PennEast Pipeline Company, LLC

PENNEAST PIPELINE PROJECT

APPENDIX L-4C
POST-CONSTRUCTION WETLAND AND WATERCOURSE MONITORING PLAN

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Submitted by:

PennEast Pipeline Company, LLC

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Acronyms and Abbreviations

Monitoring Plan	Post-Construction Wetland and Watercourse Monitoring Plan
PADEP	Pennsylvania Department of Environmental Protection
PennEast	PennEast Pipeline Company, LLC
PEM	palustrine emergent
PFO	palustrine forested
Project	PennEast Pipeline Project
PSS	palustrine scrub shrub
ROW	right-of-way
USACE	U. S. Army Corps of Engineers

1.0 INTRODUCTION

PennEast Pipeline Company, LLC (PennEast) has prepared this Post-Construction Wetland and Watercourse Monitoring Plan (Monitoring Plan) for the Pennsylvania portion of the PennEast Pipeline Project (Project). The Project consists of the following primary components within Pennsylvania:

- The PennEast mainline route pipeline will be an approximately 115-mile long new pipeline starting in Luzerne County, Pennsylvania and extending to Mercer County, New Jersey. Approximately 77.5 miles of the mainline route pipeline is located in Pennsylvania. Pennsylvania counties traversed include Luzerne, Carbon, Monroe, Northampton, and Bucks.

- The 4-inch diameter Blue Mountain Lateral will be an approximately 0.5-mile new pipeline in Carbon County, Pennsylvania.

- The 24-inch diameter Hellertown Lateral will be an approximately 2.1-mile new pipeline in Northampton County, Pennsylvania.

- One new compressor station in Kidder Township, Carbon County, Pennsylvania.

- Various associated aboveground facilities including interconnects, meter stations, launchers, receivers, mainline block valves and appurtenances to support the pipeline system.

As described in the Environmental Assessment Module 4 (JPA Section L-4), the Project will temporarily impact wetlands and watercourses in Luzerne, Carbon, Northampton, and Bucks counties. Wetlands and watercourses will be restored to pre-construction contours, to the extent practicable, and wetlands and watercourse banks will be reseeded to stabilize the impact areas. Conservation seed mixes will be used to promote native plant communities that are adapted to wetland and riparian conditions. Palustrine forested (PFO) wetlands, palustrine scrub-shrub (PSS) wetlands, and forested riparian areas will be replanted with native tree and shrub species in areas outside of a 30-foot wide maintained right-of-way (ROW) that is centered on the pipeline (see Appendix L-4A – Wetland and Riparian Reforestation Plan).The construction of the pipeline will have no net loss in wetland resource area but will result in a conversion of type of wetland. The aboveground facilities will result in the loss of approximately 0.036 acres of PEM wetlands and 0.024 acres of PFO wetland mosaic.

PennEast will monitor and record the success of the wetland and watercourse crossing restoration through annual post-construction monitoring conducted for a minimum of five years, or until restoration is considered successful by the U.S. Army Corps of Engineers (USACE) and the Pennsylvania Department of Environmental Protection (PADEP). Monitoring will be conducted by qualified biologists for a minimum of twice a year for the first three years and once a year for the remaining two years. A restoration report will be completed after each monitoring event and submitted to PADEP and USACE by December 31st discussing the results of the post-construction monitoring efforts and providing photographic documentation of the restoration.

2.0 PERFORMANCE STANDARDS

Wetland restoration will be considered successful if the restored wetland is similar in size and value to the pre-construction wetland area; thus, wetlands will be monitored on grade, percent vegetative cover, vegetation vigor, and community composition. Watercourses will be evaluated based on consideration of typical watercourse characteristics such as defined streambed and stream banks, exclusion of terrestrial vegetation, hydrologically-sorted substrate material, and the presence of an ordinary high water mark.

The following criteria will be used to assess wetland and watercourse restoration success:

2.1 WETLANDS

- Pre-construction wetland contours have been restored to the greatest extent practicable, and excess fill has been removed;
- The affected wetland meets wetland criteria (hydric soils, wetland hydrology, a dominance of hydrophytic vegetation) as defined on the appropriate USACE Regional Supplement Wetland Determination Data Form (USACE, 2012a and 2012b);
- Vegetation is at least 80 percent of either the type of cover documented for the wetland prior to construction, or at least 80 percent of the type of cover in adjacent wetland areas that were not disturbed by construction;
- At the end of two growing seasons, revegetated areas will have 100% cover, with at least 85% cover of hydrophytic species (FAC, FACW, and/or OBL); and
- Invasive species or noxious weed percent aerial cover, if present, does not exceed the abundance of invasive species in the adjacent areas that were not disturbed by construction.

