



# 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

Fax: 804-698-4019 - TDD (804) 698-4021

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

Molly Joseph Ward  
Secretary of Natural Resources

David K. Paylor  
Director

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

### MEMORANDUM

March 11, 2016

To: Kim Stein, Liberty University

From: Brian McGurk, Mark Richards, Mark Bushing (DEQ)

### **Re: Scotts Mill Hydropower Project (FERC P-14425), Request for Comments on Draft Study Plans**

Thank you for the opportunity to provide comments on the Draft Study Plans. Following below are DEQ comments on the draft plan.

#### **Study Plan 1: Water Levels**

According to the description of the project, inflow that is less than the hydraulic capacity of the hydropower facility will be diverted to the facility, causing little to no flow over the top of the dam. This will apparently result in little to no flow to a portion of the river downstream for significant periods during low flow conditions on the river. The study plan should include the following:

- Specification of the number and location of upstream and downstream staff gauges and the planned frequency of water level monitoring at each gauge
- It was stated that due to the long period of flow recording in the James, no additional flow data are needed. The study plan should identify the flow gauge(s) from which data will be relied upon and how discharge at other locations will be transferred to the dam location.
- The monitoring should 1) capture low flow periods when there is little to no flow over the dam under the current condition, and 2) occur downstream of the dam along the left side of the river so that post-project effects upon the area immediately downstream can be estimated.

The plan should specify who will perform the monitoring and describe how the proficiency and/or experience of the workers will be determined.

#### **Study Plan 2: Bathymetry Survey**

The plan should specify who will perform the survey and describe how the proficiency and/or experience of the surveyors will be determined. Why is the use of sidescan sonar the most appropriate methodology?

How will the map mentioned in section 10 be used to help determine flow pattern changes for pre- and post-project conditions?

**Study Plan 3: Water Quality Effects of Flow and Water Level Changes**

The PAD stated that the powerhouse will be located behind the 140-ft long gravity arch spillway. If the project layout has been changed or might be changed from that described in the PAD then the alternative project layouts should be identified explicitly as dependent upon the results of the studies.

The plan should specify who will perform the monitoring and describe how the workers' proficiency and/or experience will be determined. How will appropriate sampling points be determined? Will the sampling include the entire water column?

The plan states that it may be necessary to measure water velocities upstream of Scott's Mill dam to verify existing flow patterns during low flow conditions. Such measurements would be used to verify the accuracy of flow pattern predictions based on bathymetry and water level data. These measurements should be considered as definitely necessary and not optional.

The plan should explain why the approach considered (without a modeling effort to assess changes in flow patterns) should yield reasonable results rather than just including a statement to that effect.

**Study Plan 4: Sediment Chemical Analysis**

There is obvious concern that PCB contaminated sediment exists upstream of the dam and could be re-suspended during the dredging/sediment excavation effort. While recognized within this proposed study, the characterization appears to fall short.

First, DEQ suggests U.S. EPA Method 1668 be used for a portion of the sediment samples. This will provide a complete characterization within those samples for all PCB congeners and will account for weathering that may have occurred particularly in the deeper, anaerobic sediments. Targeting a small list of PCB congeners, such as those proposed can lead to an underestimation of total PCBs and an inaccurate level of existing contamination. A list of VELAP certified labs that perform method 1668 can be found on DEQ's PCB TMDL website. EPA Method SW-846-8082 can also be used but should be calibrated against 1668 to see what percentage of PCB may be missed. A couple of side by side samples should accomplish this task.

Second, the characterization should be spatially more robust. Two samples above and below the dam seems inadequate and would not accurately characterize the existing sediments, especially above the dam. Apparently there are currently three separate locations where the powerhouse could potentially be located. Sampling should occur in each of the three potential powerhouse locations if there is a potential for sediment disturbance in these areas. Also, without knowing the depth of the existing sediments that have accumulated, a 6' depth may not be adequate.

Third, if the sediment is contaminated what measures will be taken to minimize re-suspension and release of the sediment? Also, how and where will the sediment be disposed? Depending on the level of contamination in the sediments, it may be necessary to collect water samples during excavation and have them analyzed for PCBs using method 1668.

The broader list of analytes appears adequate. DDT and metabolites should be retained for evaluation particularly for the deeper sediments.

**Study Plan 8: Fish Passage**

The development of trigger numbers for implementing upstream fish passage should not be completed until the powerhouse facility specifications have been completed.

**Study Plan 10: Wetland Assessment**

Jurisdictional determinations have previously been confirmed for Daniel Island and Treasure Island. Digital files are available from DEQ.

Daniel Island has contains wetlands (19.10 acres) on the southern tip of the island (closest to the dam) and an increase of 2-3 feet of water height (somewhere around 514 to 516 elevation) will flood a portion of that area. There are two vernal pools on this island. The study should include an assessment to see if there are rare or endangered species utilizing these pools.

Finally, it is important to note that the additional information and/or results from the studies, along with any other information collected to support the Scotts Mill Project License Application process, should be incorporated into a Virginia Water Protection (VWP) permit application so that the §401 certification is included as part of the Final License Application. It is recommended that, in order to expedite the §401 certification process, the licensee should begin the VWP permit application process as soon as possible.

Please contact Brian McGurk using the contact information below if you have any questions about these comments:

Brian McGurk  
DEQ Office of Water Supply  
P. O. Box 1105  
Richmond VA 23218  
Brian.McGurk@deq.virginia.gov  
804-698-4180

Cc: Craig Nicol  
Wayne Dyok  
Mark Fendig