

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

General Project Description

1. Provide the following revised plans that Mountain Valley indicated in February 2017 filings are being updated based on agency consultations:
 - a. Water Supply Contingency Plan;
 - b. Migratory Bird Conservation Plan;
 - c. Acid Forming Materials Identification and Mitigation Plan;
 - d. Annual Standards and Specifications for Virginia (in accordance with the 1992 Third Edition of the Virginia Erosion and Sediment Control Handbook);
 - e. Spill Prevention Controls and Countermeasures Plan; and
 - f. Invasive Plant Species Management Plan.

Response:

- a. There is no document titled Water Supply Contingency Plan. However, Mountain Valley is working with Red Sulphur PSD to develop a contingency plan for their water supply. Mountain Valley will file a copy of the plan with the Commission, but a final plan is not expected until at least mid-2017.
- b. Mountain Valley is finalizing the revised Migratory Bird Conservation Plan and expects to file the plan with FERC in the second half of April 2017.
- c. Mountain Valley is finalizing the Acid Forming Materials Identification and Mitigation Plan and expects to submit it by April 7, 2017.
- d. Mountain Valley is finalizing the Annual Standards and Specifications for Virginia (in accordance with the 1992 Third Edition of the Virginia Erosion and Sediment Control Handbook) for submittal to the Virginia Department of Environmental Quality (VADEQ). Mountain Valley expects to have the finalized version in fall 2017. There are no updates at this time. Mountain Valley will provide the final version to the Commission upon approval by the VADEQ.

Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000

Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017

- e. Please see the attached Spill Prevention Controls and Countermeasures Plan for the State of West Virginia (Attachment DR5 General 1e-1) and the Commonwealth of Virginia (Attachment DR5 General 1e-2). These plans are in the Plan of Development for the Jefferson National Forest.
- f. Mountain Valley is currently finalizing the Invasive Plant Species Management Plan and expects to file the plan with FERC in the second half of April 2017.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: March 30, 2017

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

General Project Description

2. Provide updated and/or track change versions of the following draft environmental impact statement (EIS) appendices:
 - a. Appendix P – Summary of Pipeline Collocation with Existing Rights-of-Way;
 - b. Appendix Q – Roads and Railways Crossed;
 - c. Appendix R – Structures within 50 feet of the Construction Work Area;
 - d. Appendix S – Visual Simulations (including photo simulations and descriptive narrative text); and
 - e. Appendix T – Traffic Counts.

Response:

- a. Mountain Valley has updated Appendix P as Attachment DR5 General 2a. A track changes version was not provided due to an overabundance of minor changes to milepost start and end points in the table.
- b. See Attachment DR5 General 2b.
- c. See Attachment DR5 General 2c.
- d. Mountain Valley expects to file a response by April 7, 2017.
- e. See Attachment DR5 General 2e. Due to the number of changes in the table it is not in redline format.

Mountain Valley confirms that DEIS Appendix O does not require updates. In addition, table 4.3.2-4 from the DEIS has been updated and is included as Attachment DR5 General 2f. The table represents all intakes in a 3-mile proximity (both upstream and downstream) of any Project workspace (pipeline ROW, access roads, or yards).

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

General Project Description

3. Attachment DR4 Land Use 17, filed February 2017, stated that: “the data for the Proposed Route in the table reflect minor revisions that Mountain Valley made in December 2016 to the October 2016 Proposed Route.” Provide a table that lists all of the changes Mountain Valley made to the proposed route in December 2016, by milepost (MP) and a reason for each modification, together with updated 7.5-minute U.S. Geological Survey (USGS) topographic maps and alignment sheets that reflect those changes

Response:

The referenced minor revisions occurred at two locations, one within the Jefferson National Forest, and one at the crossing of the Blue Ridge Parkway. These changes were implemented in consultation with USFS and NPS, respectively. As such, no new landowners were affected by the December 2016 revisions.

