

**From:** [Pelren, David](#)  
**To:** [Ford, Anthony](#)  
**Subject:** FW: [EXTERNAL] Mussel Study Plan for the Ridgeline Pipeline Project  
**Date:** Wednesday, November 23, 2022 9:53:00 AM  
**Attachments:** [KIF - Summary of benthic invertebrate community results 2017.pdf](#)  
[1651 - Clinch River Mussel Survey Adjacent to KIF UCC 2005.pdf](#)  
[Mussels collected at KIF during benthic invertebrate community assessments.xlsx](#)

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Andy, I think Todd makes a good case for not having to include the area in the immediate area of the power plant in the mussel surveys. Would you agree?

-Pelren

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**From:** Amacker, Todd M <tmamacker@tva.gov>  
**Sent:** Wednesday, October 19, 2022 2:26 PM  
**To:** Pelren, David <david\_pelren@fws.gov>; Adams, Joshua <Joshua.Adams@stantec.com>  
**Cc:** Sikula, Nicole R <nicole\_sikula@fws.gov>; Gus McLachlan <gus.mclachlan@enbridge.com>; Benefiel, Jeffrey <Jeff.Benefiel@stantec.com>; Casey, Justin <Justin.Casey@stantec.com>; Haider, Jessica <Jess.Haider@stantec.com>; Fleece, Cody <Cody.Fleece@stantec.com>; Tennessee ES, FWS <tennesseeES@fws.gov>; Ford, Anthony <anthony\_ford@fws.gov>; Hamrick, Elizabeth Burton <ecburton@tva.gov>  
**Subject:** RE: [EXTERNAL] Mussel Study Plan for the Ridgeline Pipeline Project

Hi All –

Apologies for the delay in providing this data. I have had an ongoing discussion with Tyler Baker, our Limnologist, about this and just wanted to provide a few documents and a little biological context around the proposed pipeline crossing in question.

### **Benthic invertebrates:**

The benthic community transects closest to the proposed pipeline crossing are ERM 1.0 and ERM 2.2. The attached 2017 KIF report provides a high-level summary of the benthic invertebrate community results. Benthic community sampling was conducted along transects that crossed the width of the reservoir perpendicular to the direction of flow. Discrete grab samples were collected from 10 approximately equally spaced locations along each transect using a standard Ponar dredge.

EPT richness may be the biggest take home. While the observed values for Average EPT richness are within the range commonly observed in TVA mainstream reservoirs, both Average EPT Richness and Total EPT Richness is considered low and categorized as 'severely impacted', as reservoirs obviously aren't natural systems. Generally, a few more EPT taxa are collected at the upstream most transects on the Emory and Clinch Rivers because both rivers are transitioning from more-riverine to more-lacustrine (increased depositional sediments) within the study area.

Average EPT richness is the total number of distinct EPT taxa in each substrate sample, divided by the total number of samples. Therefore, if *Hexagenia* (a highly ecologically

tolerant taxon) was the only EPT collected, and each sample had at least one *Hexagenia*, then the metric value would be 1.0.

At KIF, *Hexagenia* account for about 70% of the EPT richness. Approximately 1156 individual substrate samples have been collected in the vicinity of KIF. If *Hexagenia* are excluded from the EPT counts, then about 70% of the individual samples would not contain an EPT. *Oecetis* is the second most collected EPT taxa. Exclude *Hexagenia* and *Oecetis*, then 85% of the samples would not contain an EPT. Stoneflies have been collected in 15 of the 1156 samples; a grand total of 21 individuals, and all but one was collected in the Emory River.

### **Freshwater Mussels:**

Also attached is a (somewhat dated) freshwater mussel survey from 2005. In my experience, unfortunately, continued degradation of the federally listed mussel fauna is the norm in the main stem Tennessee River, with a few exceptions. Given this general trend, combined with the results of the 2005 survey, it is highly unlikely that the area in question harbors federally listed mussel species. Broadly speaking, I am supportive of freshwater mussel surveys as they provide data that inform decisions that agencies make on a weekly basis, but I just don't think that this particular site warrants the time, effort, and money that could be better utilized in more mussel-rich locations.

\*Also attached is a list of freshwater mussels (albeit rare) that have been accidentally 'grabbed' by the ponar since 2009 in areas directly adjacent to Kingston Fossil Plant. They represent common, widespread species that you would expect to find in degraded habitat.

If I can be of any further assistance, please let me know. Thanks!

-TA

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**From:** Pelren, David <[david\\_pelren@fws.gov](mailto:david_pelren@fws.gov)>

**Sent:** Monday, September 26, 2022 3:11 PM

**To:** Adams, Joshua <[Joshua.Adams@stantec.com](mailto:Joshua.Adams@stantec.com)>

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**Subject:** RE: [EXTERNAL] Mussel Study Plan for the Ridgeline Pipeline Project

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Mr. Josh Adams

Stantec Consulting Services, Inc.

Josh –

We have reviewed the mussel study plan that you provided for the Ridgeline gasline project. We understand that eDNA samples were collected during June 2022 in order to provide foundational data for preparation of this plan. The survey would be initiated this fall, and the plan involves use of traditional methods for sampling of seven small stream sites. EDNA would be collected at larger waterbody sites (i.e., five sites at reservoir embayments and a large river) in conjunction with methods suitable for the habitats.

We approve of the plan as provided for the purpose of documenting presence / likely absence of threatened and endangered mussel species. As noted during the meeting at our office on September 22, 2022, the Tennessee Valley Authority will provide biological information in support of further evaluation of the need to survey for mussels at the proposed crossing site adjacent to the Kingston plant. Upon review of that information, we will discuss the extent of survey needs at the site.

Feel free to contact me if need for revision of the plan becomes apparent or for further discussion.

David Pelren  
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**From:** Adams, Joshua <[Joshua.Adams@stantec.com](mailto:Joshua.Adams@stantec.com)>

**Sent:** Thursday, September 8, 2022 8:02 AM

**To:** Pelren, David <[david\\_pelren@fws.gov](mailto:david_pelren@fws.gov)>

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**Subject:** [EXTERNAL] Mussel Study Plan for the Ridgeline Pipeline Project

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Dave,

Please find attached the survey plan for the mussel surveys we are planning on initiating this fall.

**Josh Adams**

Natural Resource Team Lead, Terrestrial Wildlife Technical Lead, Principal

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