

**PENNEAST CARBON COUNTY JOINT PERMIT APPLICATION**

**APS ID# 893362, AUTH ID# 1111981**

**DEP Application No. E13-185**

**RESPONSE TO PADEP 7/3/19 TECHNICAL DEFICIENCY LETTER**

Comment Number	PADEP Comment	PennEast Response
CA-1	It appears that the Northampton fees (file B_Northampton JPA Fees) was uploaded instead of the Carbon County document. Please provide the Carbon County JPA fees document. [25 Pa. Code §105.21(a)(1)]	The fee summary table and detailed riverine, lacustrine, and wetland fee calculations are included in this submittal (JPA Section B Fees).
CA-2	Please provide the stream bank stabilization method on the Erosion and Sediment (E&S) Control Plan's information ribbon. The stream bank stabilization method should be included for each stream that will be crossed by the pipeline and/or access roadway. Please revise accordingly. [25 Pa. Code §105.13(g)]	Figure 21 in JPA Section H-1: E&S Details demonstrates PennEast's proposed stream bank stabilization approach. Briefly, this includes restoring the natural grade, using native material for streambed restoration, and NAG SC150/C125 erosion control blanket from top of bank outward (100 feet in special protection watersheds and 50 feet in non-special protection watersheds). Since this stream bank stabilization method is being proposed at all open cut stream locations, stream bank stabilization method was not provided as a band on the alignment sheets. However, bore pit and HDD locations (trenchless stream crossings) are shown on the JPA Section H-1: E&S alignment sheets and in these locations no restoration will be required.
CA-3	Please revise the Stream Bank Stabilization Detail on the Erosion and Sediment (E&S) Control Plans to clearly show that natural streambed material will be placed within the streambed only. The detail shows natural streambed material extending up the banks of the stream. [25 Pa. Code § 105.311]	Figure 21 in the JPA Section H-1: E&S Details has been revised accordingly.

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CA-4	If there is a potential that riprap bank stabilization may be required, please provide a Riprap Bank Stabilization Detail on the Erosion and Sediment (E&S) Control Plans. [25 Pa. Code § 105.13(g)]	Riprap bank stabilization is not proposed in order to foster the vegetative growth within and along the stream. In addition, the use of riprap may increase the thermal impacts to a waterbody compared to vegetative regrowth which may shade the water. Therefore, a riprap bank stabilization detail has not been provided. Refer to Figure 21 in the JPA Section H-1: E&S Details for the proposed stream bed and bank stabilization methods.
CA-5	It appears that there are streams and wetlands that do not have erosion and sediment control best management practices (BMPs) proposed to protect the stream or wetland from sediment deposition during construction of the pipeline. Please check each crossing and provide adequate erosion and sediment control BMPs. Please revise the plans accordingly. [25 Pa. Code §105.13(g)]	PennEast has revised the plans in JPA Section H to include adequate E&S BMPs at stream and wetland crossings. Sediment barriers have been placed adjacent to all streams and wetlands.
CA-6	It appears there are several wetlands and watercourses with inconsistencies in respect to the municipality where the resource is located on both the Aquatic Resources Impact Table (ARIT) and the Site-Specific Mapping. Please provide consistent municipality locations for watercourses and wetlands. Please revise all corresponding documentation accordingly (i.e. 110316_GM_1003_I_MI has Bethlehem Township which is not located within Carbon County). [25 Pa. Code §105.21(a)(1)]	PennEast has revised the ARIT in JPA Section A-1 and the site-specific drawings in JPA Section H-2 to reference the municipality where the impact would occur.
CA-7	The ARIT calls out segments of wetlands on separate rows (e.g., 102114_JC_001_PEM -1 and 102114_JC_001_PEM - 2), but Site-Specific Mapping and E&S Plans do not make clear or specify which projection of a wetland corresponds to the ARIT row. Please clarify. [25 Pa. Code §105.21(a)(1)]	The JPA Section H-2: Site-Specific Mapping and JPA Section H-1: E&S Plans have been revised to include a callout for features that are crossed by the Project in more than one location.

Comment Number	PADEP Comment	PennEast Response
CA-8	Per the instructions of 3150-PM-BWEW0557, please provide both the length and width measurements of resource crossings on the ARIT. [DEP Document No. 3150-PM-BWEW0557 and 25 Pa. Code 105.21(a)(1)]	Wetland, watercourse, and floodway lengths and widths are provided on the revised Aquatic Resource Impact Table (ARIT) in JPA Section A-1.
CA-9	In the ARIT, please identify Class A Wild Trout Streams in the Wild Trout column. [25 Pa. Code §105.21(a)(1)]	Class A Trout streams were included in the Wild Trout column but incorrectly labelled as Approved Trout Streams in JPA Section A-1: ARIT. This has been corrected in the ARIT; the number "I" in the Wild Trout Stream column represents Class A Trout Streams, as indicated in the footnote.
CA-10	It appears that there is inconsistency in the labeling of the watercourses between the Erosion and Sediment Control Plans, Site-Specific Crossing Plans, and the Aquatic Resources Impact Table with respect to Waterbody 072618_WA_1006_I_MI and 072618_WA_1002_I_MI. It appears that the waterbody crossing ending in 1002 has been mislabeled on the Erosion and Sediment Control Plans. [25 Pa. Code §105.13(g)]	Watercourse 072618_WA_1002_I_MI was mislabeled as 072618_WA_1006_I_MI on the JPA Section H-1: E&S alignment sheet. This label on the E&S Plan (JPA Section H-1) has been revised.
CA-11	Please provide consistent stationing throughout the pipeline. As an example, the stationing on the Site-Specific Mapping has the stationing starting over at the locations of the resource, while the Erosion and Sediment Control Plans have the stationing continuing along the pipeline. Please revise accordingly. [25 Pa. Code § 105.13(g)]	The JPA Section H-2: Site-Specific Mapping has been revised to include stationing that matches the JPA Section H-1: E&S Plans .

Comment Number	PADEP Comment	PennEast Response
CA-12	<p>It appears that there are wetland, watercourse and floodway permanent impact area values on the Aquatic Resource Impact Table, Subfacility Tables, and Site-Specific Mapping of zero (0.00). The Erosion and Sediment Control Plans show that there will be matting or other impacts located within the following wetlands, watercourses, and floodways of the following resources:</p> <ul style="list-style-type: none"> <li>a. 102114_JC_001A_PSS-2</li> <li>b. 110316_GM_1004_I_MI</li> <li>c. 042115_JC_1005_E_MI</li> <li>d. 040517_BT_1001_E_MI</li> <li>e. 091516_GM_1002_E_MI</li> <li>f. 061715_DB_1001_I_MI</li> <li>g. 122215_DB_1001_P_MI</li> <li>h. 051115_JC_1002_P_MI</li> <li>i. 051115_JC_1001_P_MI</li> <li>j. 041018_WA_1003_I_MI</li> <li>k. 041217_GM_1001_P_MI</li> <li>l. 072618_WA_1010_I_MI</li> <li>m. 072618_WA_1009_I_MI</li> <li>n. 072618_WA_1007_I_MI</li> <li>o. 072618_WA_1004_I_MI</li> <li>p. 041017_GM_1001_P_MI</li> <li>q. 041117_GM_1002_E_MI</li> <li>r. 102114_JC_001A_PSS-1</li> <li>s. 102114_JC_001A_PSS-2</li> <li>t. 102314_JC_002_PFO-1</li> <li>u. 102314_JC_002_PFO-2</li> </ul> <p>Please revise the area to a minimum of 0.001 for consistency. [25 Pa. Code §§ 105.13(g) and 105.21(a)(1)]</p>	<p>As noted in the footnotes of the December 2018 ARIT, Subfacility Table, and Site-Specific Mapping notes, a value of 0.00 denoted impact acreages less than 0.005 acres, and a dash (“-”) denoted no impacts to the wetland, watercourse, or floodway, as applicable. PennEast has edited the JPA Section A-1: ARIT, JPA Section L: affected EA tables, and the JPA Section H-2: Site-Specific Drawings to reflect impacts to the nearest one thousandth of an acre. In instances where impact acreages are less than 0.0004 acres, impacts are rounded to 0.001 acre.</p>

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CA-13	There are several stream crossings that have a waterbody crossing method as DX-NF. However, the E&S Typical Details Sheets do not include a waterbody crossing method DX-NF. Please include this waterbody crossing method to the E&S Typical Details Sheets. [25 Pa. Code §105.13(g)]	Figure 20A "Typical Stream Dry Crossing if no Flow" has been added to the JPA Section H-1: E&S details.
CA-14	There are several stream crossings that have a waterbody crossing method as BX. However, the E&S Typical Details Sheets do not include a waterbody crossing method BX. Please include this waterbody crossing method to the E&S Typical Details Sheet. [25 Pa. Code §§105.13(g) and 105.21(a)(1)]	Figure 35 "Typical Bored Stream Crossing" has been added to the JPA Section H-1: E&S details.
CA-15	The proposed temporary equipment bridge (Flexi-float or portable) crossing does not have any measures to prevent sediment from falling off the sides of the equipment crossing into the stream. Please provide a minimum of a 6-inch high side rail wrapped with geo-textile. [25 Pa. Code §105.13(g)]	The flexi-float or portable temporary equipment bridge (Figure 23) has been removed from the JPA Section H-1: E&S Details.