A table that lists the changes made to the proposed route in December 2016 is included as Attachment DR5 General 3a. Updated 7.5-minute USGS topographic maps are included as Attachment DR5 General 3b. Updated alignment sheets are included as Attachment DR5 General 3c. Please note that Mountain Valley previously submitted updated alignment sheets to the Commission (on December 22, 2016 for the Jefferson National Forest, and February 17, 2017 for the Blue Ridge Parkway).

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Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

General Project Description

4. Revise Attachment DR4 General 7 (Survey Status for Cathodic Protection Ground Beds) to include waterbodies. The table indicates that surveys have not been completed at the following locations: MVP-CPGB-11, MVP-CPGB-17, MVP-CPGB-19, and MVP-CPGB-20. Provide the reason these surveys have not yet been completed and provide the anticipated completion date. Identify measures that Mountain Valley would implement to avoid, minimize, or mitigate impacts on any environmental resources at the cathodic protection beds.

Response:

Attachment DR4 General 7 (Survey Status for Cathodic Protection Ground Beds) includes waterbodies in the Wetland Survey Status Column. Streams are designated with the prefix "S-".

The status for MVP-CPGB-20 has been updated to reflect that the survey was complete and that no features were identified there and provided in Attachment DR5 General 4. The other three: MVP-CPGB-11, MVP-CPGB-17, and MVP-CPGB-19, will likely not be surveyed until after the FERC Certificate is issued due to access restrictions.

Sensitive environmental resources will be protected throughout the Project area using state approved erosion and sediment control best management practices including, but not limited to, compost filter socks, super silt fences, belted silt fences, temporary diversion berms, rock filters, and sediment filter bags. The location and maintenance associated with the best management practices are identified in the West Virginia Erosion and Sediment Control Plan and the Virginia Annual Standards and Specifications.

Permanent impacts to aquatic resources will be mitigated through the appropriate state-approved Mitigation Bank and/or In-Lieu Fee program.

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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

General Project Description

5. Address the issues raised in the following letters filed with the FERC:
 - a. Accession number 20170310-5024 (Dr. Robert Jones and Dr. Ernst Kastning);
 - b. Accession number 20161123-5028 (Smith Mountain Lake Association);
 - c. Accession number 20170222-5062 (Appalachian Trail Conservancy [ATC]);
 - d. Accession number 20170223-5090 (Roanoke Appalachian Trail Club);
 - e. Accession number 20161222-5518 (Hodges);
 - f. Accession number 20161216-5060 (Number 9 regarding torque probe values);
 - g. Accession number 20170306-5054 (U.S. Forest Service [FS]);
 - h. Accession number 20161221-5087 (U.S. Environmental Protection Agency [EPA]); and
 - i. Accession number 20161222-5521, regarding black powder sludge.

Response:

- a. The referenced letter includes the same central premise and general arguments raised in Mr. Kastning's July 2016 report, except that it is focused on the Mount Tabor area. In December 2016, Mountain Valley provided a detailed, fact-based response to Mr. Kastning's July 2016 report. Mountain Valley's December 2016 response applies to the referenced letter as well. In addition, Mountain Valley has filed numerous detailed analyses and responses to federal and state agencies and landowners on the topics of karst terrain (including electrical resistivity surveys in the Mount Tabor area), hydrogeology, foundation and slope analyses, water resources, and seismic hazards analysis. In addition, Mountain Valley has developed the Karst Hazards Assessment, Karst Mitigation Plan, Seismic Hazards Assessment, Erosion and Sediment Control Plan, Spill Prevention, Containment and Countermeasures Plan, and the Water Supply

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Identification and Testing Plan. These Project-specific plans will be used to address concerns similar to those raised in the referenced letter.

- b. In regards to the Smith Mountain Lake Association comments regarding Mountain Valley's consideration of potential impacts from aquatic invasive species, Mountain Valley is currently working with the USACE and state resource agencies to obtain necessary waterbody crossing permits. Mountain Valley will adhere to FERC procedures, as well as conditions within the project-specific waterbody crossing authorizations. Mountain Valley will incorporate measures identified by permitting agencies to control non-native invasive species into the project mitigation plan, which is currently being finalized. In addition, several comments included inaccuracies, which are clarified below:

Page 9; Bullet 1.

