

**The Coles Hill Uranium Project and Virginia Uranium Inc.-
History and Critical Path Forward for Development - 10520**

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ABSTRACT

The Coles Hill Uranium Deposit in Pittsylvania County, Virginia is considered one of the largest undeveloped uranium deposits in the United States. Originally discovered in the late 1970's, the Coles Hill project contains 119 MM lbs of U₃O₈ equivalent, whose ore may be valued over seven billion dollars. During the early 1980's the project was advanced to the feasibility stage. The price of uranium collapsed in the mid 1980's and the Coles Hill project was deemed uneconomic. Concurrently, during the mid-1980's the Commonwealth of Virginia established regulations for uranium exploration while enacting a moratorium on uranium mining that stated "notwithstanding any other provision of law, permit applications for uranium mining shall not be accepted by any agency of the Commonwealth ... until a program for permitting uranium mining is established by statute."

The recent resurgence in uranium prices prompted industry leaders in the uranium recovery field to approach the land owners of the Coles Hill deposit to develop this resource. The Coles and Bowen families that have owned the land the deposit rests on for over 200 years evaluated the options brought forth to acquire their properties. Ultimately, the families decided to form their own company, Virginia Uranium, Inc. in 2007. The purpose of establishing Virginia Uranium, Inc. was to ensure that if the Coles Hill project was developed, that it was done in a way that was sustainable and beneficial to the local region. Virginia Uranium, Inc. is committed to developing its uranium resource in a manner that will strive to make it a model for uranium recovery operations worldwide. This paper will examine the developmental history and critical path forward for the Coles Hill Uranium Deposit.

INTRODUCTION

The history of the Coles Hill property in Pittsylvania County, Virginia began in 1785 when the Coles family purchased 5,500 acres. Since 1785 the Coles family has continuously resided on the property. Construction of the historic Coles Hill home began shortly after the War of 1812, and was finally completed in 1819.

History of the Coles Hill Deposit

In 1978 Marline Uranium/Oil Company initiated an extensive uranium exploration program along the eastern United States based on a model developed from the geologic features and age of rocks associated with known uranium deposits in the Athabasca Basin of Canada. The exploration program targeted the Triassic Basin along the Eastern United States that is discontinuous but present from South Carolina to New York. The exploration program identified targets to be flown over with airborne radiometric instruments to indicate the likely presence of uranium mineralization. Subsequently the airborne targets that looked promising were resurveyed using lower elevation helicopter mounted radiometric instruments. Finally, the helicopter targets were vetted and exploration geologists set out on the ground to identify and sample the outcrops in the vicinity of the helicopter radiometric targets. The exploration geologists carried a hand held Geiger counter that was used to identify rock samples for potential assay.

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While transecting the Triassic Basin six miles northeast of Chatham, Virginia along State Road 690 (Coles Road) the exploration geologists noticed a radiometric signature with their instrument in the middle of the road. They investigated the rocks in the surrounding area, and collected some hand samples for chemical assay. The assay results revealed the surface rock contained about 0.5% U_3O_8 . Marline then obtained leases from the land owners and began a drilling program. After three years of drilling, radiometric logging, assay, and sampling at a cost of over \$43 million (US) it was estimated that the Coles Hill deposit contained approximately 110 million lbs of U_3O_8 equivalent. Concurrently, during Marline's exploration program at Coles Hill uranium markets worldwide began to deteriorate, as nuclear energy fell out of favor with the populous and by 1983 the price of uranium was so low that it made even this "mega-deposit" uneconomic.

As uranium prices began to increase in 2004, uranium mining companies from around the world were eager to acquire proven undeveloped uranium deposits. Thanks to the extensive exploration of the Coles Hill ore body performed in the early 1980's, the deposit was considered one of the "mega-deposits" that was yet to be developed. Uranium mining companies came from around the world to Pittsylvania County, Virginia, with considerable compensation, in hopes that they might acquire leases on the Coles Hill ore body. After considering all of the very generous offers the families that controlled the land, on which the deposit is located, decided that they would not accept any offers from outside companies. Instead, they decided that if the deposit was to ever be developed that it would be done by a local company, with local employees, where the economic benefits would largely stay in the localities surrounding the deposit. Hence, Virginia Uranium, Inc. (VUI) was born in 2007.