Comment Number	PADEP Comment	PennEast Response
CA-16	<p>Provide plans or a detail for the restoration of stream beds at open cut stream crossings. This should include replacement of native stream bed material, reestablishment of the thalweg, and assurance that no significant changes in bed grade occur. [25 Pa. Code §§ 105.13(e)(1)(i)(G), 105.13(e)(1)(ix), 105.13(e)(1)(x), 105.15(a)(1), 105.14(b)(4), 105.16(d), and 105.242(c)]</p>	<p>Figure 21 in the JPA Section H-1: E&amp;S Details demonstrates PennEast's proposed stream bank stabilization approach. Briefly, this includes restoring the natural grade, using native material for streambed restoration, and NAG SC150/C125 erosion control blanket from top of bank outward (100 feet in special protection watersheds and 50 feet in non-special protection watersheds).</p> <p>The reestablishment of the thalweg would be part of restoring the natural grade and the native streambed.</p> <p>PennEast intends to assure that no significant changes in the bed grade occur by visually comparing pre- and post-construction conditions. The EI will take pre-construction photos at each of the crossing areas to document the existing conditions and will visually compare the stream bed dimensions and flow patterns to confirm that pre-construction contours have been restored to the extent practicable. The EI will prepare and maintain a record of pre- and post-construction conditions of each stream crossing. The JPA Section M: Erosion and Sediment Control Plan Narrative and JPA Section H-1: E&amp;S General Notes have been revised to include this language.</p>

Comment Number	PADEP Comment	PennEast Response
CA-17	<p>Procedures should take into account the weather forecast and current conditions be implemented prior to stream crossing installations. Such procedures should include a sign-off sheet documenting that the Environmental Inspector, Foreman, and any other responsible individual agree that the crossing can be constructed during that specific time frame. [25 Pa. Code § 105.13(g)]</p>	<p>Prior to commencement of construction activities for a stream crossing installation, an assessment of current weather conditions, weather forecast, and flows of the stream channel for crossing feasibility will be conducted. This determination will be captured in a document requiring sign-off from the Environmental Inspector, Contractor, and PennEast representative that a crossing can be achieved in the projected timeframe. The JPA Section M: Erosion and Sediment Control Plan Narrative and JPA Section H-1: E&amp;S General Notes have been revised to include this language.</p>
CA-18	<p>Please evaluate the need for in-stream supports on temporary equipment crossings of streams. If, upon evaluation, it is determined that supports are required, please provide details and a summary of impacts associated with the in-stream supports. [25 Pa. Code §105.161(a)]</p>	<p>In all instances where an equipment crossing is noted in the ARIT and on plan drawings, PennEast intends to construct a temporary air bridge using equipment mats, or a functional equivalent, as shown on Figure 22 in the JPA Section H-1: E&amp;S Details. Generally, the equipment bridge will span from bank to bank. However, in some cases, a mid-span support may be necessary to support a longer crossing, heavier equipment, and/or due to surrounding steep terrain. Mid-span support would generally be provided by a temporary culvert pipe, which will be sized to convey stream flow and allow for aquatic organism passage. Temporary equipment bridges and associated culverts, where applicable, will be inspected weekly and after runoff events. Accumulated sediment or debris will be removed within 24 hours of inspection so that stream flow is maintained throughout the duration of its use. The temporary impact acreages are quantified in the ARIT.</p> <p>Figure 22 in the E&amp;S Construction Typical (JPA Section H-1) has been revised to include provisions for instream support.</p>

Comment Number	PADEP Comment	PennEast Response
CA-19	<p>The Erosion and Sediment Control Plan Alignment Sheets do not include the temporary equipment crossing method for the stream crossings. Please provide the type of temporary equipment bridge crossing method for each stream that is proposed to be crossed by a temporary equipment bridge. Please show the proposed erosion and sediment control BMPs on the Erosion and Sediment Control Plan Alignment Sheets. Revise the plans and other applicable components of the application appropriately. [25 Pa. Code § 105.13(g)]</p>	<p>In all instances, PennEast intends to construct a temporary air bridge using wooden equipment mats, or a functional equivalent, as shown on Figure 22 in the JPA Section H-1: E&amp;S Details. Generally, the equipment bridge will span from bank to bank. However, in some cases, a mid-span support may be utilized at dry crossing locations. Watercourses that are crossed by a trenchless method that have access provided by a timber bridge across the feature that require mid span supports have been identified on the JPA Section H-2: E&amp;S site specific and JPA Section H-1: E&amp;S drawing packages.</p> <p>Figure 22 has been revised to include provisions for instream support.</p>
CA-20	<p>Tables 11.3, 11.4 and 11.5 in the E&amp;S General Notes mention use of crown vetch in seeding mixtures. DEP does not recommend use of crown vetch. Remove these seed mixture options and consider using native upland seed mixtures as an alternative. [25 Pa. Code §§ 105.13(e) and 105.21(a)(1)]</p>	<p>Tables 11.3, 11.4, and 11.5 in the JPA Section H-1: E&amp;S General Notes have been replaced with revised seed mixes, which do not include the use of crown vetch.</p>
CA-21	<p>You appear to be proposing to construct permanent waterbars upslope of wetlands. These permanent waterbars should not divert surface water from the wetland as this may cause a secondary impact to the downgradient wetlands. Please provide information elaborating on the potentially affected wetland(s) hydrology and whether the proposed permanent waterbars will cause secondary impacts to those wetland(s). [25 Pa. Code §§ 105.18a(b)(1-3) and 105.14(b)(4)]</p>	<p>The PennEast pipeline nominal construction corridor width is 100 feet. The placement of any waterbars within a 100-foot span will nominally impact the flow path of stormwater within a wetland's contributing drainage area. All waterbars proposed were designed to meet the maximum 2% slope across the right-of-way as required by the E&amp;S Manual and the FERC Plan and Procedures. The intent of this requirement is to minimize the discharge from a waterbar to mitigate against accelerated erosion.</p>



Comment Number	PADEP Comment	PennEast Response
CA-22	<p>You appear to be proposing to have permanent water bars discharge within the riparian buffer of streams. The locations of the permanent waterbars should not create an outlet where the banks of the stream have the potential to erode. The permanent waterbars should outlet to mimic the existing conditions and provide sheet flow to then discharge into a surface water. Also, the permanent waterbars should be located outside of the riparian buffer, as practical. [25 Pa. Code § 105.14(b)(4)]</p>	<p>Trench plug and waterbar spacing typically begin at low points, which are usually adjacent to wetlands and streams. Trench plugs are required on either side of a wetland and watercourse, and waterbar spacing begins upslope of the trench plug. All waterbars proposed were designed to meet the maximum 2% slope across the right-of-way as required by the E&amp;S Manual and the FERC Plan and Procedures. The intent of this requirement is to minimize the discharge from a waterbar to mitigate against accelerated erosion. Therefore, the Project design does mimic the existing conditions to mitigate against accelerated erosion adjacent to watercourses.</p> <p>Based on the spacing requirements for waterbars listed in the E&amp;S Manual Chapter 13, depending on the slope of existing grade, the placement of all permanent waterbars outside of riparian zones is not feasible.</p>
CA-23	<p>Please show on the Erosion and Sediment Control Plan Alignment Sheets the locations of the public and private water supplies. [25 Pa. Code §§105.13(e)(1)(ii) and 105.14(b)(5)]</p>	<p>PennEast has prepared separate maps that show the locations of public and private water supplies within the distances from HDDs specified by the PADEP. Within Carbon County, this includes public water supply wells within 0.5 mile of the Beltzville Lake and Interstate 80 HDD bore paths and private water supplies within 450 feet of the Beltzville Lake and Interstate 80 HDD bore paths. This privileged information is provided in JPA Section L-2: EA Module 2, Appendix CA-L-21.</p>
CA-24	<p>The Department does not recommend stockpiling soil or subsoil within the wetland. Evaluate the ability to stockpile soils outside wetland boundaries throughout project when possible. [25 Pa. Code §105.13(e)]</p>	<p>PennEast intends to stockpile soil or subsoil outside of the wetland boundaries to the extent practicable based on considerations of nearby topography, access, and availability of adjacent ATWS.</p>

