

URANIUM MINING AND MILLING

Statement of the Issue

For thirty years, Virginia has maintained a ban prohibiting uranium mining in-state.¹ Virginia Uranium, Inc. (VUI) is now attempting to lift that ban. Much of VUI's efforts have focused on a major uranium deposit in Southside Virginia, known as Coles Hill. The potential for uranium exploration, however, exists statewide.

If uranium is mined and milled in Virginia, the resulting "yellowcake" would have to be shipped out-of-state to an enrichment facility.² What would be left behind in Virginia is the waste, known as tailings. According to VUI, the Coles Hill deposit has an average grade of 0.06 percent uranium oxide.³ In contrast, the average grade of the McArthur River mine, in northern Saskatchewan, is more than 15 percent — 254 times richer than Coles Hill.⁴ This means that Coles Hill would produce significantly more waste than the richest

Canadian deposits per pound of yellowcake produced.

To date, at least twenty-four governmental organizations—cities, counties, towns, and regional councils of government in Virginia and North Carolina—have passed resolutions in support of keeping the ban. These include the town of Halifax, Virginia, Orange County, Virginia, and the City of Virginia Beach. Joining these communities is a wide range of civil rights and environmental organizations: the Virginia State Conference of the NAACP, Virginia Organizing, American Rivers, and the National Wildlife Federation, among many others. You can learn more about the coalition of groups working to "Keep The Ban on Uranium Mining in Virginia" at www.keeptheban.org.

Background

A Threat to Public Health

Peer-reviewed research and government reports confirm that populations living near uranium mines or mills may be exposed to higher levels of uranium in drinking water and locally grown foods due to contaminated soil, water and air.⁵

Higher incidence rates of childhood leukemia, respiratory disease and kidney disease have been recorded in areas close to uranium mine sites. Additional studies show that uranium toxicity may affect bone growth and development and have negative reproductive and developmental effects.

A Threat Downstream

Uranium levels in drinking water have been associated with damage to kidney function that may increase the risk of kidney disease. Communities that depend on waterways close to mining and milling sites are vulnerable to exposure following either acute or chronic failures of tailings containment facilities. These tailings retain about 85 percent of the original radioactivity.⁶

The City of Virginia Beach has raised important concerns about the Coles Hill site, which sits within the Roanoke River watershed. The City retained the Michael Baker Corporation, a global engineering firm, to research the potential for contamination of Lake Gaston from uranium waste during a major precipitation event, such as a hurricane.

The Baker report concluded that a catastrophic failure of a mill tailings containment cell at the



URANIUM MINING RECOMMENDATIONS

Neither the Coal and Energy Commission nor the General Assembly should even consider legislation on uranium during the 2012 legislative session—to do so would be to renege on the pledge to provide public meetings throughout the state, after release of the NAS pre-publication report. Legislators should instead stand firm and “Keep The Ban” on uranium mining in Virginia.

proposed Coles Hill site would be significant for water supplies in Hampton Roads. Released or leaked tailings would move through the river system to the reservoirs downstream, including Lake Gaston, potentially leading to radioactivity concentrations in the river/reservoir system 10-20 times greater than what is allowed by the Safe Water Drinking Act.

As of November, 2011, at least twenty-four governmental organizations—cities, counties, towns, and regional councils of government in Virginia and North Carolina—had passed resolutions in support of keeping the ban on uranium mining in Virginia.

A Threat Statewide

Speaking to legislators and citizens' groups, representatives for VUI have insisted that Coles Hill is the only potential uranium mining site in the Commonwealth. But when speaking to financiers, VUI tells a very different story. In London in February 2011, Walt Coles, Jr. told an investors conference:

[A] Canadian company called Marline Uranium ... had made a major discovery in Athabasca called Rabbit Lake, and it was the first major uranium discovery in

*Athabasca. ... And two years later, that same team made the discovery of Coles Hill, and talking to the lead geologist, he's insistent to this day that Coles Hill is the first of more major discoveries in Virginia that might lead to another Athabasca-style resource play.*⁷

Coles' candid assessment is buttressed by Susan Hall, a geologist with the U.S. Geological Survey, who explained, “A common scenario in mineral exploration is that a large discovery such as Coles Hill is followed by an influx of exploration companies who comb the countryside and discover additional deposits.”⁸

In the 1970s and 80s, prior to the imposition of the ban, the industry obtained more than 1,200 exploratory leases affecting at least three watersheds: the Roanoke River (providing drinking water to Hampton Roads); the Occoquan (providing drinking water to portions of Fairfax County); and the Rappahannock (flowing to Fredericksburg). Although these leases have expired, they provide an important indication of where exploration would resume if Virginia's longstanding ban is lifted.