History of Virginia's Moratorium on Uranium Mining

Pursuant to the Marline uranium discovery, the 1981 Virginia General Assembly directed the Virginia Coal and Energy Commission (CEC) to undertake a study on the issue of uranium mining development in the Commonwealth, and specifically in Pittsylvania County, Virginia. The CEC commenced its study in April 1981, and created a Uranium Subcommittee in late summer of 1981.

The Uranium Subcommittee recommended in 1982 that Virginia adopt a statute that would regulate exploration for uranium ore. The recommendation was adopted through passage of Virginia Senate Bill 179, which also prohibited any Virginia agency from accepting permit applications for uranium mining before July 1, 1983, or until a program for permitting uranium mining is established by statute, otherwise known as a moratorium.

Following the Uranium Subcommittee recommendations, in 1983 Senate Bill 155 (SB 155) established the Uranium Administration Group (UAG), charged with examination of uranium development "at specific sites in Pittsylvania County" [1]. After extensive studies and discussion the UAG made the following recommendation in 1985:

"Based on all these efforts, we can now conclude that the moratorium on uranium development can be lifted if essential specific recommendations derived from the work of the task force are enacted into law." [2]

Sixteen members of the UAG supported the recommendation with two dissents.

Uranium mining regulations were never finalized by the UAG, as the downturn in prices made uranium development uneconomic. Therefore, the moratorium was not lifted because specific legislation was not

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introduced to do such. The moratorium remains in place today (2009), even though its intent was not to ban uranium mining, but rather allow time for the proper development of regulations.

In September 2007, the executive branch of the Virginia state government published the Virginia Energy Plan, which provided a comprehensive analysis for how the state might become more energy independent. The report highlighted that approximately 35% of electricity generation in Virginia comes from nuclear power plants, while all the nuclear fuel (uranium) is currently imported to the state. Due to the presence of substantial uranium resources in Southside Virginia the report recommended that serious consideration be given to the development of a local uranium mining initiative. The following direct quotes from the Virginia Energy Plan refer to the Coles Hill uranium deposit in Pittsylvania County:

“There are sufficient resources to support a uranium mining industry in Pittsylvania County with enough to meet the fuel needs of Virginia’s current generation... Virginia should assess the potential value of and regulatory needs for uranium production in Pittsylvania County.” [3]

During the 2008 Virginia general assembly, VUI supported legislation that would have established a legislative committee to study uranium development in the state that followed the recommendations of the Virginia Energy Plan. While the Virginia Senate approved a uranium study bill by a vote of 36-4, the legislation was subsequently tabled during a hearing of the Rules Committee in the Virginia House of Delegates, effectively killing the legislation.

In November 2008, the Virginia Coal and Energy Commission (CEC) passed a motion to appoint a sub-committee of its members to oversee a study on the impact of uranium mining in Virginia. The CEC sub-committee held two public hearings to solicit input on the scope-of-study. The Virginia Center for Coal and Energy Research at Virginia Polytechnic and State University was asked by the CEC to negotiate the scope-of-work with the National Academy of Sciences (NAS). The NAS would perform the study on uranium mining in Virginia. On December 3, 2009 the CEC uranium mining sub-committee reported that the NAS had agreed to undertake the study on the health and safety aspects of developing a uranium mining and milling industry in Virginia.