Comment Number	PADEP Comment	PennEast Response
CA-25	Please clarify what soil is used below the 12-inches in the following statement found in the construction sequencing (File H-1_03) "BACKFILL PIPE TRENCH. BACKFILL THE TOP 12-INCHES OF THE EXCAVATED TRENCH WITH THE STOCKPILED WETLAND SOIL TO MATCH ORIGINAL SURFACE GRADES." [25 Pa. Code §105.13(e)]	Below the 12-inches of segregated topsoil, the pipe trench will be backfilled with previously excavated subsoil to supplement the bedding material. In addition, trench plugs are proposed every 100 feet in a wetland for wetland crossings exceeding 100 feet in length.
CA-26	It appears that several access road (AR) crossings of streams and wetlands have not been accounted for in the Aquatic Resource Impact Table and Site-Specific Mapping (e.g., 012617_GM_1003_I_MI, 071817_MB_1003_I_MI, etc.). Please account for impacts and revise application accordingly. [25 Pa. Code §105.21(a)(1)]	PennEast delineated wetlands, watercourses, and floodways within an approximately 50-foot wide corridor along existing and proposed access roads. In many instances, where a watercourse crosses an access road, there is an existing culvert or bridge that maintains stream flow under the road. PennEast surveyed the culvert locations, assessed the culvert and bridge conditions, and reduced workspace to avoid impacts to culverted and bridged watercourses. Along some access roads, streams flow openly across the existing roads and appear to be forded by road users. PennEast proposes to construct temporary equipment bridges over these streams and impacts to the streams and floodways are addressed in the ARITs in JPA Section A-1 and the EAs in JPA Section L. PennEast also reduced workspace to avoid or minimize impacts to wetlands along access roads wherever possible. Where wetlands cannot be avoided, PennEast will install temporary mats across wetlands to minimize impacts from equipment and truck traffic. PennEast has added clarifying text to Section 1.2.1.2 of the JPA Section J: Project Description Narrative, as well as Table 1.2.3 which summarizes the aquatic resources that have been identified along each proposed access road and whether any impacts are proposed at those resource crossings.

Comment Number	PADEP Comment	PennEast Response
CA-27	<p>It appears that you are proposing to replace several culverts along existing access roads. Please provide hydrologic and hydraulic calculations for the proposed culvert replacements. Also, please be advised that the invert of the culvert must be depressed a minimum of 6-inches below streambed elevation for drainage areas less than one square mile and 12-inches below streambed elevation for drainage areas greater than one square mile. [25 Pa. Code § 105.161]</p>	<p>PennEast proposes to replace one culvert (in kind replacement) and install one new culvert on access roads in Carbon County. All other existing culverts along existing access roads will not be replaced or improved for the Project. PennEast has added Table 1.2.3 to the JPA Section J: Project Description Narrative Section 1.2.1.2 to describe where culverts exist along access roads and whether any improvements are anticipated.</p> <p>As noted in the response to Comment CA-31, the culvert drawings for the culvert replacement on AR-034 were revised to demonstrate that the culvert will be at least 6 inches below the existing streambed (JPA Section N: Hydrology and Hydraulics Analysis).</p> <p>The new box culvert proposed for the Kidder Compressor Station access road will be installed a minimum of 12 inches below the existing stream bed and covered with at least 12 inches of natural substrate (JPA Section N: Hydrology and Hydraulics Analysis).</p>
CA-28	<p>Please provide the culvert length from the upstream face to the downstream face on the Kidder Compressor Proposed Culvert Plans and the Access Road AR-034 Plans. [25 Pa. Code §105.166(a)]</p>	<p>The culvert length is 41 feet as indicated in Drawing No. 000-03-03-020.4 in the Kidder Compressor Station Access Road Culvert Sizing Analysis Report provided in December 2018 JPA Section N.</p>
CA-29	<p>Please provide endwall details for the proposed culvert on the Kidder Compressor Proposed Culvert Plans and the Access Road AR-034 Plans. [25 Pa. Code §105.166(c)]</p>	<p>End wall details for Kidder Compressor Station access road culvert are provided on JPA Section N: Hydrology and Hydraulics Analysis Drawing No. 023-03-07-001. End wall details for Access Road AR034 culvert replacement are provided on JPA Section N: Hydrology and Hydraulics Analysis Drawing No. 000-03-03-020.1_A1 .</p>

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CA-30	Please provide the data in a digital format that was used in the HEC-RAS modelling for the Kidder Compression Station Culvert and Access Road AR-034 culvert. [25 Pa. Code §105.161(a)]	A CD with HEC-RAS model digital data is included with this submittal (JPA Section N-1).
CA-31	The proposed Access Road AR-034 culvert must be depressed a minimum of 6-inches below natural streambed elevation since the drainage area is less than one square mile (640 acres). Please revise the plans and calculations accordingly. [25 Pa. Code §105.161(a)(3)]	The proposed culvert drawings were revised to demonstrate the proposed culvert will be at least 6 inches below the existing streambed. Elevations both existing and proposed are noted on JPA Section N: Hydrology and Hydraulics Analysis Section B-B of Drawing No. 000-03-03-020.1_A1.
CA-32	Please provide details for aquatic organism passage for the proposed Access Road AR-034 culvert, the use of riprap, and how the slope of the culvert will tie into existing grade. [25 Pa. Code §§105.14(b)(4) and 105.16(d)]	A three-foot-wide and three-inch-deep low flow channel is proposed in the middle of the riprap apron to facilitate aquatic organism passage. Details of the low flow channel and grade tie-ins are shown on JPA Section N: Hydrology and Hydraulics Analysis Drawing No. 000-03-03-020.1_A1.
CA-33	Please provide Site-Specific Mapping resource impact details for the Kidder Compressor Station, as the plans are greyed out and provide limited details on impact footprints. [25 Pa. Code §§105.13(e) and 105.21(a)(1)]	PennEast has created Site-Specific drawings for the Kidder Compressor Station with callouts that describe the proposed impacts. These include drawing numbers WSS-CA-FAC-001-004, which are provided in the Revised Site-Specific drawings in JPA Section H-2.
CA-34	The pipeline appears to run directly parallel to and under and the stream 110316_GM_1003_I_MI. Please revise the location or discuss erosion protection measures. [25 Pa. Code §105.314]	The location of the pipeline will not be revised. As shown on the plans, erosion control matting will be used adjacent to the stream, and trench plugs will be used on either side of the stream headwater adjacent to the downstream wetland. The stream bed and banks will be stabilized per Figure 21 in the JPA Section H-1: E&S Details.
CA-35	Provide further details for the crossings of wetlands 020117_GM_1001_PUB regarding their depth and what BMPs will be used to protect the resource. Please verify that a wetland mat will be sufficient to cross this wetland or whether a bridge would be more appropriate. [25 Pa. Code §§105.13(e) and 105.21(a)(1)]	020117_GM_1001_PUB was delineated in February 2017. There was approximately 6 inches of standing water/ice present at the time of survey. The timber mats have been revised to a temporary bridge. The other proposed BMPs being used to protect the wetland include trench plugs on either side, and sediment barriers.

Comment Number	PADEP Comment	PennEast Response
CA-36	<p>Pennsylvania Fish and Boat Commission (PFBC) has provided a concern regarding the auger bore near watercourse 041217_GM_1001_P_IN and adjacent wetlands 041117_GM_1001_PFO and 041117_GM_1001_PSS. Discuss methods to ensure groundwater levels are not affected by any dewatering that may be needed within bore pits. If deemed appropriate, consider monitoring wells and providing a monitoring well plan. [25 Pa. Code §105.13(e)]</p>	<p>In Section CA-S-5 of its December 2018 JPA, PennEast provided a trenchless crossings assessment memo for the proposed auger bore near watercourse 041217_GM_1001_P_IN and adjacent wetlands 041117_GM_1001_PFO and 041117_GM_1001_PSS. Section 3 of the memo discussed dewatering activities, and Section 4 presented an assessment of impacts from dewatering. This memo was submitted with the privileged files.</p>
CA-37	<p>Pennsylvania Fish and Boat Commission (PFBC) has provided a concern regarding right-of-way (ROW) slope failure north of Mud Run (Stream 042115_JC_1001_P_IN). Please discuss how construction will minimize the risk of slope failure along this stream. [25 Pa. Code §105.13(e), 105.16(d), 105.313(c), and 105.123 (2)]</p>	<p>PennEast has prepared a technical memo describing how construction and restoration will minimize the risk of slope failure along this stream (Attachment CA-37).</p>
CA-38	<p>Provide adequate provisions for shut-off in the event of pipeline break or rupture. Provide locations and descriptions of how this action will be completed if a break or rupture occurs. [25 Pa. Code § 105.301(9)]</p>	<p>Shut-off provisions were provided in Section 1.1.2.5 of the December 2018 JPA Section J: Project Description Narrative (JPA Section J). As indicated in the text and as required by USDOT Title 49 CFR Part 192, valves must be installed along the pipeline at specified intervals to sectionalize the pipeline. The class location of the pipeline, which is based on the population density near the pipeline, determines the maximum MLV spacing along the pipeline. These valves can be used to shut off the flow of natural gas in the event of an emergency or for planned maintenance and repairs. The MLV locations were provided in Table 1.1-5 of the JPA Section J: Project Description Narrative.</p>

