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October 30, 2019

NC Division of Water Resources
401 & Buffer Permitting Branch
Attn: Ms. Sue Homewood
1617 Mail Service Center
Raleigh, NC 27699-1617

RE: MVP Southgate Project
Joint Permit Application
DWR # 20181638
Response to Request for Additional Information

Dear Ms. Homewood:

Mountain Valley Pipeline, LLC ("Mountain Valley" or the "Project") is providing this response to your request for additional information, dated September 23rd, 2019, regarding the above-referenced Joint Permit Application for the MVP Southgate Project ("Project"). The comments from the request are restated below and are followed by Mountain Valley's response.

1. **Public Hearing - The Director has determined that it is in the public's interest to hold a public hearing to receive public comment and additional information on the proposed project. This hearing must be held prior to taking final action on your application. The Division is in process of scheduling the public hearing and will forward the details by separate letter. [15A NCAC 02H .0503(f)]**

   Response: Per the public notice issued by the North Carolina Division of Water Resources (DWR), the public hearing for the Project will be held on November 19, 2019. Mountain Valley representatives will attend the hearing and hereby request the opportunity to present information immediately following any DWR presentation and prior to receiving comments from the public attendees.

2. **Provide a *qualitative* cumulative impact analysis for the project. The analysis should follow procedure/guidance outlined in the Division's Cumulative Impact Policy for the 401 and Isolated Wetland Permitting Programs (Ver2.1, dated April 10, 2004), available online. [15A NCAC 02H .0506(b)(4)]**

   Response: An analysis of cumulative impacts (both qualitative and quantitative) are further discussed in Attachment A. Given that the majority of the resource impacts are short-term and stringent mitigation measures, erosion and stormwater control devices and best management practices (BMPs) will be implemented by Mountain Valley to minimize runoff as required by federal, state, and local permitting requirements, cumulative impacts on surface waters, wetlands and aquatic resources would not likely be significant.

3. Provide the exact locations and rate of discharge for the hydrostatic test water to be used within the Project. [15A NCAC 02H .0506(b)(3)]

Response: Mountain Valley proposes to use a total of approximately 5.9 million gallons of water from the Dan River and/or two municipal water sources for hydrostatic testing of the pipeline and associated facilities. Hydrostatic Test Water Sources are provided in Table 1 provided on the following page.

The project is working with various federal and state agencies, including the NCDEQ, to determine the appropriate discharge locations and methods and will provide those locations and methods upon final determination. In general, discharges will occur in well-vegetated upland areas within structures to control erosion and sedimentation. Dewatering would occur through an anchor discharge pipe into a dewatering structure at a controlled rate not to exceed 2,500 gallons/minute.

Table 1

Proposed Hydrostatic Test Water Use Summary

Anticipated Year of Construction	Construction Spread	Segment Name	Beginning MP	Ending MP	Length of Section (feet)	Required Water (gal)	Proposed Water Source			Proposed Test Water Discharge Location		
							MP	Water Source	Watershed	MP	Watershed	Volume
2020	1	1	0.0RR	30.4	162,800	3,600,000	30.1	Dan River (Primary) / Municipal (Secondary)	NA	30.1	Roanoke River Basin	3,600,000
2020	2	2	30.4	73.2RR	232,130	2,300,000	30.1	Dan River (Primary) / Municipal (Secondary)	NA	30.1	Roanoke River Basin	2,300,000
Hydrostatic Test Water Total						**5,900,000**						

Note: Mileposts with an “RR” indicate locations where a re-route was incorporated into the pipeline alignment.

4. **Appendix I - HDD Contingency Plan Page 7 states "Technical data sheets for the more typical benign and environmentally friendly products that are approved for use by the Project are included in Appendix A." Please provide these technical data sheets. [15A NCAC 02H .0506(b)(3)]**

   Response: The HDD contractor may only utilize additives that are certified for conformance with NSF/ANSI Standard 60 (http://www.nsf.org/newsroom/nsf-ansi-standard-60-drinking-water-treatment-chemicals-health-effects), which provides assurances that the product is safe for use in drinking water. Typical additives that meet this standard include Accu-Vis®, Barabuf pH buffer®, Barite® or equivalents. Technical data sheets for typical additives are provided herein as Attachment A.

