

## EXECUTIVE SUMMARY

The Spruce No. 1 mountaintop removal coal mine in Logan County, West Virginia, is one of the largest mountaintop removal mines ever proposed in Central Appalachia. Currently, Logan County, located in the southwestern region of West Virginia, is one of the most heavily surface-mined counties, ranking second in both total coal production and production from surface mining in the state.

As a result of the projected impacts to public health, water quality, and forest and wildlife habitat, the United States Environmental Protection Agency (USEPA) is currently considering a veto of the Arch Coal Spruce No. 1 mountaintop removal (MTR) permit. Thus far, the USEPA has exercised its veto authority under the Clean Water Act Section 404(c) by proposing “to prohibit, restrict, or deny the specification, or the use for specification” of three sites that Arch Coal has requested to use for the disposal of fill material associated with the Spruce No. 1 mine: the Pigeonroost Branch, Oldhouse Branch, and the remainder of Seng Camp Creek streams.<sup>1</sup> The USEPA published its Proposed Determination for the Spruce No. 1 mine on April 2, 2010, and a Final Determination is expected by the end of the calendar year.

In April 2010, USEPA issued new guidelines for surface mining permits. The new guidance stated that when Regional Offices review permit applications they should verify that the permit is consistent with Clean Water Act statutes and USEPA regulations. Regional Offices must also show that mining activities will not cause or contribute to violations of water quality standards, contaminate drinking water supplies, or add toxic pollutants that kill or impair stream life. The USEPA Proposed Determination of the Spruce No. 1 mine from April 2 details various ways that the mine permit would, according to the science and analysis of the permit, violate the agency’s new guidelines: elevated conductivity levels (above the proposed maximum of 500  $\mu\text{S}/\text{cm}$ ); total dissolved solids in the receiving streams and downstream waters; discharge of toxic levels of selenium; and possible promotion of conditions that would support the growth of toxic golden algae. Each of these potential impacts would, in USEPA’s own words, “cause or contribute to significant degradation of water quality” and have “unacceptable adverse impacts [on] fish and wildlife resources.”

This case study finds that the environmental impacts of the Spruce No. 1 mine would result in the destruction of 2,278 acres of temperate rainforest and the construction of six valley fills, which would permanently bury 7.5 miles of streams in the Spruce Fork sub-watershed.<sup>2</sup> In addition, for a region already devastated by surface mining, the Spruce No. 1 mine would contribute severely to the cumulative impacts on water quality and loss to forest and wildlife habitat in Logan County.

Perhaps of greatest importance for consideration in determining the permit’s ability to meet USEPA guidelines are the existing and potential cumulative impacts of surface mining and the Spruce No. 1 mine on the Spruce Fork sub-watershed. By the time all mining would be completed for the Spruce No. 1 mine, surface mining operations and associated valley fills would directly and permanently impact—or fill—approximately 63 miles of streams, for a total cumulative impact of 22% of the Spruce Fork sub-watershed.

<sup>1</sup> Seng Camp Creek is partially filled, while the Pigeonroost Branch and Oldhouse Branch streams have yet to be impacted. Seng Camp Creek was allowed to be minimally filled as the result of an agreement made in 2007. Pigeonroost Branch and Oldhouse Branch are providing clean freshwater dilution to Spruce Fork.

<sup>2</sup> The Spruce Fork sub-watershed is part of the Little Coal River watershed, which is part of the greater Coal River sub-basin.

Based on the findings in this case study about the Spruce No. 1 mine's potential impacts on the environment and nearby communities, we recommend that USEPA, in its Final Determination, deny specification of Pigeonroost Branch, Oldhouse Branch, and the yet-to-be impacted portions of Seng Camp Creek as sites suitable for receiving dredged and/or fill material in association with the proposed mining operation. We recommend this action because the mining permit, as proposed, violates USEPA's guidance as published on April 1, 2010.

## Summary of conclusions:

The following provides an explanation of the applicable USEPA surface mining permit guidelines as well as an analysis of how the Spruce No. 1 permit pertains to each guideline:

- *Mining activities will not cause or contribute to violations of water quality standards, contaminate drinking water supplies, or add toxic pollutants that kill or impair stream life.*

Each of the potential impacts from the Spruce No. 1 mine permit as described in USEPA Proposed Determinations documents would, in USEPA's own words, "cause or contribute to significant degradation of water quality" and have "unacceptable adverse impacts [on] fish and wildlife resources," thereby violating this guideline.