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CA-39	The Cultural Resource Summary indicates there will be an upcoming Determination of Effect Report. Please verify if the proper documentation has been received and update the application where applicable. [25 Pa. Code §§105.13(e), 105.14(b)(5), 105.21(a)(1), and 105.24]	The JPA Section D: Cultural Resources Summary has been updated to include the results of consultation with the Pennsylvania State Historic Preservation Office (PASHPO) since the December 2018 JPA submittal. Correspondence with and reports submitted to the PASHPO can be found in JPA Sections D-1 and D-2. The Determination of Effect Report (PA Effects Report) for architectural history was received by the PASHPO on 5/6/19. The PASHPO responded on 6/5/19 requesting additional information related to Project impacts on resources in Bucks and Luzerne counties. Additional information was provided as an addendum to the PA Effects Report on 7/22/19, and PASHPO concurred with PennEast's recommendations on the Revised PA Route. PennEast submitted an Archaeology Phase I Addendum 5 for workspace changes on 10/1/19, on which PASHPO review is pending.
CA-40	Please update any table in the Environmental Assessment (EA) which may relate to changes to the ARIT. [25 Pa. Code §105.21(a)(1)]	The Environmental Assessment (JPA Section L) documents have been updated to reflect the changes made to the JPA Section A-1: ARIT .
CA-41	For the comprehensive environmental assessment (CEA) and EA Module 3, discuss future potential upgrades to the Kidder Compressor stations, and how potential upgrades may impact wetlands within the limit of disturbance. [25 Pa. Code §§105.13(e) and 105.14(12)]	PennEast does not anticipate future upgrades to the Kidder Compressor Station. If any hypothetical expansion projects were proposed in the distant future, they would be subject to the regulatory requirements and review processes of that time.

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CA-42	EA Module 2, Section S2.A.5, suggests the applicant is still in consultation with the Pennsylvania Department of Conservation and Natural Resources (DCNR) regarding outstanding issues on the Beltzville Lake crossing. Please provide final documentation and revise this section. [25 Pa. Code §§105.21(a)(1) and 105.24]	EA Module 2 (JPA Section L-2) has been revised to clarify that the license agreement for the Beltzville Lake crossing is between PennEast and the USACE. On November 27, 2018 the USACE issued a Finding of No Significant Impacts and a Decision Letter in which the USACE Philadelphia District grants PennEast's request to construct the Project on USACE-owned properties. PennEast continues to work with the USACE through the real estate agreement process. PennEast coordinated with USACE and PADCNr staff during the approximately four-year review process.
CA-43	EA Module 2, Section S2.A.5, suggests the applicant is still in consultation with PADCNr regarding outstanding issues on the Hickory Run State Park and Weiser State Forest impacts. Please provide final documentation and revise application accordingly. [25 Pa. Code §§105.21(a)(1) and 105.24]	As noted in the December 2018 JPA Section L-2: EA Module 2, PennEast has coordinated with PADCNr since 2014 regarding the Project crossing State Parks and State Forests. Since the December 2018 JPA submittal, PennEast and PADCNr have completed additional steps in the State Forest Environmental Review Process, including a Post-Survey Meeting held April 17, 2019. PennEast will continue to coordinate with PADCNr to obtain license agreements to construct and operate the Project from the PADCNr within affected State Parks and State Forests before construction commences. It is PennEast's understanding that no further requests for route or workspace changes are forthcoming in State Parks and State Forests.

Comment Number	PADEP Comment	PennEast Response
CA-44	EA Module 2, Section S2.A.5, states the applicant is continuing coordination with Lehighon Water Authority. Please provide final documentation and revise this section. [25 Pa. Code §§105.21(a)(1) and 105.24]	PennEast consulted with the Lehighon Water Authority on April 23, 2018 to determine the location of surface water intakes for public water supplies near the Project. The Lehighon Water Authority provided location information for three surface water intakes, all of which are greater than 1 mile downstream of the Project (JPA L-2H PRIV). PennEast has revised Section S2.A.5 of JPA Section L-2: EA Module 2 and Section S3.B.1(vi) to reflect the consultation status. PennEast has also provided a copy of the privileged public water supply consultations for Carbon County with this response package. It appears the Luzerne County consultations were inadvertently burned to the Carbon County Privileged DVD in December 2018.
CA-45	EA Module 2, Section S2.A.4 references Appendix CA-L-2C as the location map “that identifies regulated waters of the Commonwealth, natural areas, wildlife sanctuaries, natural landmarks, political boundaries, publicly available service areas for public water supplies, and historic landmarks within 1 mile of the Project and State Parks and prime farmland within 100 feet of the Project....”. Appendix CA-L-2C is not a map. It is the table of prime farmland referenced in EA Module 2, S2.A.5. Please provide the location map for EA Module S2.A.4 or verify if I_LocationMap_2400 is the correct document and correct language in the EA. [25 Pa. Code §§ 105.13(e) and 105.21(a)(1)]	The location map reference in the JPA Section L-2: EA Module 2, Section S2.A.4 has been updated from Appendix CA-L-2C to JPA Section CA-21.



Comment Number	PADEP Comment	PennEast Response
CA-46	Discuss how sensitive resources will be protected and proper vegetation establishment will be assured before agriculture land is handed over to landowner. [25 Pa. Code §105.13(e)]	<p>Upon completion of final grading, the contractor will stabilize disturbed areas within 4 days of the cessation of construction activities. In most areas, this will include seeding with a permanent seed mix and mulching. Wetland and riparian seed mixes will be used where noted on the JPA Section L-4A: Wetland and Riparian Reforestation Plan. Erosion control blankets will be installed along steep slopes and near watercourse crossings in accordance with the JPA Section M: Erosion and Sediment Control Plan. Restoration will be monitored for the overall Project until permanent stabilization is achieved, the PADEP determines that permit conditions have been met, and the PADEP terminates the permit.</p> <p>In cultivated croplands, landowners may request that PennEast not seed the Project area with the Project's seed mixes to prevent the introduction of new plant species to their fields. Landowners may plant crops soon after Project construction is complete, which could be substantially before the entire Project has reached stabilization. Alternately, a cover crop may be used to stabilize the soil. In these instances, PennEast will coordinate with the PADEP and Carbon Conservation District to complete post-construction inspections of agricultural lands. Perimeter BMPs will be removed to allow the farmer access to the Project area, but BMPs along the edges of wetlands or watercourses would be left in place to provide continuous protection of sensitive resources. PennEast would request agency approval to release these areas from the permit's permanent stabilization requirements to allow for continued crop production.</p> <p>PennEast has provided clarification in the JPA Section M: Erosion and Sediment Control Plan .</p>