5. **The Division's review of the documents submitted with the application has identified discrepancies between the following exhibits:**
   - **Wetland and Waterway Delineation Maps**
   - **Pipeline Alignment sheets**
   - **Proposed Pipeline Route and Impacts sheets**
   - **Wetland Impact Table**
   - **Stream Impact Table**

   The inconsistencies in these exhibits include:
   - **Pipeline corridor location**
   - **Access road location**
   - **Jurisdictional features and impacts.**

   Please submit updated exhibits that incorporate the most recent available data. Please ensure that the various sheets/maps correspond with each other, as well as other available documents such as the ATWS variance tables filed with FERC, with regards to jurisdictional features, alignment corridors, access road locations, additional temporary workspace locations and impact locations and amounts. [15A NCAC 02H .0506(b)]

   Response: All of the above listed maps, sheets and tables have been updated based on route and workspace modifications incorporated subsequent to the submittal of the Joint Permit Application. Updated wetland and waterbody delineation maps, crossing Route and Impact Sheets as well as wetland and waterbody impact tables are provided herein as Attachments B, C, D, E, J and K.

The following comments are made in reference to the Proposed Pipeline Route and Impacts sheets (Appendix M):

6. **At various locations within the project corridor, it appears that impacts could be avoided with a minor realignment or reduction of the construction corridor. Please review these areas and propose further avoidance and minimization, or provide site-specific justification of why these impacts could not be avoided or further minimized: [15A NCAC 02H .0506(b)(2)]**

   a. **Sheet 3, W-A18-44**
   b. **Sheet 21, W-C18-40**

c. **Sheet 94, S-B18-II, Buffer Zone Impacts for workspace**
d. **Sheet 102, Parallel Buffer Zone Impacts at approximately MP 72.7**
e. **Sheet 108, appears that minor revision to norther boundary of CY-26B would reduce impacts to the adjacent buffer in this location**

Response: As previously stated, updated Pipeline Route and Impact sheets are provided in Attachment D. Specific comments are addressed below:

a. **Sheet 3, W-A18-44:** Wetland W-A18-44 (PEM) extends on both sides of the proposed workspace. To minimize impacts, the Project incorporated a deviation at MP 27.08RR, shifting the pipeline route through the agricultural portion of the PEM to maintain co-location and avoid the portion of the PEM wetland to the west along the farm access road.

b. **Sheet 21, W-C18-40:** Minimization of impacts to wetland W-C18-40 have been made by shifting the additional temporary workspace (ATWS) to the west of the corridor thereby avoiding the wetland. The edge of this wetland will be temporarily impacted by the construction corridor; however, the incorporated change protects the majority of the wetland to the east.

c. **Sheet 94, S-B18-11, Buffer Zone Impacts for workspace:** Unavoidable impacts to the buffer zones at S-B18-11 (approximately MP 68.9) have been minimized by reducing the construction corridor to 75 feet within Zones 1 and 2 on either side of the stream crossing.

d. **Sheet 102, Parallel Buffer Zone Impacts at approximately MP 72.7:** Based on the original design, Parallel Buffer Zone impacts to Zone 2 at MP 72.7 were approximately 893 square feet. The Project has modified the workspace to minimize impacts in Zone 2 to a total of 13.67 square feet (See Impact Sheets and Table in Attachments D, E and F). The construction corridor cannot be modified further east to entirely avoid buffer impacts due to steep side slopes which would require a significant amount of additional temporary workspace to safely construct the pipeline. South of this location, an additional route modification was incorporated to avoid impacts to stream S-A18-118.

e. **Sheet 108, appears that minor revision to the northern boundary of CY-26B would reduce impacts to the adjacent buffer in this location:** The Project has adjusted the northern boundary of CY-26B to avoid impacts to the adjacent buffer in this location.

7. **On Sheet 4, impacts are noted for both Cascade Creek and Dry Creek at MP27.5, however the Stream Impact Table notes that Cascade Creek is to be crossed using a Conventional Bore method, but Dry Creek is to be crossed using typical dewatering methods. Please explain why the Conventional Bore method is not proposed for the Dry Creek crossing, given its adjacency to Cascade Creek within the Construction Corridor. [15A NCAC 02H .0506(b)(2)]**

Response: Subsequent to the submittal of the Joint Permit Application, the Project has revised the crossing methodology for Cascade Creek and Dry Creek. Both waterbodies will now be crossed using a single Conventional Bore to avoid direct impacts. Please see Attachment H for a site-specific Plan and Profile sheet for the conventional bore crossing at this location.