A Rush to Judgment

Four independent studies will inform Virginia's decision on whether to maintain our ban on uranium mining. These are:

- the downstream impacts analysis by the City of Virginia Beach;
- a socio-economic study being conducted for the Virginia Coal and Energy Commission by Chmura Economics and

Analytics, a small firm, based in Richmond, with close ties to the coal-mining industry;

- a socio-economic study being conducted for the Danville Regional Foundation by RTI International, a worldwide research institute headquartered in Research Triangle Park, North Carolina. The Danville Regional Foundation is a regional community foundation with no affiliation to the environmental community or pro-mining interests.
- a scientific and technical review being conducted by the National Academy of Sciences (NAS). The NAS has stated emphatically that it will not determine whether mining can be carried out safely in Virginia; that is a policy matter delegated exclusively to the General Assembly.

Although the NAS will release a prepublication report in December 2011, the project will not be complete until April or May 2012. The NAS's contract with Virginia states:

The project timeline and budget includes a five month period after public release and delivery of the report in prepublication form, to allow for publication of the printed reports and extensive public outreach that will include public meetings in Virginia to disseminate the report's findings.⁹

In other words, the contract envisions that from December 2011 through May 2012, members of the Committee will be made available at 'town hall' style public hearings across the state to build public confidence and understanding of the Committee's findings. Yet VUI is now pressing state legislators to lift Virginia's mining ban during this legislative session—before the NAS's project has been completed.

1. The ban was codified in 1982, and can be found at Virginia Code § 45.1-283.

2. Enrichment facilities increase the concentration of Uranium 235 isotopes up to a level that is usable as a fuel for commercial nuclear reactors. There are no enrichment facilities in Virginia; the closest operating plant is one owned by the U.S. Department of Energy in Paducah, Kentucky. Fuel from the Paducah plant is sent to commercial nuclear customers all over the world.

3. Virginia Energy Resources, Corporate Presentation, at http://www.santoy.ca/i/pdf/VAE_CorporatePresentation.pdf

4. Cameco Corp., "McArthur River: Summary," at http://www.cameco.com/mining/mcarthur_river/

5. For example, a study of cattle raised near uranium mining and milling plants in New Mexico found that the uranium concentration in the vegetation was 75 times greater in the exposed area than in control sites. Uranium concentrations in the exposed cattle were 4 times greater for the liver and kidney and 13 times greater for the femur.

6. Michael Baker Corp., *A Preliminary Assessment of Potential Impacts of Uranium Mining in Virginia on Drinking Water Sources, Final Report*, at ES-2 (Revised Feb. 22, 2011), available at http://www.vbgov.com/government/departments/public-utilities/Documents/04.UraniumMiningReport_Final_Updated20110222_V2.pdf.

7. Walter Coles, Jr., Virginia Energy Resources, Inc., "Building North America's Uranium Supply," Americas' Resources Investment Congress, London, U.K. (Feb. 1, 2011) (transcript on file with Southern Environmental Law Center) (emphasis added).

8. "Virginia uranium debate sparks question: Is there more?," CHARLOTTEVILLE DAILY PROGRESS (July 24, 2011) available at <http://www2.dailyprogress.com/news/2011/jul/24/virginia-uranium-debate-sparks-question-there-more-ar-1193801/>.

9. See Fixed Price Subaward Contract between National Academy of Sciences (signed 2/19/2010) and Virginia Polytechnic Institute and State University (signed 2/22/2010), at Appendix A, p.5 (emphasis added).

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