



# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

Mailing address: P.O. Box 1105, Richmond, Virginia 23218

TDD (804) 698-4021

[www.deq.virginia.gov](http://www.deq.virginia.gov)

Douglas W. Domenech  
Secretary of Natural Resources

David K. Paylor  
Director

(804) 698-4020  
1-800-592-5482

X X, 2010

The Honorable David Norris, Mayor  
City of Charlottesville  
1409 Early Street  
Charlottesville, VA 22902

The Honorable Ann H. Mallek, Chair  
Albemarle County Board of Supervisors  
P.O. Box 207  
Earlsville, Virginia 22936

Dear Sir and Madame:

Mayor Norris and former County Board Chair David Slutsky met with Department of Environmental Quality (DEQ) staff on July 30, 2009 to discuss permit modification issues for the proposed expansion of the Ragged Mountain Reservoir. The Rivanna Water and Sewer Authority (RWSA) has a valid Virginia Water Protection Permit (No. 06-1574), issued on February 11, 2008, for replacing the existing Ragged Mountain Reservoir dam with a new larger dam with a normal pool elevation of 686.0 feet. At the time of the meeting both the City of Charlottesville and Albemarle County were researching other alternatives beyond the permitted approach.

The alternative of most interest noted during the meeting was dredging the South Fork Rivanna Reservoir in combination with stabilizing or fortifying the existing dam on the Ragged Mountain Reservoir and increasing its height by thirteen feet (hereafter referred to as dredging and dam renovation). Of particular interest was whether the dredging and dam renovation alternative could provide adequate supply while meeting the instream flow requirements in the current permit. DEQ staff agreed to conduct modeling exercises to evaluate the water supply yield of the dredging and dam renovation alternative in the context of the instream flow targets in the existing permit approach (Special Conditions Part I.F.4).

DEQ has completed modeling the dredging and dam renovation alternative. A summary of our modeling approach and assumptions are detailed in the attached document. Our results indicate

that the dredging and dam renovation alternative in the context of the existing instream flow permit conditions would achieve a safe yield of approximately 16.8 mgd. This yield is less than the projected 2055 demand of 18.7 mgd as presented in the 2006 community water supply plan. Our modeling indicates that the currently permitted Ragged Mountain Reservoir expansion would result in a safe yield of approximately 18.7 mgd under the same permit conditions.

It should be noted that the existing permit conditions tie instream flow releases and the institution of conservation measures to total usable storage volumes in the RWSA system. The dredging and dam alternative has a smaller maximum total usable storage and therefore, implementation of this approach would result in a different flow release pattern than the permitted Ragged Mountain expansion. Additionally, because the maximum total usable storage of the dredging and dam alternative is less than the first trigger for conservation measures (2.36 billion gallons) the implementation of this approach under the current permit conditions would result in continuous triggering of voluntary conservation measures. Implementation of the dredging and dam alternative would likely require a major permit modification or the issuance of a new permit to address these and potentially other issues.

Please contact me if you would like to discuss the modeling results in detail or if you have any further questions on this matter.

Sincerely,

Scott Kudlas  
Director, Office of Surface and Groundwater Supply Planning

Attachment: Modeling Summary