8. **Please review the Proposed Pipeline Route and Impacts sheets to confirm that in all wetland and waterbody impact locations the construction corridor width has been reduced to 75 feet where proposed. Section 4.4 of the application notes that the construction right-of-way width will be reduced "unless alternative, site specific measures are requested by the Project and approved by FERC and other applicable agencies". If you are proposing a construction corridor greater than 75 feet through any wetland or waterbody, please provide a clear identification/list of those locations a detailed site specific justification for each location. Please note that although in some locations a stream or wetland may not be present within the entire width of the construction corridor, a reduction in the corridor to 75 feet would still provide avoidance and minimization, and therefore should still be justified on site specific merit, not solely the length of the stream or wetland within the corridor. Please also update the impact quantities as appropriate. Examples of locations noted as having a greater than 75-foot construction corridor are: [15A NCAC 02H .0506(b)(2)]**

   a. **Sheet 5, MP 28.0, W-A18-39 PEM and W-A18-26 PEM**
   b. **Sheet 10 MP 30, W-A18-18 PFO.**
   c. **Sheet 29, MP 38.7, W-A18-7 (7-2 through 7-7)**
   d. **Sheet 32, MP 40.5 RR, S-A18-210 and S-A18-210-2**
   e. **Sheet 55, MP 50.5, SS-SOIL- 18-02**
   f. **Sheet 59, MP 52.4, AS-A18-219**
   g. **Sheet 61, MP 53.4, W-A18-83**
   h. **Sheet 62, MP 53.7, W-A18-85**
   i. **Sheet 63, MP 54.4, W-C18-67**
   j. **Sheet 81, MP 63.0, AS-B18-24**
   k. **Sheet 85 MP 65, S-A19-319 and W-A19-320**
   l. **Sheet 86, MP 65.1, S-A19-321 and S-A19-324**
   m. **Sheet 87, MP 65.5, W-B19-168**
   n. **Sheet 92, MP 67.9, SS-SOIL 19-12**
   o. **Sheet 93, MP 68.3, S-B18-3**
   p. **Sheet 102, Parallel Buffer Zone Impacts at approximately MP 72.7.**

Response: Where feasible, we have reduced construction corridor through wetlands and waterbodies to a maximum of 75 feet. Additional information regarding the crossings identified by NCDWR is provided below:

a. **Sheet 5, MP 28.0, W-A18-39 PEM and W-A18-26 PEM:** The impacts to PEM wetlands W-A18-39 and W-A18-26 will be temporary in nature. Wetland W-A18-39 is a narrow PEM wetland in which the overall crossing width of the wetland is less than 75 feet. Therefore, reducing the construction corridor to 75 feet would not reduce the overall wetland impact.

   The ATWS at W-A18-26 is proposed to the west of the construction corridor, outside of the wetland. A reduction in corridor width to 75' in this location would not alter the temporary impacts to W-A18-26.

b. **Sheet 10, MP 30, W-A18-18 PFO:** This wetland is located north of the Dan River which will be crossed via HDD. Additional temporary workspace (ATWS) beyond the typical construction corridor is required in this area to string and fabricate the pipeline prior to installation. The workspace cannot be shifted to the south due to the existing electric transmission substation and South Fieldcrest Road.

c. **Sheet 29, MP 38.7, W-A18-7 (7-2 through 7-7):** PEM wetlands W-A18-7 (7-2 through 7-7) are currently used for agricultural activities and therefore not practical to limit construction corridor. Upon completion of the project, the land will return to agriculture.

d. **Sheet 32, MP 40.5 RR, S-A18-210 and S-A18-210-2:** A reduction in the construction corridor to 75 feet at waterbodies S-A18-210 and S-A18-210-2 would not reduce project-related impacts since these streams do not cross the entire construction corridor. Adjustments to the construction corridor to the south would result in greater stream impacts, and therefore this is not being considered.

