairments to aquatic biota. These impairments, recently better described as part of a more complete body of scientific studies, were not necessarily considered when undertaking prior permit evaluations under the Clean Water Act Section 404 program. An EPA scientific study released in July 2008 shows that more than 63 percent of the streams sampled below mountaintop coal mining operations exhibit such impairments.^[5] In some large watersheds, such as the Coal River in West Virginia, more than half of the streams are impaired.

It is critically important that EPA re-invigorate its oversight and review role for the delegated 401 and 402 programs and address these important water quality issues before section 404 permit decisions are made.

Valley fills associated with surface coal mining increase the total loading of trace metals and toxic salts (sulfates, magnesium, bicarbonate, and additively--total dissolved solids) to downstream aquatic communities. These dissolved ions are not readily sequestered by the surrounding geology and may ultimately emanate from the fills for decades.^[5] Certain macroinvertebrates are highly sensitive and thus disappear from the streams draining from the

valley fills. This impairs the use of the streams and ultimately leads to listing of these streams as “impaired water bodies” in EPA’s water quality reports required under Section 305 (b) of the Clean Water Act.

Concentrations of selenium, a heavy metal naturally found in rock, can also be elevated in streams draining valley fills. Often these concentrations result in exceedances of State and Federal water quality standards for aquatic life. Deformities in fish have been observed in reservoirs downstream of coal mining operations where selenium is a known pollutant. In peer-reviewed scientific studies, high concentrations of selenium in fish tissue have been linked to physical deformities and reproductive failure.^[6]

Dissolved and particulate organic carbon fuels the food web of headwater streams and this nutrient energy cascades downstream. Healthy forest soils and streamside vegetation supply food webs with this high-quality energy source that further delivers high-quality food to downstream communities of other consumers, such as fish and humans. Mining operations and associated valley fills essentially rob downstream aquatic communities of this energy source, damaging the food webs that serve to purify freshwater for aquatic life and human consumption.

Valley fills associated with surface coal mining can destroy forests, habitat, and other important ecosystems.

The southern Appalachians are among the richest ecosystems in the United States. They represent a bounty of timber, wildlife, and recreational assets that deserve their world-wide recognition. The forests of this area have been described as the largest remaining contiguous

temperate deciduous forest in the world.^[7] One area of roughly 13,000 square miles centered in western Virginia contains 144 imperiled species, many of which rely on the region's rivers and streams.^[8] The southern Appalachians are legendary for their diversity of freshwater organisms such as fishes and mussels.

EPA's 2002 Landscape-Scale Cumulative Impact Study modeled terrestrial impacts based on past surface mine permit data. These data provide a retrospective examination of the impacts to forest that occurred over the 11-year period from 1992 to 2002. The Study estimates that 595 square miles (380,547 acres) of the forest environment (vegetation and soils) in the study area will be cleared due surface coal mining during this 11-year period. This represents 3.4 percent of the forest area that existed in 1992.^[9] Based on a 2003 analysis, the impacts to forest and forest soils have subsequently been projected over the next 10 years. For the entire 22-year period from 1992 to 2013, the estimated forest clearing in the study area would be 1,189 square miles (761,000 acres) or 6.8 percent of the forest that existed in 1992.^[9] Should these forest not be restored, invaluable water quality and ecological services will be lost.

Forest losses of this magnitude, although largely temporary, are not inconsequential. In addition to the popularly appreciated wildlife, recreational, and timber resources associated with forests systems, many ecological services can be attributed to forest systems. We are just beginning to understand and assign value to these ecological services. For example, forests are known to be natural areas of carbon sequestration. The loss of 1,189 square miles of forest would conservatively equate to the loss of 1.7M tons of carbon dioxide sequestration potential per year or the equivalent of taking 300,000 cars off the road.^[10] Additionally, forests dampen flooding

potential and act as natural nutrient sinks. One study estimates that forest cover of 1,189 square miles provide approximately \$138 million in nutrient-cycling and waste treatment services.^[11]

Valley fills associated with surface coal mining should be assessed on a cumulative and watershed basis.