Comment: The proposed MVP route crosses the Monongahela River close to its known points of infestation with zebra mussels thereby potentially contaminating any and all construction and related equipment used to construct and test the pipeline. This type of equipment, can, and has been shown in many locations, to be a vector (source of transmittal) for additional infestations of zebra mussels (*Dreissena polymorpha*).

Response: MVP does not cross the Monongahela River.

Page 9; Bullet 2.

Comment: The MVP intends to draw water from the Kanawha River, another river with known infestations of zebra mussels and employ that water for pressure testing of the pipeline, thereby potentially contaminating any and all construction and related equipment used to construct and test the pipeline. This type of equipment can, and has been shown in many locations, to be a vector (source of transmittal) for additional infestations of zebra mussels.

Response: MVP is not proposing to withdrawal water for hydrostatic testing from the Kanawha River. Sources waters for hydrostatic testing includes municipal water sources with the exception of two surface waterbodies in West Virginia (i.e., Greenbrier River and Meadow River).

Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000

Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017

Page 9; Bullet 3.

Comment: The proximity of the proposed MVP route to known infestations of zebra mussels including within 30 miles of known infestations of the Buckhannon, Monongahela and Ohio Rivers, within 40 miles of known infestations of the Kanawha River is a major risk to the spread of AIS. The movement of MVP equipment, supplier and service equipment and even workers' private transportation and clothing can serve as vectors (sources) of zebra mussel contamination of additional streams, rivers and lakes.

Response: Aquatic invasive species such as zebra mussels (adult and veligers) are not airborne organisms and therefore not transmitted in such a manner. Adult zebra mussels are sessile animals and attach to various media (e.g., rocks, ropes, boat hulls, barges, intake facilities, dam walls, etc.) using byssal threads. Transmission of zebra mussels must involve the transfer of live adults or contaminated water. MVP does not plan to use equipment that comes in contact with contaminated waters or transport "contaminated" waters such as the Ohio, Monongahela, Buckhannon, or Kanawha rivers. MVP equipment, vehicles, and personnel are not likely vectors for AIS by simply traveling through 'contaminated areas' that are more than 30 miles away. By that rationale, vehicles (private and commercial) passing through 'contaminated areas' on roads and highways could be vectors for the transmission of AIS and potentially subject to inspections. The transmission of zebra mussels on equipment and personnel traveling through a 'contaminated area' that is 30+ miles away from the Project may not be plausible.

Page 9; Bullet 4.

Comment: The plan of the proposed MVP to return potentially infested pressure-test water back to the environment poses a major risk for the spread of AIS. Both adult mussels and their early life stage (referred to as veligers), can remain viable even with significant concentrations of 'cleaning and decontamination' agents. The concentration and holding (treatment) time for such decontamination must meet the specific requirements associated with zebra mussel and veliger decontamination.

Response: The comments regarding the viability of zebra mussels after exposure to "...significant concentrations of 'cleaning and decontamination' agents" are most relevant to adult zebra mussels. Adults

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

are relatively more resilient to various treatment methods than larval veligers because adults can close valves (shells) during adverse environmental conditions and re-open once environmental conditions improve. Veligers are microscopic and planktonic. Numerous factors can affect the overall mortality rate of veligers including water quality conditions (Hincks and Mackie 1997, Matthews and McMahon 1999, Cohen 2001), desiccation, and turbulence and shear stressors (Horvath and Lamberti 1999, Rehmann et al. 2003). For example, air bubbles in water can cause enough turbulence and shear stress to cause mortality of veligers. In contrast, zebra mussel veligers are less resilient than adults.