2.2 WATERCOURSES

- Pre-construction watercourse contours have been restored to the greatest extent practicable, and excess fill has been removed;
- The affected watercourse crossing demonstrates a stable watercourse channel with reference to the prevention of erosion and sedimentation of receiving waters. The affected watercourse reach will be compared to the adjacent, non-impacted watercourse reaches outside of the Project works areas.

3.0 MONITORING

3.1 WETLANDS

Impacted wetlands will be monitored for a period of not less than five years, or until restoration is considered successful, as defined under Section 2.0-Performance Standards and agreed upon with the USACE and PADEP. The monitoring will include biannual inspections by a qualified biologist for the

first three years and annual inspections for an additional two year, unless otherwise approved in writing by the PADEP. The inspections will occur during the growing season.

The biologist will submit reports to the PADEP/USACE after each visit that documents the restoration progress of the impacted wetlands. The report will reflect the conditions of the restored wetlands at the time of the monitoring field inspections and will include:

- A summary of development and restoration of each impacted wetland to date;
- A list of plant species used for revegetation in wetlands;
- The approximate percent coverage of vegetation within each impacted wetland;
- The approximate percent coverage of hydrophytic vegetation within each impacted wetland;
- The approximate percent survivorship of planted trees and shrubs within impacted wetlands, where applicable;
- The approximate percent coverage of invasive species in each wetland and a qualitative comparison to adjacent areas that were not disturbed by construction activities;
- A USACE Wetland Determination Data Form completed within each restored wetland (USACE, 2012a and 2012b);
- Photographs of the conditions at each restored wetland (with location orientation).

In the event that the wetland monitoring inspections reveal issues with achieving the aforementioned performance standards, the post-inspection wetland monitoring report will also include a discussion of recommended remedial measures to rectify existing or developing issues that have been encountered or are anticipated. If any remedial actions are necessary, they will be discussed with the USACE and PADEP before implementation. If performance standards are met for any wetlands before the end of the 5-year monitoring period, PennEast may request PADEP and USACE consideration for an early release of monitoring requirements for those restored wetlands.

3.2 WATERCOURSES

The restored watercourse crossings will be monitored for a period of not less than five years, or until restoration is considered successful, as defined under Performance Standards. The watercourse monitoring will be conducted concurrently with wetland monitoring and will be performed be a qualified biologist. Watercourse reaches impacted by the Project will be evaluated in comparison to directly-adjacent, off-ROW watercourse reaches.

The biologist will submit the monitoring reports to the PADEP/USACE as part of an annual wetland and watercourse monitoring report. The report will reflect the conditions of the restored watercourses at the time of the monitoring field inspections and will include:

- A summary of development and restoration of each impacted watercourse crossing to date;

- Evaluation of bank stabilization and evidence of erosion or sedimentation;
- A list of plant species used for revegetation on riparian upland areas adjacent to watercourse crossings;
- Photographs of the conditions at each restored watercourse crossing;
- Visual assessment of fishery resources and habitat; and
- Discussions detailing any existing or developing issues which have been encountered or are anticipated.

If performance standards are met for any watercourses before the end of the 5-year monitoring period, PennEast may request PADEP and USACE consideration for an early release of monitoring requirements for those restored watercourses.

3.3 FEDERAL ENERGY REGULATORY COMMISSION REPORTING

Within 3 years after construction, PennEast will submit a report to the Federal Energy Regulatory Commission (FERC) that identifies the status of wetland revegetation efforts and documents success as defined in *Wetland and Waterbody Construction and Mitigation Procedures* (FERC, 2013). For any wetland where revegetation is not successful at the end of 3 years, PennEast will submit a remedial revegetation plan, and will continue to monitor and report annually until revegetation is successful.

4.0 REFERENCES

Federal Energy Regulatory Commission. 2013. *Wetland and Waterbody Construction and Mitigation Procedures*. May 2013. http://www.ferc.gov/industries/gas/enviro/procedures.pdf.

United States Army Corps of Engineers (USACE), 2012a. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region*, Version 2.0, ERDC/EL TR-12-9. USACE United States Army Engineer Research and Development Center; Vicksburg, Mississippi.

USACE, 2012b. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region*, Version 2.0, ERCD/EL TR-12-1. USACE United States Army Engineer Research and Development Center; Vicksburg, Mississippi.