Comment Number	PADEP Comment	PennEast Response
CA-47	In the EA Module 2, the application indicates Northeastern bulrush surveys still need to be conducted in the Fall 2019. Please provide the report and update the application where applicable. [25 Pa. Code §§105.13, 105.21(a)(1), and 105.24]	The application indicated that surveys were completed on delineated wetlands, and erroneously stated that two properties remained to be delineated. Those properties were delineated before the application was submitted in December 2018, and no wetlands were identified. Therefore, the northeastern bulrush survey report submitted to the USFWS in February 2019 was final. The USFWS concurred that the Project was "not likely to adversely affect" the northeastern bulrush in both 2017 BO and the amended 2019 BO (JPA Section G).
CA-48	The EA Module 2, Section S2.C, indicates coordination with Pennsylvania Game Commission (PGC) is ongoing and that the U.S. Fish and Wildlife Service (USFWS) recommends the Federal Energy Regulatory Commission (FERC) re-initiate consultation. Please provide final reports and clearances from applicable agencies and revise this section. [25 Pa. Code § 105.21(a)(1)]	Final clearance from the PGC (January 9, 2019) and USFWS (July 29, 2019) are found in the updated JPA Section G: Pennsylvania Natural Diversity Inventory. This has been updated in JPA Section L-2: EA Module 2, section S2.C.
CA-49	Please supply the consultation update letter from the USFWS regarding the modified 2017 Biological Opinion and discuss any changes to avoidance and minimization plans. [25 Pa. Code §§105.13(e), 105.14(b)(4),105.21(a)(1), and 105.24]	This letter is included in the updated JPA Section G-1 and G-2. Requirements remain the same under the updated BO for the federal species of concern. PennEast has voluntarily committed to additional measures in a state-level Biological Assessment at one bog turtle site in Northampton County, which is currently being reviewed by the PFBC.
CA-50	EA Module 2, Section S2.D.1, states, "Following restoration, a 50-foot-wide permanent right-of-way (ROW) will be maintained for the life of the pipeline. No trees will be permitted to grow within that width." Module 3 and 4 discuss a 30-foot corridor for tree cutting. Please clarify and revise application as needed. [25 Pa. Code §§ 105.21(a)(1)]	PennEast has revised JPA Section L-2: EA Module 2 to clarify that a 30-foot operational ROW will be maintained for the life of the Project.
CA-51	In the EA Module 3, Section S3A, provide a final summary of total impacts for each table (Tables L3-1 through 4). [25 Pa. Code §105.21(a)(1)]	Total impact rows have been added to each table in JPA Section L-3: EA Module 3.

Comment Number	PADEP Comment	PennEast Response
CA-52	Please provide the invasive species plan (ISMP) referenced in Module 3 of the EA. Clarify and indicate if this plan will be used during the monitoring periods for the ROW and compensatory mitigation sites. [25 Pa. Code §105.13(e)]	The Invasive Species Management Plan (ISMP), included in this response as JPA Section L-3: EA Module 3 Appendix CA-L-3I, has been prepared to provide BMPs that should be implemented within the workspace required to construct the pipeline and has not been prepared to address offsite mitigation sites. Invasive species management for the compensatory mitigation sites is addressed in Section 6.1.4 of the JPA Section L-4B: Compensatory Wetland Mitigation Plan.
CA-53	In reference to the following statements in the EA Module 3, “Selectively clearing, by hand methods, a 30-foot wide operational easement to improve line of sight between pipeline markers where horizontal directional drillings (HDD) are proposed” and “Wetland systems comprised of forested communities will be allowed to revert back to their original site condition (excluding locations maintained for line of sight),” please specify how much tree clearing will be done in the floodway and wetland for both the project construction and operation and maintenance (O&M) for the HDD crossings. Please note clearing of trees in PFO wetlands will be considered conversion and require mitigation. [25 Pa. Code 105.302(6)]	Minor hand clearing between HDD entry and exit points is expected to include branch and low sapling/shrub clearing to maintain line of sight in between pipeline marker posts, typically the width of a walking trail. This would include branches at a height of eye level to the ground (to prevent a safety hazard to operation personnel) and cutting sapling/shrubs near the surface to avoid tripping hazards. By accommodating safety considerations for operation personnel, PennEast will eventually end up with a line of sight for placement of marker posts. It is common industry practice to place these posts at intervals of between 200 and 300 feet. Spacing could be closer to accommodate changes in topography and/or when mature trees are encountered. There will be no cutting of mature trees for line of sight or marker posts. Section S3.D.2(iii) of JPA Section L-3: EA Module 3 has been revised to include this clarification.

Comment Number	PADEP Comment	PennEast Response
CA-54	<p>Per the EA instructions S3C10 and EA Appendix V (3150-PM-BWEW0017), please provide the key details for each subfacility. In addition, after consultation with the Bureau of Waterways Engineering and Wetlands, WETRE will not be a required subfacility on the pipeline, it may be required for offsite mitigation locations. Please use PIPE, which should include O&amp;M; FLACT for floodway impacts not associated with pipe, such as access roads; and TMPWI for wetland disturbance areas during construction. WTDIM may be used at the compressor station, where fill in wetlands will occur. At this time, WTIIIM will not be required if the disturbance is captured in TMPWI. Neither WTIIIM nor TMPWI is required for horizontal directional drilling (HDD) bored pipe impacts. [25 Pa. Code § 105.21(a)(1)]</p>	<p>The subfacility tables in JPA Section L-3: EA Module 3, Appendix L3-A have been revised as requested.</p>
CA-55	<p>In the EA Module 3, PennEast discusses reducing workspace to 75-feet with a 30-foot-wide permanent ROW in Hickory Run State Park. Explain why such standards cannot be applied to other key areas to reduce impacts to resources and the environment including forests. [25 Pa. Code §105.13(e)]</p>	<p>PennEast agreed to the 75/30 workspace configuration through Hickory Run State Park after consideration of constructability, terrain, access, and operability/maintenance of the pipeline system. In addition, PennEast has reduced workspace through Pinchot and Weiser State Forests. PennEast has also committed to reduced workspace through smaller and isolated key areas such as delineated watercourses, floodways, and wetlands where practicable and has implemented trenchless crossing methodologies through many sensitive areas. For parcels managed by the PGC and PADCNr, the likelihood of encroachments upon the PennEast easement and 3rd party damage upon the pipeline is reduced and a 30-foot permanent easement can be accommodated without compromising or increasing threats to the integrity of the pipeline system.</p>
CA-56	<p>Wetland 061615_DB_1002_PFO data form does not contain soil data, stating “soils TBD”. Provide complete and accurate datasheets. [25 Pa. Code §105.21(a)(1)]</p>	<p>Soils profile data has been added to the wetland data sheet for Wetland 061615_DB_1002_PFO. A revised data sheet is included in a replacement of the Wetland Delineation Report Appendix C-2 (JPA Section L-2B Appendix C-2).</p>

Comment Number	PADEP Comment	PennEast Response
CA-57	<p>It appears a stream enclosure of stream 041017_GM_1001_P_IN is proposed. The proposed stream enclosure must pass the flows from a flood of a 100-year frequency. Also, it appears that stream 041017_GM_1001_P_IN will discharge into stream 041117_GM_1002_E_MI through the proposed stream enclosure. Please provide calculations showing that the discharge will not cause erosion of the channel. Lastly, stream 041117_GM_1002_E_MI may have secondary impacts associated with the stream enclosure, which may cause the loss of stream from the headwaters to the outfall of the stream enclosure. Please provide information indicating that there will not be a loss of stream. [25 Pa. Code §105 Subchapter D, 25 Pa. Code §105.181, 25 Pa. Code §105.191, 25 Pa. Code §105.201, 25 Pa. Code §105.301(6), 25 Pa. Code §105.231]</p>	<p>The area at milepost 0.53R3 of the Blue Mountain Interconnect has a couple of watercourse features that are of a unique arrangement. The watercourses that have been delineated in this area are 041017_GM_1001_P_MI, which continues downslope to form 041017_GM_1001_P_IN, and 041117_GM_1002_E_MI. The first watercourse, 041017_GM_1001_P_MI, is an approximately 4-ft wide perennial stream that flows along the south side of the dirt/gravel access road before being culverted underneath the access road (Attachment CA-57 Photo 1). The existing access road along the transmission line will be utilized for the Project due to the area's topographic constraints. No modifications are anticipated to 041017_GM_1001_P_IN for the portion culverted along the access road.</p> <p>Once the feature reaches the north side of the access road (Attachment CA-57 Photo 2), the watercourse flows through approximately 275 feet of flexible 8-inch diameter plastic culvert that is located on the soil surface (Attachment CA-57 Photo 3 - 5). During a walkthrough with USACE along this section of pipe, no discernable channel or evidence of a remnant stream were observed. No interruptions are located along the piped section which conveys watercourse 041017_GM_1001_P_MI over the upland landscape to its designation as 041017_GM_1001_P_IN (Attachment CA-57 Photo 6). Watercourse 041117_GM_1002_E_MI (Attachment CA-57 Photos 7 and 8) is an approximately 3-foot wide headwater channel that flows into watercourse 041017_GM_1001_P_MI at the location where the watercourse exits the corrugated plastic pipe. Its primary flow makeup is derived from overland flow from the access road located upslope from the feature.</p>

Comment Number	PADEP Comment	PennEast Response
CA-58	Based on aerial photographs and photographs provided in the application, wetlands 082515_BT_003_PEM, 110316_GM_1001_PEM_3, 010716_GM_1001_VP, 020117_GM_1001_PUB, and 082515_BT_004_PEM appear to have significant canopy cover. Overhanging strata can impact the function of wetland systems even without having roots directly within wetland. Please reevaluate whether these wetlands should be considered forested and how tree removal around this wetland may affect wetland functions. [25 Pa. Code §§105.18(b)(1) and 105.13(e)]	PennEast re-evaluated the classification of these PEM, VP, and PUB wetlands and determined that each was accurately classified in its December 2018 JPA. Attachment CA-58 provides a justification for each wetland listed in PADEP's Technical Deficiency Comment.
CA-59	Wetland 102114_JC_001_PEM is labeled as PEM but is mapped as a PFO on the Photo Maps (file K) and appears to be at a different location on the Site-Specific Mapping. Please revise accordingly. [25 Pa. Code §105.21(a)(1)]	Wetland 102114_JC_001 is a large wetland complex that contains PEM, PSS, and PFO components. PennEast has revised the photo maps (JPA Section K) and the site-specific mapping (JPA Section H-2) to clearly label the wetland and watercourse Resource IDs and crossing number at each proposed impact location.