The NAS study is expected to take 18-24 months to complete. The scope of work developed for the NAS study is comprised of twelve tasks. The tasks include; an assessment of the short term and long term occupational, public health and safety considerations from uranium mining and milling, a review of global and national uranium market trends, and the main types of uranium deposits worldwide. In addition the NAS study will evaluate the impact uranium mining might have on Virginia given its specific geologic, hydrologic, climatic and population characteristics. Further tasks to be evaluated relate to best management practices for the uranium mining and milling industry, current state and federal regulatory framework for uranium mining and milling, an assessment of air, groundwater, surface water and ecosystem quality issues. Finally the NAS study will also address the baseline data and approaches necessary to monitor environmental impacts associated with uranium mining and milling and a characterization of the potential public education and preparedness plan the Commonwealth of Virginia would need to initiate if uranium mining and milling were to proceed. The moratorium on uranium mining in Virginia will remain in place until the Virginia legislature acts to remove it and implement uranium mining regulations. The NAS study should provide the Virginia legislature with some of the information necessary to make a recommendation on whether or not to implement regulations for uranium mining in the Commonwealth.

CRITICAL PATH FORWARD

VUI faces many challenges in the coming years and must overcome many obstacles before the production of yellowcake becomes a reality at the Coles Hill site. Some of the key and crucial steps necessary to proceed with development are clearly defined and others remain undetermined. In the future VUI will likely initiate a scoping study to provide gross technical and economic data on future development of the Coles Hill deposit. The project was previously advanced to the feasibility stage in the 1980's and scoping studies are available from that time. However, the project must be reevaluated based on current economic and technical conditions. Based on the findings of the scoping study Virginia Uranium will likely undertake a pre-feasibility study to more specifically evaluate the development of the project.

In 18-24 months the NAS will likely have the results of their study on uranium mining in Virginia. At that time the Virginia legislature may have the necessary information to proceed with promulgating regulations for uranium mining. Only once the Commonwealth has initiated the regulations for uranium mining can the project be advanced to the feasibility stage because a benchmark for completing a feasibility study is that the resource is legally recoverable. Due to Virginia's current moratorium the resource is not legally recoverable. Once the Commonwealth of Virginia has promulgated regulations for uranium mining and the feasibility study is completed VUI will begin the process of completing and submitting the necessary state and federal permits. VUI envisions constructing an onsite mill and tailings management facility both of which will fall under the regulatory authority of the Nuclear Regulatory Commission (NRC). The NRC licensing process for uranium mills and tailings management facilities is well defined and extremely detailed. Components of the licensing application process will require an Environmental Impact Statement, and the commensurate environmental baseline monitoring necessary to compete the application.

Concurrently, VUI would also have to fulfill the yet-to-be-determined permit application for development of a uranium mine with all appropriate Virginia state agencies. Other permits may be required from additional state and federal agencies including but not limited to the Environmental Protection Agency, US Army Corps of Engineers, Virginia Department of Environmental Quality, Virginia Department of Health and Virginia Department of Mines Minerals and Energy. Only once all of these strenuous and lengthy permits applications are successfully completed could Virginia Uranium begin mining and milling uranium at the Coles Hill site.

CONCLUSIONS

VUI is in perhaps the most unique position of any uranium mining company ever. The reasons for this position are two-fold. First, the structure of the company is unique. The majority ownership of VUI is controlled by the families that own the land on which the deposit is located. Second, the families not only own the land but maintain primary residences on site. The families have all indicated that the mine would need to be designed in such a way that allows them to maintain their primary residences on site during and after mining operations. Few, if any, mining companies have ever been controlled by persons that also own the land and intend to remain on the land during and after operations. Therefore, the company has the greatest stake in ensuring that development is done in a safe and environmentally responsible manner. This gives VUI's management great latitude to incorporate the best management practices and principles of sustainable design into every aspect of development, with a unique understanding of the economic and environmental implications they will have.

REFERENCES

1. Senate of Virginia, 1983 Legislative Session, "Senate Bill 155" (1983).
2. Virginia Coal and Energy Commission, "Senate Document No. 15" (1985).

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3. Commonwealth of Virginia Department of Mines, Minerals and Energy, “The Virginia Energy Plan” (2007).