e. **Sheet 55, MP 50.5, SS-SOIL- 18-02:** This feature is depicted on the drawing based on the soil survey information. However, based on analysis and interpretation of aerial and topographic map mapping for the area, the feature is likely not present. The feature is currently being conservatively shown on the impact maps because NCDWR staff have not conducted a field review to make a final determination. We look forward to the opportunity for another site visit with DEQ staff to make a final determination. Workspace will be reduced if this is determined to be a waterbody by the DEQ staff.

f. **Sheet 59, MP 52.4, AS-A18-219:** We have reduced the construction corridor at this location (north of 52.4RR) to 75 feet.

g. **Sheet 61, MP 53.4, W-A18-83**: PEM wetland W-A18-83 is currently used for agricultural activities and therefore not practical to limit construction corridor. Upon completion of the project, the land will return to agriculture.

h. **Sheet 62, MP 53.7, W-A18-85:** We have reduced the construction corridor in a portion of W-A18-85 to 75 feet, and the reduction extends the south to minimize impacts to S-A18-84.

i. **Sheet 63, MP 54.4, W-C18-67:** Wetland W-C18-67 does not extend into the construction corridor for more than 75 feet, therefore the Project designed the workspace for a full 100 feet. Shifting the workspace further to the east is not feasible as the pipeline alignment parallels an overhead electric transmission easement. Reducing the construction corridor to the west would not allow for sufficient space to safely construct the pipeline while allowing for equipment passage to the north and south.

j. **Sheet 81, MP 63.0, AS-B18-24:** The pipeline was originally routed further east. Subsequent to the submittal of the Joint Permit Application, we have incorporated a route modification to several resources (S-B18-24, S-B18-26, W-B18-28). The full workspace width is needed in this area to safely install a significant bend in the pipeline that will allow for a perpendicular crossing of perennial stream S-B18-12 (MP 63.4RR).

k. **Sheet 85 MP 65, S-A19-319 and W-A19-320:** We have reduced the construction workspace at this location to 75 feet.

l. **Sheet 86, MP 65.1, S-A19-321 and S-A19-324:** We have reduced the construction workspace at this location to 75 feet.

m. **Sheet 87, MP 65.5, W-B19-168:** Wetland W-B19-168 is a PEM wetland where impacts would be temporary in nature. In an effort to avoid impacts to the Jordan Lake riparian buffer

of a stream (S-A18-250), we reduced the construction corridor already adjacent this wetland area making it challenging to further reduce this area.

n. **Sheet 92, MP 67.9, SS-SOIL 19-12:** We have reduced the construction corridor at this location to 75 feet.

o. **Sheet 93, MP 68.3, S-B18-3:** Intermittent stream S-B18-3 is located outside of the construction corridor entirely and is not being impacted.

p. **Sheet 102, Parallel Buffer Zone Impacts at approximately MP 72.7.** Parallel Buffer Zone impacts to Zone 2 at MP 72.7 were approximately 893 sq feet, but the construction corridor has been slightly shifted to minimize impacts in Zone 2 to 13.67 sq feet (see attached, updated Impact Sheets and Table). The construction corridor cannot be shifted further east due to steep side slopes. Just south of this location, a bend in the pipe is proposed in order to avoid impacts to stream S-A18-118, a direct tributary to the Haw River.

9. **The application proposes to adhere to a 30-foot operational workspace (10 feet regularly mowed, and trees removed within 15 feet on either side of the pipeline) as required by FERC for intermediate and major waterbodies and all wetlands. Provide a detailed justification why the operational workspace cannot be reduced to 30 feet in for all other streams within the project. [15A NCAC 02H .0506(b)(2)]**

Response: Vegetation on the permanent right-of-way will be maintained by mowing, cutting, and trimming. In uplands, routine vegetation mowing or clearing over the full width of the permanent right-of-way will occur no more than once every three years. However, to facilitate periodic corrosion/leak surveys, the Project may clear a corridor not exceeding 10 feet in width centered on the pipeline at a frequency necessary to maintain the 10-foot corridor in an herbaceous state.