The most critical aspect of regulating and assessing the impacts of future mines is effectively addressing the issue of cumulative impacts. The rapid cumulative degradation of streams and loss of forest habitat may render some watersheds—and indeed entire eco-regions-- unable to supply the ecological services that we as a society value and rely upon. These situations should be discovered and addressed through watershed and landscape analyses not currently performed in the region. Collaborative efforts such as the Clinch/Powell Memorandum of Understanding between EPA’s Mid-Atlantic and Southeast Regions, the Commonwealth of Virginia, and the State of Tennessee, and supported by OSM, attempt to address important broad-scale watershed issues. The Mid-Atlantic Highlands Action Program is another collaborative initiative designed to protect and restore ecological services while providing green jobs. The program has been endorsed by the Governors of Virginia, West Virginia, Pennsylvania, and Maryland and could be retooled and chartered to manage the environmental and economic issues facing this part of Appalachia.

Building on these existing programs, Federal agencies are also looking to help provide clean energy jobs and to target economic recovery activities in Appalachia in order to help diversify and strengthen the Appalachian regional economy. As part of the agencies’ recent Memorandum of Understanding, EPA and other Federal agencies – coordinating with the Council on

Environmental Quality – will be working with appropriate regional, state, and local entities to help stimulate clean energy and green jobs development. This initiative will encourage better coordination among existing Federal economic recovery efforts in Appalachia.

The mining industry employs many best management practices in Appalachia to minimize impacts to waters of the United States. These practices must be expanded, improved, and enforced. Most are generally designed to control water quality and quantity through the design and location of sediment control structures, timely backfilling, grading and re-vegetation of the operation areas, and stabilization of fill material to minimize earth disturbances.

EPA welcomes the opportunity to work with the coal mining industry to find additional best management practices and best available technologies to further minimize the environmental impacts associated with Appalachian surface mining. Examples include such methods as further backstacking overburden and waste material onto the mine site or adjacent sites and going beyond AOC/AOC+ requirements where appropriate from a mining safety and land stability standpoint. Expanding on the special handling requirements under SMCRA, to include additional water quality protective measures should also be explored. These include isolating materials that produce total dissolved solids and component ions; leaving some streams undisturbed to provide a source of clean water to downstream waters; and, where necessary, installing appropriate water treatment facilities. We will be working with the Department of the Interior and the Corps of Engineers to ensure these best management practices are employed in mining permit applications and evaluated in the course of the agencies' permit reviews.

Mitigation practices employ a variety of methods including enhancement, restoration and creation of streams and wetlands to compensate for the unavoidable impacts to waters of the United States. In the aquatic environment, mitigation should compensate for the physical, chemical, and biological functions, of the streams and/or wetlands being impacted. Often the mitigation required is based on linear footage of stream channel or wetland acreage proposed to be impacted. The applicant will propose to work downstream of the mine site to repair slumping banks; to reconnect a stream to its floodplain; and/or, create or enhance riparian buffer zones.

In the context of surface coal mining, mitigation generally has focused on the physical function of the stream. Mitigation goals should be to match the lost flow regime (frequency, duration and seasonality of flow annually); provide the same structural habitat (riffle pool, shading, etc.); meet the same water chemistry characteristics (hardness, pH, conductance); and, support the same biologic communities (macroinvertebrates, fish, etc.) within the watershed where the proposed impact is occurring. Before the end of 2009, EPA and the Corps will be evaluating the agencies' existing mitigation guidance to better incorporate these considerations within mitigation projects proposed for Appalachian surface coal mines.

EPA's Role in Surface Coal Mining

EPA's responsibilities to address surface coal mining activities under the Clean Water Act, the Clean Air Act and NEPA will be discussed here. The Clean Water Act Section 404 program is jointly implemented by the U.S. Army Corps of Engineers and the EPA. The Clean Water Act Section 404 responsibilities for the EPA Mid-Atlantic Region lie within my organization, the

Environmental Assessment and Innovation Division. EPA's role in the 404 process includes developing, with the Corps of Engineers, the substantive environmental criteria used in evaluating a permit application, known as the 404(b)(1) Guidelines, and reviewing and commenting upon permit applications. In addition, Section 404(c) of the Clean Water Act gives EPA the authority to prohibit the discharge of dredged or fill material at specified locations. This authority is sometimes referred to as a "veto."

