

**Brunner Island, LLC  
REGULATORY DELIVERABLE  
SUBMITTAL COVER SHEET**

<b>Date:</b>		<b>Transmittal No.:</b>	
<b>DOCUMENT DESCRIPTION:</b>			
<b>CONSENT DECREE REFERENCE:</b>		Paragraph No.:	
<b>BRIEF DESCRIPTION OF OUTLINED REQUIREMENT:</b>			
<b>RECIPIENT(S):</b>			
<b>NAME:</b>		<b>ORGANIZATION:</b>	
<b>Brunner Island, LLC Contact Name:</b>			
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July 29, 2020

Ms. Marcia Thiess  
Regulatory Affairs Senior Professional  
Talen Energy  
PO Box 221  
York Haven, Pennsylvania

Re: 2020 Semi-Annual Progress Report  
Section 316(a) Variance Demonstration Study at Brunner Island Steam Electric Station

Dear Ms. Thiess:

Brunner Island, LLC is conducting a Section (§) 316(a) variance demonstration study at the Brunner Island Steam Electric Station in York County, Pennsylvania in accordance with the *Section 316(a) Demonstration Work Plan for the Brunner Island Steam Electric Station* (Work Plan) submitted on February 14, 2019 to the Pennsylvania Department of Environmental Protection (PADEP) and approved on February 27, 2019. This study is being conducted to demonstrate to PADEP that the existing alternative effluent limitations for BISES Outfall 001 will assure the protection and propagation of a balanced, indigenous community (BIC) of shellfish, fish, and wildlife downstream of the 5,000-foot compliance point in the Susquehanna River.

Semi-annual progress reports are being provided to PADEP describing the components of the Work Plan that have been implemented and a preliminary summary of data collected, if available and appropriate. The first Annual Report was submitted on December 20, 2019 (submittal #BI-44-2019-12-20-v.1), describing implementation of the first of two winter fish sampling events, the aquatic habitat evaluation field survey, and installation and monitoring of supplemental water quality dataloggers. This semi-annual progress report is being provided as a supplemental update describing components of the Work Plan completed between January 2020 through June 2020. PADEP and Brunner Island, LLC agreed that Brunner would submit semi-annual status update reports on the progress of implementing the Work Plan by July 31 and January 31 of each year until the submission of the NPDES permit renewal application due January 31, 2023.

Preliminary results of the study components, or portions thereof, that were conducted to date are summarized below. Interpretation and the final evaluation of these results is dependent on additional information and data to be acquired during the remainder of this study and will be presented in the final § 316(a) variance demonstration study report.

### **Winter Fish Sampling**

The Work Plan included winter fish sampling to be conducted once in the winter season (December through February) in 2018-2019 and once in winter season in 2019-2020. At the request of PADEP, the first winter fish sampling event occurred on March 13, 2019. PADEP

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approved a delay in the start of the cooling tower operation until March 15 and waived the heat rejection requirement for March 1 – 15 so that the fish sampling could take place.

The second fish sampling event was attempted on January 3, 2020. Unfortunately, due to generation schedule, the generating units were not running during the sampling event. Therefore, the sample data are not indicative of species attracted to the discharge canal and thermal plume during generation. Despite absence of the thermal influence, these data provide valuable information regarding the fish community under these conditions. The second of two winter fish sampling events (during thermal discharge) is anticipated to be completed prior to March 1, 2021.

### **Supplemental Water Quality Monitoring**

The Work Plan included the installation and monitoring of six temperature and three dissolved oxygen dataloggers in the discharge canal and in the Susquehanna River.

Brunner Island, LLC installed additional temperature and dissolved oxygen dataloggers to support the evaluation of the potential effects of the BISES thermal discharge on the protection and propagation of a BIC. These dataloggers were installed consistent with the locations identified in the approved Work Plan and will be used to supplement the existing array of temperature dataloggers deployed within the vicinity of BISES since 2007.

The six additional temperature and three dissolved oxygen dataloggers were installed in June 2019. Dataloggers have been recording measurements at 15-minute intervals and will be monitored at least monthly until they are removed at the end of the 2020 summer season.

### **Unit Shutdown Monitoring**

To address the potential impact of the sudden shutdown of a generating unit on aquatic life, The Work Plan included the completion of two onsite monitoring events during a planned unit shutdown. The monitoring events will occur during the winter months when the helper cooling tower is not in operation (approximately December 1 through February). The goal of the shutdown monitoring is to measure thermal plume characteristics during a planned unit shutdown in winter when the delta temperature between the effluent temperature and ambient river temperature is greatest. These data will be used to support development of the thermal plume model.

The first unit shutdown monitoring event occurred on February 15, 2020. A ‘baseline’ flight took place on February 14, 2020 during operation of all three generating units to capture thermal characteristics within the discharge canal and Susquehanna River during facility operation. Data



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are being extracted for use in the thermal plume model. The second unit shutdown monitoring event is anticipated prior to March 1, 2021.

**Closing**

Activities anticipated to occur during the remainder of the 2020 variance demonstration study period include ongoing monitoring of the supplemental water quality dataloggers and their removal at the end of the 2020 summer season, evaluation of water quality data, and potential implementation of the winter fish and unit shutdown monitoring events.

Burns & McDonnell appreciates this opportunity to be of continued service to Talen Energy. If you have any questions regarding this 2020 Semi-Annual Progress Report, please do not hesitate to contact me at (610) 348-7439 or [cwwiggins@burnsmcd.com](mailto:cwwiggins@burnsmcd.com).

Sincerely,

A handwritten signature in blue ink, appearing to read 'Chris Wiggins'.

Chris Wiggins  
Project Manager