Comment Number	PADEP Comment	PennEast Response
CA-60	<p>The Department was unable to corroborate the wetland boundaries provided by the applicant at the proposed Kidder Compressor station. Please flag all wetland boundaries at this site. Provide the Department an updated wetland delineation for this facility. Include upland data points to separate wetland boundaries. [25 Pa. Code §§105.18(b)(1) and 105.13(e)]</p>	<p>PennEast reflagged the wetland boundaries at and surrounding the proposed Kidder Compressor Station in July and August 2019. Although the delineation boundaries had been confirmed during site visits with the USACE in November 2015, PennEast adjusted some delineated boundaries to reflect current conditions at the site, which may have resulted from hydrologic changes due to recent beaver activity north of the site. Additional upland data sheets were also completed. A report documenting the confirmed and revised delineation boundaries, photographs of current conditions, and additional upland data forms are included in a Wetland Delineation Report Addendum (JPA Section L-2B).</p> <p>Representatives from the USACE and the PADEP participated in a site visit on August 22, 2019 to verify the accuracy of the revised wetland delineation. No changes were made to the 2019-revised delineation boundaries at the Kidder Compressor as a result of that site visit.</p>
CA-61	<p>The Department identified additional potential receiving waters north of the proposed Kidder Compressor Station (tangent to 082515_BT_1001_P_IM / 102114_JC_1001_P_MI) that are not included within the permit application. Please update application materials to include all potential receiving waters. [25 Pa. Code §§105.13(e)(1)(i)(A)]</p>	<p>PennEast acknowledges that an unnamed tributary of Black Creek exists north of the proposed Kidder Compressor Station. This stream is crossed by the proposed access road to the compressor station (082515_BT_1001_P_IM) and by the pipeline approximately 0.4 river miles upstream (102114_JA_1001_P_MI) of the access road. Approximately 1,200 feet of stream channel between these two surveyed stream segments has not been delineated, as it is on an adjacent parcel, and at its closest point is more than 150 feet from the workspace limits, thereby not affecting a riparian buffer. PennEast has sketched the approximate location of this unaffected stream reach using aerial photography. The sketched stream is shown in the Wetland Delineation Report Addendum in JPA Section L-2B.</p>

Comment Number	PADEP Comment	PennEast Response
CA-62	<p>The Cumulative Impacts analysis notes 3.84 acres of permanent PFO/PSS wetland impacts from the 30-foot maintained ROW. Please note, for the purposes of mitigation, all cleared PFO and grubbed PSS wetlands must be calculated and mitigated for, regardless of location on or off permanent ROW. Please revise application accordingly, including mitigation documents. [25 Pa. Code §§105.14(b)(13) and 105.20a(a)]</p>	<p>The intent of the JPA Section L-3F: Cumulative Impacts Analysis was to assess the cumulative impacts of the project and other existing and potential projects, including direct and secondary impacts that are permanent in nature, as required by 25 PA Code Sections 105.13(e)(1)(x), 105.18(a)(6) and 105.18a(b)(6) and as described in PADEP's Guidance Document for the Comprehensive Environmental Assessment of Proposed Project Impacts for Chapter 105 Water Obstruction and Encroachment Permit Applications. PennEast proposes offsite compensatory mitigation for permanent impacts, which include the permanent conversion of wetland cover types, periodic impacts from maintenance activities, and wetland fill). PennEast proposes to mitigate temporary wetlands impacts with onsite restoration and reforestation as described in the Mitigation Plan (EA Module 4, JPA Section L-4).</p>



<p>CA-63</p>	<p>Please include in the HDD Inadvertent Returns and Contingency Plan and the Erosion and Sediment Plans provisions to contact the Department immediately by email, phone, or electronically delivered letter if a loss of pressure or an inadvertent return occurs during the horizontal directional drilling operations. Drilling operations should not continue until a Professional Engineer (PE) or Professional Geologist (PG) has performed an inspection of the drilling site and drill alignment. The PE or PG should then notify the Department in writing that the drilling can commence without the risk of an inadvertent return.</p> <p>Should an inadvertent return occur during drilling operations, a Re-evaluation Report should be submitted to the Department by the PE or PG examining the drilling alignment and ensuring that another inadvertent return is unlikely. The Department will need to review this submitted information and approve the restarting of drilling operations. [25 Pa. Code § 105.302(6)]</p>	<p>PennEast does not consider a pressure drop on its own to warrant a PADEP notification per the following rationale. A downhole pressure drop in itself is not a strong indicator of an occurrence of an inadvertent drilling fluid return, as downhole drilling fluid pressures fluctuate regularly as the drill bit is advanced through the subsurface materials. Downhole drilling fluid pressure fluctuations are common and arise from the interaction of the downhole tooling and cuttings as the cuttings work or move past the downhole drilling assembly. As the cuttings move past the downhole drilling assembly, the downhole drilling fluid pressure can increase in response to a buildup of cuttings behind the drill bit. These types of drilling fluid pressure increase events are short lived and typically do not result in any appreciable loss of drilling fluid returns or an inadvertent drilling fluid return as they occur momentarily during the drilling process. Often, when the required drilling fluid pressure increases, the drill rig operator ceases forward progress and the drilling assembly is pulled back through the bore to swab it and clear any blockage or deposit of cuttings that has accumulated behind the drill bit. As a slug of cuttings is cleared during this swabbing event, the observed downhole drilling fluid pressures decrease back down to the anticipated drilling fluid pressure magnitudes associated with the advancement of pilot bore. It is not anticipated that these types of events meet the requirements to notify any agencies or regulatory entities. Again, these types of pressure increase events are common to the HDD drilling process and the loss of drilling fluid pressure associated with the clearing of these events does not necessarily relate to an inadvertent drilling fluid return, especially when full drilling fluid returns are occurring back to the drill rig.</p> <p>Close monitoring of the downhole drilling fluid pressures during pilot bore drilling operations and reacting quickly to the</p>
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Comment Number	PADEP Comment	PennEast Response
		<p>buildup of unanticipated drilling fluid pressures is key to preventing the migration of drilling fluids up through the subsurface/geotechnical materials that can result in an inadvertent return. Reacting quickly to higher than anticipated drilling fluid pressures will reduce the probability of an inadvertent drilling fluid return. In the event a large unaccounted-for drilling fluid pressure loss occurs, accompanied by significant losses in drilling fluid return volumes at the drill rig entry location that swabbing does not restore drilling fluid flow, the HDD Contractor will enact the HDD Inadvertent Return and Contingency Plan (JPA Section L-3C) and the appropriate notifications will be provided.</p> <p>Section 6.9 of the HDD Inadvertent Return and Contingency Plan has been revised to state, "Following an inadvertent release of drilling fluid, and after containment is achieved, drilling operations may continue if the root cause of the return is determined and a plan is developed to reduce or eliminate the risk of reoccurrence (re-evaluation report). This will take place under the supervision of a PE or PG, who will inspect and report back to PADEP. Construction activities will not restart without prior approval from PADEP and PennEast."</p>

Comment Number	PADEP Comment	PennEast Response
CA-64	An analysis of well production zones was not evaluated. Please provide this analysis. [25 Pa. Code §105.14]	PennEast has contacted potential public water suppliers within 0.5 mile of HDDs to request feedback on whether any public water supply wells are within that buffer, and, if so, for information that can be used to conduct a well production zone analysis. To date, no public water supply wells have been identified within 0.5 mile of HDDs. PennEast will continue with outreach efforts described in response to CA-65 and in the revised JPA Section L-2: EA Module 2 and Section L-3: EA Module 3. If any public water supply wells are identified, PennEast will conduct a well production zone analysis.
CA-65	All private water supply wells located within 450-feet of the bore path and public water supply wells within 0.5-mile radius of the bore path should be identified. A physical investigation of the area should be conducted due to online resources being unreliable for listing public and private water supply well locations. [25 Pa. Code §§105.13(e)(1)(ii) and 105.14(b)(5)]	<p>As described in December 2018 JPA Section L-2: EA Module 2 Section S2.A.5, PennEast used a combination of the PaGWIS database, consultations with public water suppliers, and outreach to landowners to determine the location of groundwater wells within 150 feet of the workspace and 500 feet of the workspace in karst areas and near HDDs. In response to PADEP comments, PennEast has expanded the search radius surrounding the I-80 and Beltzville Lake HDDs to 0.5 mile for public water supplies.</p> <p>PennEast revised JPA Section L-2: EA Module 2 Section S2.A.5 and JPA Section L-3: EA Module 3 Section S3.B.1(vi) to provide a more detailed explanation of the data collection methods, discuss the expanded search radii near HDDs, present the information PennEast has collected to date in this continuous research effort, and explain the monitoring and notification programs PennEast will implement.</p>