For *all* waterbodies, the Project will limit routine vegetation mowing or clearing adjacent to waterbodies up to a 30' corridor, as measured from the waterbody's mean high-water mark, to permanently revegetate with native plant species across the entire construction right-of-way. However, to facilitate periodic corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide may be cleared at a frequency necessary to maintain the 10-foot corridor in an herbaceous state. In addition, trees that are located within 15 feet of the pipeline that have roots that could compromise the integrity of the pipeline coating may be cut and removed from the permanent right-of-way. The project shall not conduct any routine vegetation mowing or clearing in riparian areas that are between HDD entry and exit points.

10. **On Sheet 29, stream construction impacts have been identified for Wolf Island Creek however the application notes that Wolf Island Creek is to be crossed by Conventional Bore. Please clarify what the nature of the impacts to Wolf Island Creek is and please verify if adjacent streams and wetlands impact are accurate given the location of the Bore entry and exit which are not shown on the sheets. [15A NCAC 02H .0506(b)(2)]**

Response: Wolf Island Creek (S-A18-8) is to be crossed by conventional bore. A site-specific Plan and Profile of the proposed crossing, including the bore entry and exit locations, is provided in Attachment I. There are no proposed stream or wetland impacts associated with the bore pits. The 97.69 linear feet of impact reported on the updated impact drawings (Sheet 29, Attachment E) associated with this crossing is for a 3-foot wide vegetation removal clearing (by hand, no ground disturbance) for line of sight during boring activities, dewatering activities, stockpiling of material from bore pit excavations, and staging of equipment. The Project may elect a bridged equipment crossing in this location to avoid equipment relocations. No equipment will enter the stream without prior consultation with the agencies.

11. **The Division recognizes the Wetland and Waterbody Crossing Analysis that has been provided, however we request additional information on the following specific locations: [15A NCAC 02H 0506(b)(2)]**

   a. **Sheet 34, MP 41.2 - Given the size of Lick Fork and the adjacency of 2 tributaries and a wetland, please provide further detailed analysis that incorporates the practicality of a Conventional Bore which could avoid impacts to all 4 features at this location.**
   b. **Sheet 39, MP 43.3 - Given the size of Jones Creek and the adjacency of a perennial tributary, please provide further detailed analysis that incorporates the practicality of a Conventional Bore which could avoid impacts to both features at this location.**
   c. **Sheet 39 and 40, MP 43.7 - Given the size of the Tributary to Jones Creek (S-A18-105} and that the stream runs parallel with, and directly over the pipeline in this location, and the adjacency of a perennial tributary, please provide further detailed analysis that incorporates the practicality of a Conventional Bore which could avoid impacts to both features at this location.**
   d. **Sheet 56, MP 50.8 - Given the size of the Tributary to Haw River (S-A19-286} and that the stream runs parallel with, and directly over the pipeline in this location, and that the Jordan Buffers also run parallel with the pipeline, please provide further detailed analysis that incorporates the practicality of a Conventional Bore which would address significant concerns the Division has regarding temporary impacts to and permanent restoration of a large stream running parallel and immediately over the pipeline.**

Response: We have evaluated the potential for boring at the requested locations. As discussed previously in the Joint Permit Application, there are several factors to consider when determining whether a bore is a feasible or practicable crossing method, including: elevation changes adjacent to the resource, which dictate the depth and width of the bore pits; safety risks for workers in and around the bore pit; the duration of land disturbance required for construction; engineering and logistical challenges associated with excavating deep bore pits in riparian areas with shallow water tables; the need for additional workspace (and thus potential additional buffer or other resource impacts); and the increased cost of the bore. As discussed below, the conventional bore crossing method is not practicable at any of the referenced locations.

Stream Name (Resource ID)	Proposed Bore Length	Proposed Bore Cost	Current Dry Crossing Cost	Percent Increase in Cost
Lick Fork (S-B18-56)	355	$496,112.50	$78,379.50	533%
Jones Creek (S-B18-92)	182	$254,345.00	$17,328.00	1,368%
UNT Jones (S-A18-105)	155	$216,612.50	$31,948.50	578%
UNT Haw (S-A19-286)	698	$975,455.00	$142,956.00	582%

Additionally, below is an analysis for the above listed locations utilizing the practicability analysis:

a. **Sheet 34, MP 41.2 - Given the size of Lick Fork and the adjacency of 2 tributaries and a wetland, please provide further detailed analysis that incorporates the practicality of a Conventional Bore which could avoid impacts to <u>all 4 features</u> at this location.**