Literature Cited

- Hincks, S.S. and G. L. Mackie. 1997. Effects of pH, calcium, alkalinity, hardness, and chlorophyll on the survival, growth, and reproductive success of zebra mussel (*Dreissena polymorpha*) in Ontario lakes Can. J. Fish. Aquat. Sci. 54: 2049–2057.
- Horvath, T.G. and G.A. Lamberti. 1999. Mortality of Zebra Mussel, *Dreissena polymorpha* Veligers during Downstream Transport. Freshwater Biology. 42:69-76.
- Matthews M. A. and R.F. McMahon. 1999. Effects of temperature and temperature acclimation on survival of zebra mussels (*Dreissena polymorpha*) and Asian clams (*Corbicula fluminea*) under extreme hypoxia. J. Moll. Stud., 65: 317–325
- Rehmann, C.R., J.A. Stoeckel, and D.W. Schneider. 2003. Effect of turbulence on the mortality of zebra mussel veligers. Can. J. Zool. 81: 1063–1069.

- c. Mountain Valley expects to submit a response by April 7, 2017.
- d. Mountain Valley expects to submit a response by April 7, 2017.
- e. Mountain Valley previously responded to a data request from the Commission with respect to a November 2015 submission by Mr. Hodges. See the response to Resource Report 6, Question 4, submitted April 21, 2016. Mr. Hodges’s submittal on December 22, 2016 is largely identical to his November 2015 submittal. Mountain Valley supplements its prior response to Mr. Hodges with the following information.

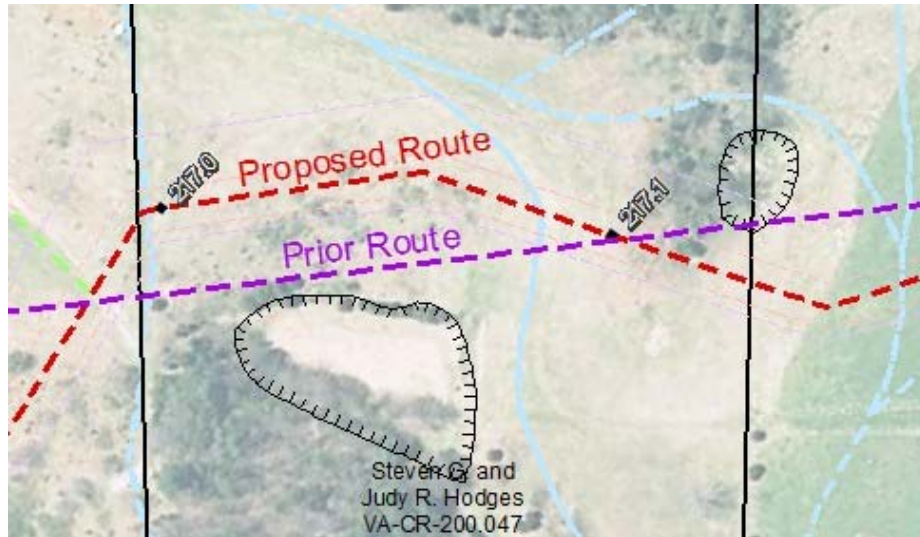
Alignment Adjustments:

Based on field visit observations by the Mountain Valley Karst Specialist Team, the Project alignment was adjusted on the Hodges property in

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

October 2016 to increase the distance between the alignment and the two sinkholes Mr. Hodges identified in his December 2016 letter. This is demonstrated in the snippet below from the relevant alignment sheet. This alignment adjustment provides additional separation buffer from the sinkholes.



The sinkhole referenced by Mr. Hodges at MP 217.13 is a small sink with fieldstone-filled bottom. This configuration of sinkhole is commonly observed throughout the region. Observations and mapping by the Mountain Valley Karst Specialist Team (KST) (as part of the Karst Hazards Assessment) indicated the contributing watershed to this sinkhole is approximately 5.2 acres. Since there was no ponded water observed in the sinkhole during the September 2, 2015 KST field observation site visit for the Karst Hazards Assessment (on which Mr. Hodges accompanied the KST), it is clear that this sinkhole ultimately drains precipitation and overland flow into the subsurface during precipitation events. This is a normal and fully expected process in karst terrain, and the observation presented by Mr. Hodges in his December 2016 letter merely reflects reasonably expected conditions in karst terrain. Mountain Valley, aware of karst processes, has prepared a Karst Mitigation Plan and an Erosion and Sediment Control Plan with karst-specific BMPs in order to avoid or mitigate sinkholes and other karst features and to prevent the uncontrolled release of surface water from the limit of disturbance during construction. These measures will protect the karst features and the underlying karst hydrogeologic system.

Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000

Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017

- f. The referenced discussion of torque probe values does not indicate the relevancy to pipeline construction and confuses two engineering concepts. Contrary to the referenced letter, torque probe values are not used to determine soil classifications or soil bearing capacities. Torque probe values (measured in distance unit multiplied by force – ex: inch-pounds) are a measure of soil torque capacity. Measurements are performed using a torque probe tool. The resultant values are used for design of anchoring systems. For example, torque probe values are used to design anchoring systems for storm protection of mobile homes. This concept is not related to soil bearing capacity.
- g. Mountain Valley expects to submit a response by April 7, 2017.
- h. The referenced filing is identical to the EPA’s filing in Accession No. 20161229-0033. Mountain Valley responded to Accession No. 20161229-0033 on February 23, 2017. See Attachment DR4 General 3d submitted on that date.
- i. Black powder is not a concern for the Mountain Valley Pipeline. Black powder is a solid pipeline contaminant that is known to occur in both gas and liquid pipelines worldwide. It is formed by chemical and/or biological reactions most often associated with either gathering systems that transport unprocessed natural gas or natural gas storage systems. It is associated with pipeline systems containing higher moisture contents. By contrast, the Mountain Valley Pipeline system will transport gas with low moisture content.

Mountain Valley has incorporated multiple layers of defense against the formation of this contaminant throughout the design, construction, and operation project phases:

- The first, and most important, is the quality of the natural gas product. Mountain Valley has developed a gas quality specification in its Tariff. This specification controls the quality of natural gas received and delivered by the system. The specifications include limits on the moisture content of the gas and other corrosion-inducing components. Mountain Valley will utilize instrumentation at receipt and delivery points to determine the quality of the gas. By controlling the quality of the gas, Mountain Valley will be able to

Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000

Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017

prevent the possibility of formation of contaminants like black powder.

- The design of Mountain Valley Pipeline includes multiple layers of product quality assurance. For example, at multiple locations along the pipeline system, the gas passes through a series of filtration vessels specifically designed to remove any contaminants.
- As part of the construction procedures, the entire pipeline will be cleaned and dried before any natural gas is permitted to enter the system.
- Finally, throughout its operating life the pipeline will be periodically swept with internal devices known as pigs and inspected with internal robotic devices known as smart pigs to identify corrosion and limit the possibility of black powder formation.

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Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

General Project Description

6. Clarify why MLV 30 listed in table 2.1-7 appears to be out of order (i.e., the MP for MLV 30 is less than for MLV 29).

Response:

As part of its February 2017 data response, Mountain Valley updated Table 2.1-7 (Cathodic Protection Units Along the Route of the Mountain Valley Project). This table incorrectly showed Facility 30 with a milepost before Facility 29. A corrected table is included as Attachment DR5 General 6.

Table 2.1-5 (Aboveground Facilities for the Mountain Valley Project) was also updated in February 2017, and correctly shows MLV 30 at a milepost beyond MLV 29.

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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
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**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

General Project Description

7. Revise table 2.3-1 from the draft EIS to include the temporary (construction) and permanent (operations) impact acres for the Webster Tap, Roanoke Lafayette Tap, and the Roanoke Franklin Tap.

Response:

The Webster, Roanoke Lafayette, and Roanoke Franklin Taps will not add temporary or permanent impact acres outside of those already listed in DEIS Table 2.3-1. Mountain Valley will construct the taps within the proposed 125-foot temporary construction right-of-way, and the completed facilities will reside within the 50-foot permanent pipeline easement.