Comment Number	PADEP Comment	PennEast Response
CA-66	<p>The Department recommends that any private or public water supplies within the requested search radii be sampled pre- and post- construction for water quality, yield, and turbidity parameters for horizontally directionally drilled pipeline section. Additional supply wells outside of the search radius that are determined to be at high risk for impact (e.g. along a fault line) should also be included. [25 Pa. Code §105.14]</p>	<p>PennEast has committed to offer pre- and post-construction testing of private and public water supply wells within 150 feet of Project workspace and within 500 feet of the Project workspace in karst terrain. The monitoring radius will be expanded to 450 feet at HDDs and to 1,000 feet at HDDs in karst areas. The water quality testing procedures and parameters are included in PennEast’s Well Monitoring Plan (JPA Section L-3G). This plan has been revised to include the expanded well buffer of 1,000 feet for HDDs in karst areas. There are no mapped faults within the vicinity of the Interstate 80 HDD, therefore no high-risk wells outside the search monitoring area will be tested. There is one mapped fault trace within 0.5 miles north/northeast from the Beltzville Lake HDD crossing. However, the HDD alignment does not appear cross the fault trace. As a result, PennEast believes there are no high-risk wells beyond the existing monitoring radius for the Beltzville Lake HDD and therefore will not be testing any additional wells outside the monitoring area.</p>
CA-67	<p>Strike and dip of bedrock in the area of the HDD was not documented. High angle fractures were documented during the geotechnical borings. The steep fractures should be considered a potential preferential pathway to the surface with an increased potential for IRs. [25 Pa. Code § 105.313(c)]</p>	<p>Strike and dip of the bedrock in the area of the HDD was incorporated into the revised JPA Section S-6: Geologic Data Reports (Section S-6b) for HDDs Interstate 80 and Beltzville Lake. This information was previously factored into the feasibility and design of the HDD crossings; thus no updated HDD design reports are being submitted.</p>
CA-68	<p>Please provide the approved Aids to Navigation (ATON) plan for the Lehigh River. [25 Pa. Code §105.14(c)(3)]</p>	<p>The approved JPA Section L-3D: Aids to Navigation plan for the Lehigh River has been included in the response to comments package along with the letter of approval from the PFBC.</p>

Comment Number	PADEP Comment	PennEast Response
CA-69	<p>In the Alternative Analysis section 11.2.3, please further describe which “specific conditions [would] render a dry crossing infeasible” and the course of action to be followed if a dry crossing is infeasible. [25 Pa. Code §§ 105.13(e) and 105.21(a)(1)]</p>	<p>The proposed primary, secondary, and tertiary methods for watercourse crossings are provided in the JPA Section M: Erosion and Sediment Control Plan narrative and JPA Section H-1: E&amp;S alignment sheets. PennEast proposes to cross watercourses in a dry condition. Primary considerations that could impact the feasibility of a dry crossing include a channel configuration, bank stability, substrate permeability, excessive stream flow (rain events or groundwater baseflow), or the installation and construction of the dry crossing adversely affecting the bed or banks of the watercourse. Should these considerations temporarily render a primary dry crossing method infeasible, PennEast would defer to the secondary/tertiary methods proposed. In the event a dry crossing cannot be accomplished within the allowable construction window, consultation with PADEP will take place to discuss alternative options.</p>
CA-70	<p>In the Alternative Analysis Table: Riverine Resources (S4), some streams specifically state they can be crossed within 24 or 48 hours. Please state the expected crossing time for each resource. Based on previous projects, unexpected circumstances can arise during stream crossings which result in an extended crossing time. Please state if any streams are expected to exceed the recommended crossing time of 24-48 hours (respectively). Discuss plan of action if the proposed crossing timeline is exceeded, and state the proposed timeline in both the AA table and construction narrative. [25 Pa. Code §105.21(a)(1)]</p>	<p>PennEast is providing revised Alternative Analysis Table: Riverine Resources (JPA Section S4) with an estimated construction duration for each watercourse where applicable. The proposed primary, secondary, and tertiary methods for watercourse crossings are provided in the JPA Section M: Erosion and Sediment Control Plan narrative and JPA Section H-1: E&amp;S alignment sheets. PennEast proposes to cross in a dry condition in accordance with the 24 hour and 48-hour timeframes for a majority of the minor and intermediate watercourses except where noted. In the event PennEast anticipates a crossing taking longer than proposed, consultation with PADEP will take place to discuss alternative options. A refined crossing timeline will be presented at that time.</p>

Comment Number	PADEP Comment	PennEast Response
CA-71	<p>In the Alternative Analysis Table: Wetland Resources, it states wetland 042415_JC_1001_PFO "is not crossed by centerline." Please review table and revise accordingly. [25 Pa. Code §105.21(a)(1)]</p>	<p>The wetland is crossed by the centerline. The sentence "Feature is not crossed by the centerline" has been removed, and the Justification column has been updated in the revised JPA Section S-4: Alternative Analysis Table: Wetland Resources.</p>

<p>CA-72</p>	<p>Provide additional details regarding how impacts to Wetlands 050115_JC_1001_PFO, 042315_JC_1001_PFO, and 050615_JC_1001_PFO have been avoided and minimized. Please include an evaluation of whether an alternative method of crossing or reduced ROW is feasible through these resources. [25 Pa. Code §105.13(e)]</p>	<p>PennEast proposes open cut crossings of wetlands 050115_JC_1001_PFO, 042315_JC_1001_PFO, and 050615_JC_1001_PFO. As described in the JPA Section S-4: Site Specific Alternatives Analysis Tables, at each crossing location, PennEast has co-located the Project with existing ROW, thereby impacting wetlands within or adjacent to previously-disturbed and continuously-maintained wetlands. Workspace has been reduced to 75 feet within each wetland, and a 50-foot setback has been maintained for additional temporary workspace in adjacent uplands. PennEast will implement the BMPs outlined in the Alternatives Analysis (JPA Section S) to further minimize impacts. The crossings will be constructed as quickly as practicable to shorten the duration of impacts, and each wetland will be reseeded with a conservation seed mix and planted with trees and shrubs in the temporary workspace. Cumulatively, 2.842 acres will be replanted within these three wetlands.</p> <p>PennEast evaluated the use of trenchless crossing methods at each location:</p> <ul style="list-style-type: none"> <li>- At wetland 0501115_JC_1001_PFO, the centerline crossing length exceeds 800 feet, which is impracticable for a conventional bore crossing. Steep topography on either side of the crossing would make staging pullback operations for an HDD impracticable.</li> <li>- At wetland 042315_JC_1001_PFO, the centerline crossing length is nearly 1,000 feet, which is impracticable for a conventional bore crossing.</li> <li>- At wetland 050615_JC_1001_PFO, the centerline crossing length exceeds 1200 feet, which is impracticable for a conventional bore crossing. The configuration of the proposed co-location is not conducive for an HDD due to points of inflection and a convergence of utility easement encroachments to the immediate south of the crossing.</li> </ul>
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Comment Number	PADEP Comment	PennEast Response
CA-73	<p>Throughout the permit (including EA-Module 4 and the Alternative Analysis), wetland and watercourse restoration monitoring timelines are not consistent stating in some places two years and in other places three years of monitoring (respectively). In any event, the proposed monitoring timelines are inconsistent with the Department’s guidance for Wetlands Replacement/Monitoring, Department document 363-0300-001, which states wetland replacement must be monitored for a period of not less than five years. Please revise the monitoring timelines to reflect a 5-year monitoring period. [25 Pa. Code §105.21(a)(1)]</p>	<p>PennEast has revised the monitoring requirements in the Post-Construction Wetland and Watercourse Monitoring Plan (JPA Section L-4C), EA Module 3 (JPA Section L-3), EA Module 4 (JPA Section L-4), and the Alternatives Analysis (JPA Section S) to consistently state that impacted wetlands and watercourses will be monitored for a period of five years, or until restoration is considered successful and agreed upon by the USACE and PADEP. The exception to this revision is in Section 3.3 of the Monitoring Plan that explains the FERC reporting requirements.</p>
CA-74	<p>The Wetland and Riparian Reforestation Plan does not clearly show what the intentions are with respect to which wetlands and riparian areas get seeded and which wetlands and riparian areas get reforested. Please provide a Reforestation Plan that clearly demonstrates the vegetation type proposed for each site that will be restored. Please include the resource ID and designation on the plans as well as the planting schematics, including width of plantings in riparian buffers based on water course designation (typical vs. EV/HQ, according to §102.14 requirements, where applicable). [25 Pa. Code §§ 105.13(e) and 105.16(d)]</p>	<p>PennEast edited the symbology of seeding and planting areas of the Wetland and Riparian Reforestation Plan (JPA Section L-4A) to clarify the restoration treatment for each impacted area. The revised plan also includes resource ID labels, watershed boundaries with designated/existing use labels, and the width of riparian buffers that will be seeded and/or reforested. Minor workspace and delineation changes that were incorporated in the Project design since the December 2018 JPA, and minor edits to a few of the planting areas have also been addressed in this revised plan. The note and detail sheets were updated to include planting schematics and a table that details the acreage of seeding and planting for each resource ID.</p>



