

May 17, 2022

Mr. Richard Watson
Project Manager
PennEnergy Resources, LLC
600 Cranberry Woods Drive, suite 250
Cranberry Township, PA 16066

RE: PennEnergy Resources, LLC
Water Management Plan Amendment Application: Big Sewickley Creek

Mr. Watson,

The Department has reviewed PennEnergy's March 10, 2022 Water Management Plan Amendment Application ("WMP Application") submitted by Moody and Associates, Inc. in which a 1.5 million gallons per day (MGD) withdrawal on Big Sewickley Creek in Beaver County, Economy Borough is proposed. The WMP Application is deficient. The following significant deficiencies must be included/addressed in the resubmittal of the WMP Application.

1. In accordance with 25 Pa. Code §78a.69 (b), a withdrawal must be conducted in a manner that protects instream flows and limits any adverse impacts during periods of low flow. Streamstats was used to determine the Average Daily Flow. Streamstats is a source of information for the estimation of Q7-10 and Average Daily Flow (ADF) values, however, it may not be the most accurate source for determining these values. Streamstats relies on the regional regression equations to estimate streamflow statistics for ungaged sites. Regression equations are developed by statistically relating the streamflow statistics to the basin characteristics for a group of stream gages within a region. According to USGS's Scientific Investigations Report 2006-5130: "Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams; the regression equation has a standard error of prediction range of 12% to 38% for mean annual flow."

The proposed StreamStats ADF for Big Sewickley Creek is 21.6 cfs. The discharge data that was provided by Moody and other historic reference USGS gage data with similar drainage areas (i.e. USGS 03086100 Big Sewickley Creek and USGS 03085947 Lowries Run) do not justify an ADF of 21.6 cfs. Data from these three sources show that the ADF of Big Sewickley Creek is less than 21.6 cfs.

- a. The Department requests that PennEnergy provide documentation (i.e. models, DA ratio calculations, regression equation error of prediction range calculation, additional flow data, etc.) to justify the ADF at the proposed withdrawal location and to determine the passby flow rate that is most protective of instream flows for Big Sewickley Creek.
- b. The proposed withdrawal of 1.5 mgd is greater than 10% of the ADF based on Streamstats regression equations. PennEnergy needs to justify that a withdrawal of this magnitude is protective of instream flows and not only low

flows. Consideration may be given to lower withdrawal rates or increased passby flows. Any alternatives provided should also be supplied to Pennsylvania Fish and Boat Commission.

2. PennEnergy utilized SRBC's Publication 191A: Instream Flow Studies Pennsylvania and Maryland, Figure 6.13, to calculate that its withdrawal would not cause greater than a 5% habitat loss. Publication 191A specifically excluded Beaver County, as well as four other adjacent counties, from this study due to the streams within those counties having "very low yield" and "few reproducing trout streams in the area".
 - a. Although this study provides for a correlation between ADF and habitat loss, it may not have been fully evaluated in Beaver County. Please provide an additional analysis that a 25% ADF protects the resource including habitat loss. Results of the additional analysis will need to be submitted to Pennsylvania Fish and Boat Commission for review to ensure it is protective of the PA threatened species: Southern Redbelly Dace.
3. Velocity measurements and cross-sectional segment data for each collection date to support the instream flow discharges outlined in Table 1. Discharge and Stage Data. 25 Pa. Code § 78a.69(c)(3)
4. An updated upstream staff gage rating curve to include the staff reading for the required flow (passby rate + withdrawal rate) for PennEnergy to withdrawal their full allocation of 1.5 MGD. 25 Pa. Code § 78.69a(c)(3)
5. The calibrated upstream staff gage is shown to be directly downstream of a downed tree. Provide photo documentation of this area and justification that the down log will not interfere with flow accuracy, in terms of passby monitoring.
6. In order to protect downstream flows and ensure passby flows are maintained during withdrawals a downstream staff gauge should be installed and calibrated to monitor the passby flow rate. 25 Pa. Code § 78a.69(c)(3)
7. All plans submitted to the Department must be the "final construction plan". The current WMP proposes (3) options for an intake structure, and states that they will be utilized independently and or in combination. Please update Withdrawal Impact Analysis to state what intake that PennEnergy plans on utilizing. 25 Pa. Code § 105.13 (e)
8. The Withdrawal Impact Analysis states "staff gage will be referenced on an interim basis every time a withdrawal is desired...". The staff gage should be referenced before and during every withdrawal to ensure passby is met. Update the analysis to provide a more

detailed monitoring plan of the staff gage and passby staff reading. 25 Pa. Code § 78a.69 (e) (2)

9. The Withdrawal Impact Analysis references multiple PADEP eMappa figures, that were not provided in the WMP Application. Update the WMP Application to include the referenced eMappa figures.

10. The Withdrawal Impact Analysis (d) states that there are no upstream or downstream discharges along Big Sewickley Creek that will be impacted by the proposed withdrawal. According to the Department's Yield Analysis Tool and eMaps there are known Water Pollution Control Facilities (i.e. municipal and non-municipal sewage treatment plants) along Big Sewickley Creek. Please reevaluate and address that this withdrawal will not reduce the assimilative capacity of the stream to accept potential discharges. 25 Pa. Code § 78a.69 (c) (4)

11. Update the Wetland Determination report to include a photo location and orientation map. 25 Pa. Code § 105.13 (e)(1)(iv)

Please note that the operational plan will be reviewed under the B50 JPA Application E0407222-001.

Please also note that this information must be received within thirty (30) calendar days from the date of this letter, on or before June 16, 2022, or DEP will consider the application withdrawn.

Thanks,

Samantha Lutz