Conventional boring the Lick Fork, the two UNT to the Lick Fork, and W-B18-55 would not be practical. The total length for this bore would be approximately 355'. There is a hill on the north side of the bore that would make excavation of the bore pit extremely challenging. The high point for the pit is at 610' and the streambank is at 588'. The elevation drop would require at least a 35' pit. This pit would require benching to meet company and OSHA safety standards and additional workspace. Additionally, this bore would cost approximately $496,112.50 compared to approximately $78,379 for a dry open-cut crossing and take a period of several weeks to complete as opposed to a matter of days.

b. **Sheet 39, MP 43.3 - Given the size of Jones Creek and the adjacency of a perennial tributary, please provide further detailed analysis that incorporates the practicality of a Conventional Bore which could avoid impacts to <u>both</u> features at this location.**

While this location does not have the same topographic challenges, the cost of the bore spanning both streams would not be practical. As proposed by the DEQ, the bore length would be approximately 182' in length resulting in $254,345 compared to $17,328 for a dry open-cut crossing. The bore pit would likely need to be at least 15' deep and likely in an area with a shallow water table. Due to the complexity of the bend in the pipe additional direct forest impacts inside the riparian buffer would need to occur.

c. **Sheet 39 and 40, MP 43.7 - Given the size of the Tributary to Jones Creek (S-A18-105) and that the stream runs parallel with, and directly over the pipeline in this location, and the adjacency of a perennial tributary, please provide further detailed analysis that incorporates the practicality of a Conventional Bore which could avoid impacts to <u>both</u> features at this location.**

Utilizing conventional boring for the proposed crossing is not technically practical. There is an elevation drop on the north side of the line from approximately 610' in elevation to the bottom of S-A18-105 at approximately 598'. Adding an additional 10' for the bore pit would make it 22' deep requiring additional safety mitigation, benching, and workspace to perform the bore. Additionally, the cost for a conventional bore would be $216,612 compared to $31,948 for a dry open-cut crossing

d. Sheet 56, MP 50.8 - Given the size of the Tributary to Haw River (S-A19-286) and that the stream runs parallel with, and directly over the pipeline in this location, and that

the Jordan Buffers also run parallel with the pipeline, please provide further detailed analysis that incorporates the practicality of a Conventional Bore which would address significant concerns the Division has regarding temporary impacts to and permanent restoration of a large stream running parallel and immediately over the pipeline.

A conventional bore to avoid parallel impacts to the Jordan Buffers and crossing the Tributary to Haw River (S-A19-286) is not technically practical due to topographic changes in the landscape and the highly imprudent cost to complete a 698' bore. The south side of the pit would be located in a side hill at approximately 672' in elevation and the top of bank to the tributary is at 658' requiring a 24' bore pit. Additionally, the cost to perform the bore would be $975,455 compared to $142,956 for an open-cut crossing.

12. **At various locations within the project corridor, streams are present and parallel with the corridor/pipeline. Please provide site specific drawings indicating how these features are to be impacted during construction activities and how they are to be restored upon construction completion. The typical dewatering specifications provided with the application for stream crossings are not sufficient for parallel impacts. Please also describe how downstream water quality will be protected during construction activities when a stream is parallel within the project corridor. Please provide site-specific restoration details for each of these locations. The Division is specifically concerned with any proposal to restore the channel to pre-construction location when the channel is parallel with the pipeline and within the operational workspace, as long-term maintenance activities are likely to have permanent impacts to the channels. The following locations are noted as examples of this scenario: [15A NCAC 02H .0506(b}(2}]**

a. **Sheet 15, MP 32.0, S-A18-140, S-A18-143 and S-A18-144**
b. **Sheet 15 MP 32.2, S-A18-147**
c. **Sheet 21, MP 34.6 S-C18-38-2**
d. **Sheet 21, MP 34.7, S-C18-53**
e. **Sheet 28, MP 38.2, AS-APS-400**
f. **Sheet 28, MP 38.5, S-A18-4 and S-A18-4-2**
g. **Sheet 29, MP 38.8, S-A19-269 (if not avoided by adjacent Bore for Wolf Island Creek)**
h. **Sheet 39 and 40, MP 37.7, S-A18-105**
i. **Sheet 43, MP 45.6, S-A18-213**
j. **Sheet 56, MP 50.8, S-A19-286**