Comment Number	PADEP Comment	PennEast Response
CA-75	<p>In the Wetland and Riparian Reforestation Plan, consider replanting shrubs up to the 10-foot wide buffer (between 15 and 5 feet from center of pipeline) in exceptional value watersheds, where trees would otherwise not be permitted or consider replanting shrubs across the entire ROW, where tree roots would otherwise not be permitted, as stated in the EA Module 3 “A 10-foot wide operational easement centered on the pipeline will be maintained in an herbaceous or scrub/shrub vegetative state in emergent or scrub-shrub wetlands.” [25 Pa. Code §§105.16(d) and 105.18a(b)(3)(ii)(B)]</p>	<p>PennEast is required by FERC and PHMSA to maintain an open line of sight over the pipeline corridor for ongoing visual inspection of the ROW corridor against intrusion or damage. This inspection is typically done by drone or aircraft. In addition, to protect the integrity of the pipeline coating from damage from tree roots, the ROW must be maintained 15 feet on either side of the pipeline (30 feet total width). Although the 30-foot ROW will not be mowed annually (only a 10-foot wide operational easement may be mowed annually), PennEast may mow it as frequently as every 3 years. Trees and shrubs may naturally colonize the maintained ROW, and PennEast will remove trees with roots that grow to a size that have the potential to obscure visual assessment and/or to damage the pipe. Planting shrubs within the 30-foot ROW that will be mowed regularly would not be practicable from an operations perspective. PennEast proposes to plant trees and shrubs outside of the 30-foot maintained ROW to enhance restoration of the Project area. In areas where reforestation plantings are impracticable (i.e. within the 30-foot maintained ROW within forested riparian buffers, PFO, and PSS wetlands), PennEast has proposed offsite compensatory wetland enhancement to mitigate the impacts associated with changes in wetland cover types.</p>
CA-76	<p>Please include in the EA Module 4, Section S4.C, the total acres to be mitigated for and the total acres WHM Solutions will uplift/enhance. [25 Pa. Code §§105.20a(a) and 105.21(a)(1)]</p>	<p>PennEast has revised Section S4.C of EA Module 4 (JPA Section L-4) to include the total acreage of permanent wetland impacts and the acreage of compensatory mitigation proposed.</p>

Comment Number	PADEP Comment	PennEast Response
CA-77	<p>The Department requests function and value mitigation at a rate of 2:1 for conversion impacts to “other” PFO wetlands, 2.5:1 for conversion impacts to EV PFO wetlands; 1.5:1 for conversion impacts to “other” PSS wetlands, and 1.75:1 for conversion impacts to EV PSS wetlands. [25 Pa. Code §§105.14(b)(13) and 105.20a(a)(2)]</p>	<p>PennEast has revised the Compensatory Mitigation Plan (JPA Section L-4B) to provide additional mitigation for wetland cover type conversion impacts. PennEast proposes to implement the requested 2.5:1 ratio for the conversion of EV, PFO wetlands to PEM wetlands within the 10-foot wide annually-maintained ROW and a 1.75:1 ratio for the conversion of EV, PSS wetlands to PEM wetlands within the 10-foot wide annually-maintained ROW. PennEast proposes to adhere to the previously proposed 2:1 ratio for PFO and 1.5:1 ratio for PSS for all other wetland conversion impacts. As described in the response to comment BU-42, PennEast will only mow the entire 30-foot maintained ROW every 3 years, or less often as needed, to facilitate visual assessments and to protect the integrity of the pipeline coating. This reduced mowing frequency will result in PSS wetlands within 20 feet of the 30-foot wide operational ROW, with the remaining 10 feet typically as PEM wetlands. Per FERC's Plan and Procedures, mowing will take place either at the end of or outside of the growing season (between August 2 and April 14). PennEast has committed to a more restrictive mowing schedule of September 11 to March 31 to avoid the nesting seasons of migratory bird species. PennEast believes that a 2:1 mitigation ratio for the conversion of PFO to PSS wetlands and a 1.5:1 ratio for the relatively infrequent maintenance of PSS wetlands within this 20-foot wide corridor adequately mitigates the impacts.</p>

Comment Number	PADEP Comment	PennEast Response
CA-78	Please submit final documents in the Compensatory Wetland Mitigation Plans that are not labelled "Draft." [25 Pa. Code §§105.20a(a) and 105.21(a)(1)]	The documents that were labeled "Draft" in the December 2018 JPA were draft Declaration of Restrictive Covenants that WHM Consulting, Inc. would finalize and file with the county courthouse upon issuance of a PADEP and USACE permit. As the review of the compensatory mitigation plan is still underway and the project has not been approved, it would be premature to put a deed restriction on a property at this time. PennEast commits to finalizing the document and filing the deed restriction before wetland impacts would occur.
CA-79	The off-site Compensatory Wetland Mitigation Plan Performance Standards provide for a contingency of 30% canopy cover prior to the end of monitoring." Department guidance, Design Criteria - Wetlands Replacement/Monitoring, DEP Doc. No. 363-0300-001, suggests 85% survival of planted species and a monitoring period of not less than five years. The contingency regarding "30% canopy cover prior to end of monitoring" will not be acceptable. Please revise the off-site Compensatory Wetland Mitigation Plan Performance Standards to be consistent with the Department guidance. [25 Pa. Code §§105.20a(a), 105.21(a)(1), and 105.13(e)]	The contingency for 30% canopy cover prior to end of monitoring has been removed from the performance standards. The revised Compensatory Wetland Mitigation Plan is provided in JPA Section L-4B.
CA-80	Regarding the EA Module 4 and Post-Construction Wetland and Watercourse Monitoring Plan, Department guidance, Design Criteria - Wetlands Replacement/Monitoring, DEP Doc. No. 363-0300-001, requires 85% cover of hydrophytic species. Please revise performance standards accordingly. [25 Pa. Code §§105.20a(a), 105.21(a)(1), and 105.13(e)]	PennEast revised the performance standards in Section 2.1 of the Post-Construction Wetland and Watercourse Monitoring Plan (JPA Section L-4C) to include a criterion that revegetated areas will have 100% cover, with at least 85% cover of hydrophytic species (FAC, FACW, and/or OBL) at the end of two growing seasons. Additionally, PennEast edited the report components and included statements that PennEast may request an early release of monitoring requirements for wetlands and watercourses that meet performance criteria.

Comment Number	PADEP Comment	PennEast Response
CA-81	The Post-Construction Wetland and Watercourse Monitoring Plan states that you intend to only monitor wetlands 0.1 acres or greater in size. All restored wetland impacts need to be monitored regardless of size. Please revise application to reflect that all restored wetlands will be monitored. [25 Pa. Code §105.21(b)]	PennEast revised Section 3.1 of the Post-Construction Wetland and Watercourse Monitoring Plan (JPA Section L-4C) to state that impacted wetlands will be monitored.
CA-82	In the Compensatory Wetland Mitigation Plan, consider providing a method to clearly and permanently demarcate easement boundaries. [25 Pa. Code § 105.13(e)]	A “Boundary Demarcation” section has been added to the Compensatory Wetland Mitigation Plan (JPA Section L-4B) which outlines the boundary of the recorded conservation area to be demarcated in the field with either fiberglass sign/posts marked “Conservation Area”, with metal t-posts, or with large boulders. Once trees and shrubs are established within the mitigation area, the woody vegetation shall also serve as the demarcation of the conservation area.