The Section 404(b)(1) Guidelines lay out a three-step sequencing process to protect waters of the United States. Through an alternatives analysis and management practices, a project should first avoid impacts to "waters of the United States to the extent practicable." The project should then minimize unavoidable impacts if practicable, and ultimately provide compensation for unavoidable impacts to waters of the United States. The Section 404(b)(1) Guidelines also provide that no discharge of dredged or fill material shall be permitted if it causes or contributes to a violation of any applicable State water quality standards, or if it will cause or contribute to a significant degradation of waters of the United States, individually or collectively. The Corps defers to the Clean Water Act 401 certification process to determine compliance with water quality standards and takes into account compensatory mitigation in determining whether there is significant degradation.

In addition, EPA has authorities under the National Pollutant Discharge Elimination System (NPDES) pursuant to Section 402 of the Clean Water Act for other types of discharges from surface mining operations. Discharge ponds collect stormwater that comes in contact with overburden, exposed coal, and other materials at the mining sites, and water from buried streams

that filters through the fill. Most states have been authorized to issue permits for such discharges under the NPDES program, but EPA retains authority to review and, if necessary, object to draft permits and to enforce violations.

EPA also has a role through NEPA. Since the Clean Water Act Section 404 process results in a Federal permit authorizing the placement of fill material into waters of the United States, that permit constitutes a Federal action requiring compliance with the procedures established by NEPA. Pursuant to Section 309 of the Clean Air Act and NEPA, EPA has a responsibility to review and comment on the environmental impacts of proposed Federal actions. The Corps is the lead agency under NEPA for Section 404 Clean Water Act permits.

The design, interpretation, and enforcement of our current tools at all levels of government can be improved to better achieve environmental and public health goals.

“The goal of protecting water quality, plant and animal habitat, navigable waterways, and other downstream resources is not achievable without the careful protection of headwater streams.” [12]

Today, both the Surface Mining Control and Reclamation Act (SMCRA) and the Clean Water Act serve to regulate surface coal mining in Appalachia. Despite these regulatory reviews and the addition of measures in permits to minimize environmental impacts from surface coal mining, many unintended and well-documented environmental consequences continue to occur from mining operations with valid permits.

EPA and Federal agencies have announced coordinated steps to help eliminate or minimize the environmental consequences described above.

EPA will be taking several steps before the end of the year to improve its oversight of mountaintop mining activities as part of an interagency Memorandum of Understanding announced on June 11. EPA, the Corps of Engineers, and the Department of the Interior will be taking a series of both short- and longer terms actions under the CWA and SMCRA to improve the regulation of these mining practices under existing statutory authorities. I would like to summarize a few of these actions in which EPA will play a significant role.

As part of this MOU, EPA and the Corps of Engineers will be developing new guidance specific to Appalachian surface coal mining on applying the 404(b)(1) Guidelines to pending permit applications. Work on these guidelines and on enhanced mitigation guidance will be coordinated with the U.S. Fish and Wildlife Service. EPA will also be looking to improve oversight over state NPDES permits and water quality certifications issued for discharges from valley fills and will be assisting states in their ongoing management of these CWA programs.

We look forward to working with the Corps of Engineers to incorporate these considerations within permit reviews to minimize adverse environmental consequences and more fully exercise our Clean Water Act and NEPA responsibilities.

Thank you, Mr. Chairman for giving me the opportunity to testify today. EPA understands the importance of domestic coal to our energy independence goals and to our nation's economy. We want to ensure that this valuable resource is extracted in the least intrusive manner to the

environment. We look forward to working with you and your subcommittee to make a positive impact on this important issue.

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