Response: We have submitted site-specific erosion and sediment control and restoration plans to the North Carolina Department of Energy, Mineral and Land Resources (NCDEMLR) for review for the northernmost 10 miles of the pipeline alignment in North Carolina. Several representative site-specific drawings from the above listed locations are provided in Attachment I for your review and comment. Also attached are additional detail figures for the typical dam and pump dewatering method, the open cut (with flume) method, timber matting, mobile bridge, turbidity curtains (Type I, II and III), portadam, ford crossing and a modular temporary bailey bridge. We will submit the remainder of the site-specific erosion and sediment control and restoration plans to NCDWR upon completion, anticipated to be in December 2019.

13. **On Sheet 48 at MP 47.4 two streams are shown within the corridor however only one stream is called out with impacts. Please clarify.**

Response: The pipeline crosses the same stream in two locations. All impacts are quantified in the impact table as feature S-C18-79 (See Attachment F).

14. **On Sheet 68, MP 56.5 and Sheet 69, MP 56.7, please provide a construction sequences and site-specific details for how the pipeline will be constructed within these ponds in a manner which will protect downstream water quality. Please also include a dewatering detail/sequence (if applicable) and pond restoration detail for these locations. [15A NCAC 02H .0506(b)(2)]**

Response: The dam and pump method is being proposed at the above two pond locations. Specific detail sheets including construction techniques and sequences for the dam and pump method are provided in Attachment I, Sheet Number 10.005. On this Sheet, schematics of a waterbody crossing dam and pump method are provided (MVP-SG-ES8), along with a dam and pump energy dissipater (MVP-SG-ES8.1). Site-specific detail sheets for the two ponds will be submitted under separate cover by March of 2020.

The following comments are made specific to Jordan Buffer Rules and the portion of the project that lies within the Jordan Lake Watershed. [15A NCAC 02B .0267)

15. **Provide a copy of the most recent USGS 1:24,000 map and published soil survey map with the proposed corridor as an overlay on each set of maps. The scale must be such that all streams as shown on these maps are easily identifiable. Please label all streams shown on these maps with the nomenclature used throughout the application documents.**

Response: An updated set of USGS 1:24,000 topographic maps and published soil survey maps with the proposed corridor overlain and streams are provided herein as Attachments B and C.

16. **Provide specific details of how diffuse flow shall be maintained for all above ground facilities within the Jordan Lake Watershed in order to document compliance with the diffuse flow provisions of the Jordan Buffer Rules.**

Response: Both Temporary/Permanent Erosion & Sediment Control and Stormwater designs will include, but not be limited to, Level Spreader-Filter Strips and Permanent Right-of-Way (Water Bars), to ensure downstream water quality, as well as manage water quantity (non-erosive discharge) by returning flows to pre-development conditions during and after construction. Per the diffuse flow provisions of the Jordan Buffer Rules, the Project will design Level Spreader-Filter Strips in accordance with Chapter 8 of the BMP Manual. These plans will be provided to the Division prior to any impacts occur.

17. **Provide a detailed buffer restoration plan for all temporary workspace areas within Zone 1 that are not within the operational corridor shown on the plans. The plan must include a replanting plan, a vegetation monitoring plan, and proposed success criteria.**

Response: We are in the process of preparing a detailed buffer restoration plan for all temporary workspace areas within Zone 1 of the Jordan Lake Watershed. This plan will follow the NCDWR Riparian Buffer Restoration criteria pursuant to Section 9.(C)(7)(e) of the *Riparian Buffer Protection (Model) Ordinance for Lands within the Jordan Watershed* and will be submitted under separate cover. Details regarding the establishment of temporary and permanent groundcover will be included in the Plan and a planting plan (plant list, general planting schematic, and installation details) will also be provided to describe the proposed bank and buffer planting. Native plant community types in the project vicinity will be evaluated for use in our streambank and buffer planting plan. The plan will be submitted under separate cover by March of 2020.