- *Applicants have evaluated a full range of alternatives to discharging into waters of the US.*

The United States Army Corps of Engineers (USACE) is required to review proposed alternatives to proposed mining operations, as set forth in mining permits, and to require the coal company to revise the permit should USACE determine that the chosen alternative would have unacceptable adverse effects on waters of the US. USEPA has concluded that the chosen and USACE-approved alternative—the current mining plan—would have unacceptable adverse effects.

- *Mining companies have avoided and minimized their direct, indirect, and cumulative environmental impacts to streams, wetlands, watersheds, and other aquatic resources.*

To ensure that permitted valley fills adhere to this guideline, USEPA requires that the permit "demonstrate compliance with applicable water quality standards," and that "there is no significant degradation associated with the first valley fill before the [coal company] may begin construction of subsequent [valley] fills." According to USEPA data, the active Seng Camp Creek valley fill associated with Spruce No. 1 has failed to comply with applicable water quality standards. As a result, the remainder of the proposed valley fill sites—Pigeonroost Branch and Oldhouse Branch—according to USEPA guidelines, cannot be approved for specification as suitable sites for disposing of mining waste..

- *Remaining mining-related aquatic impacts have been effectively mitigated by establishing, restoring, enhancing, or preserving streams and wetlands.*

In relation to the mitigation of mining impacts, USEPA guidance states that "unavoidable mining-related environmental impacts must be effectively mitigated by establishing, restoring, enhancing, or preserving streams and wetlands; improving water quality; addressing drinking water impacts; and reclaiming watersheds when mining is completed." USEPA concludes that the Spruce No. 1 mitigation plan is "unlikely to sustain the biological, chemical, and physical characteristics of the affected streams" because it "fails to recognize the true functioning of healthy headwater streams

and so therefore fails to replace the streams' lost ecological services," and that "the project may have unacceptable adverse impacts to fish and wildlife resources..."Therefore, USEPA recognizes that the proposed Spruce No. 1 mining operation violates this guideline.

In addition to permit guidelines, USEPA explicitly recognizes that "surface coal mining can have adverse environmental and health impacts on neighboring communities," and notes that federal statutes and regulations require, during the review of surface mine permits, "consideration of the full range of potential impacts on the environment, human health, and communities," particularly low-income or minority populations. Logan County qualifies as a low-income population as 24% of its residents live below the poverty line, which exceeds state and national averages. Given the economic status of Logan County residents, and the probable impacts experienced by neighboring communities, this case study concludes that before the Spruce No. 1 mine can be approved "additional analysis of the potential for disproportionately high and adverse effects on the low-income populations (in the vicinity of the Spruce No. 1 mine) needs to be conducted."

USEPA regulations and Clean Water Act guidelines provide for the protection of public health, water quality, and other environmental resources. The historical application of rules and regulations pertinent to Appalachian surface mining operations has failed to achieve the intended goals. The potential for the operation of the Spruce No. 1 mine to result in adverse and irreversible environmental effects, both individually and cumulatively, requires a strict application of Clean Water Act guidelines as a decision is made on the permit. It is the obligation of USEPA to ensure that the predicted impacts from Spruce No. 1 are avoided, even if doing so requires a veto of the permit, as authorized under Clean Water Act Section 404(c).

### **Additional Findings of Note:**

- Logan County qualifies as a low-income population because 24% of its residents live below the poverty line, exceeding state and national averages.
- In 2009, Logan County produced 16.6 million tons of coal, 60% of which was produced through surface mining
- The Spruce No. 1 mine is expected to produce approximately 2.7 million tons of coal annually over its 15-year lifespan, for a total of 41 million tons of bituminous coal.
- Of the 456 square miles (290,000 acres) of land in Logan County, approximately 81 square miles (51,700 acres)—an area 20% greater than the size of Washington, D.C.—have been impacted by surface mining and valley fills, or are currently permitted for surface mine operations, amounting to 18% of the county land area.
- Twenty-six streams within the Spruce fork watershed have been listed as biologically impaired.
- The Spruce No. 1 mine would increase the cumulative impact by approximately 10 miles to 63 total miles of streams lost, amounting to 22% of the watershed.
- USEPA notes that within the Spruce Fork sub-watershed alone, more than 34 past and present surface mine permits have been issued, which collectively occupy more than 33% of the land area.