18. **On Sheets 65 and Sheet 90, an access road is shown as impacting the buffer of a pond, however it appears that a road already exists at this location. The existing road should be considered as an "existing use" and buffer impacts should not be counted within the footprint of the existing road. Buffer impacts should be shown only for widening/improvements to the road outside of the existing footprint.**

Response: While the existing access roads within the waterbody buffer area will not be widened, erosion control devices will be installed outside of the existing road footprints, therefore the buffer impacts are being maintained in these locations.

19. **At the following locations please provide a detailed drawing at a more detailed scale which clearly shows how buffer impacts were identified between separate buffer impacts/categories (perpendicular vs. non-perpendicular)**

a. Sheet 74, MP 59.2-59.3
b. Sheet 78, MP 61.8

Response: Sheet 74, MP 59.2-59.3: We modified the location of the workspace in this area to avoid buffer impacts.

Sheet 78, MP 61.8: Buffer impacts at MP 61.8 are associated with 20VAR and 21VAR in the Major Variance Application response. Please refer to the updated impact sheets in the October 30, 2019 major variance response (Attachment 1) and buffer impact table (Attachment 2) for a detailed drawing of the impacts in this area.

20. **It appears that there are buffer impacts along an intermittent stream that is unlabeled on Sheet 87 at MP 65.6 that serves as the outlet of the pond and joins S-A18-250 that have not been shown on the Proposed pipeline Route and Impact sheet.**

Response: Buffer impacts for intermittent stream S-A18-252 were originally included with the buffer for S-A18-250. Buffer impacts have since been separated out for stream S-A18-252 and are included in the updated impact table (See Attachment F).

21. **It does not appear that the buffer impacts associated with a pond on Sheet 90 at MP 67.3 are called out on the Sheet but appear on the Buffer Impact Table.**

Response: Buffer impacts for pond AS-APP-1566 were originally included with the buffer

impacts for AS-A18-177, and, as such, were not specifically identified in the original impact table. The Project has incorporated a route / workspace modification in this area subsequent to the original application to avoid buffer impacts associated with pond AS-APP-1566. This feature is no longer listed in the updated Buffer Impact table (See Attachment G).

22. It does not appear that the buffer impacts on Sheet 95 at MP 69.1-2, which are called out on the Sheet and include 33VAR and 34VAR, are tabulated on the Buffer Impact Table.

Response: The buffer impacts located at MP 69.1 and 69.2 are now associated with 37VAR (S-A18-15) and 38VAR (S-B18-132) and are provided in the attached, updated Impact Sheets (Attachment D, Sheet 95) and Buffer Impact Table (See Attachment G).

23. It does not appear that the buffer impacts on Sheet 102 at MP 72.7, which are called out on the Sheet, are tabulated on the Buffer Impact Table.

Response: The Zone 2 buffer impacts at MP 72.7 (Haw River) have been reduced to a total of 13.67 square feet. Please refer to the attached, updated Impact Sheets (Sheet 102 in Attachment D) and Buffer Impact Table (Attachment G).

Mountain Valley appreciates the opportunity to provide this information in support of its request for a Joint Permit. Should you have any additional questions or need further information to complete your review, please do not hesitate to contact Alex Miller at 713-374-1599 or via email at alex.miller@nexteraenergy.com or me at 561-691-7054 or via email at kathy.salvador@nexteraenergy.com. Thank you for your continued consideration.

Sincerely,
Mountain Valley Pipeline, LLC

Kathy Salvador

Kathy Salvador
Senior Director, Environmental Services

Attachments:

Attachment A: Updated Qualitative Cumulative Impacts Analysis
Attachment B: HDD Contingency Plan – Technical Data Sheets
Attachment C: USGS Topographic Maps
Attachment D: NRCS Published Soil Survey Maps
Attachment E: Updated Wetland/Waterbody Impact Maps
Attachment F: Updated Wetland Impact Table
Attachment G: Updated Waterbody Impact Table
Attachment H: Updated Buffer Impact Table
Attachment I: Cascade Creek/Dry Creek Conventional Bore Crossing Detail; Wolf Island Creek Conventional Bore Crossing Detail

Attachment J: Representative Stream Crossing Detail Sheets (3); Stream and Wetland Crossing Detail Sheets (3)
Attachment K: Wetland Delineation Addendum Report (October 2019)
Attachment L: Updated Alignment Sheets

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DWR WSRO 401 files