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**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Water Resources

1. Attachment DR4 Water Resources 2 (filed February 2017) provided “Septic Systems within the Limits of Construction Disturbance.” However, our January 2017 EIR requested identification of septic systems within 150 feet of all construction workspaces (by MP/county/state). Revise the table as necessary; or explain why data may not be currently available.

Response:

The referenced table has been updated to include septic systems within 150 feet of all construction workspaces. The updated table is included as Attachment DR5 Water Resources 1. The changes as compared to the table submitted in February 2017 are noted in red. Mountain Valley will continue to account for septic systems within 150 feet of construction workspaces as determined in field review or communicated by landowner.

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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
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**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Water Resources

2. For table 4.3.1-2 (Springs and Swallets Identified within 150 feet [500 feet in karst terrain] of the Mountain Valley Project Construction Work Area – updated February 2017) stated that an unnamed spring used for cattle near MP 225.0 is located within 150 feet of the construction workspace. Provide the exact distance that this spring is located from the nearest construction workspace boundary.

Response:

The proposed construction workspace is no longer within 500 feet of the “spring used for cattle” previously identified near MP 225.0 and this spring has been removed from table 4.3.1-2.

An updated table 4.3.1-2 is included as Attachment DR5 Water Resources 2.

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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
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**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Water Resources

3. As previously requested in our January 2017 EIR, describe impacts that could occur to the spring located within the bounds of proposed access road MVP-SU198 at MP 161.3, including those impacts that may occur due to road modifications (i.e., widening, grading, and stabilization) and the use of the additional temporary workspace at the confluence of MVP-SU198 and the pipeline right-of-way. In addition, describe the methods Mountain Valley would use to determine whether or not is necessary to move the access road to avoid impacts on the spring.

Response:

The spring identified by civil surveyors near MP 161.3 is adjacent to an existing logging road that Mountain Valley proposes to use as an access road and temporary construction workspace MVP-SU198.

Widening, grading and stabilizing the proposed access road could impact this spring by temporarily causing temporary sediment loading to the discharge from disturbed ground, or temporarily redirecting the spring effluent through grading and compaction until pre-construction conditions are restored. However, Mountain Valley expects to span the spring, which would limit impacts on the spring.

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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
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**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Water Resources

4. Attachment General 3b3 (filed February 2017) stated that Mountain Valley will be contacting several Public Service Districts (including, but not limited to, Rainelle and Greenbrier County) in “mid-2017” to request permission to conduct water quality testing of primary and secondary groundwater supply wells. Provide the status of communications with the Public Service Districts regarding water quality testing. Also, indicate the measures Mountain Valley would implement to avoid, minimize, or mitigate impacts on the Public Service Districts groundwater supplies.

Response:

Beginning in 2015, Mountain Valley made initial contacts with representatives of all Public Service Districts (PSD) that have water supplies (wells, springs, and surface intakes) located within a USGS HUC-10 water shed that is traversed by the proposed alignment. The objectives of the contacts were to describe the Project and address the suppliers’ concerns, if any. To date, no PSD with a groundwater supply has requested information or assistance from Mountain Valley. At the request of the Big Bend PSD and the Red Sulphur PSD, Mountain Valley met with these public water suppliers on multiple occasions and established a dialogue, and is discussing contingency measures to ensure there is no interruption to their water service during construction, land reclamation and operation of the pipeline.

Mountain Valley will conduct follow-up contacts to PSDs in mid-2017 to update the PSDs on the current status of the Project and address any new concerns. Mountain Valley will also request permission from the PSDs to allow Mountain Valley to conduct pre-construction water quantity and quality testing at their supplies consistent with Mountain Valley’s Water Supply Identification and Testing Plan.

Public drinking water supply wells are typically deep into major aquifers, with the upper unconsolidated overburden cased-off from the well in order to avoid potential surface water influence (regardless of pipeline construction). The nature of the proposed pipeline construction is such that the risk for impacting a deep high-yield public water supply well is so remote as to be negligible.

Minimization and mitigation measures will be developed for those PSDs that request such measures. Specific measures depend upon the nature of the water supply, but in general short-term measures will include establishing additional storage capacity (e.g., temporary tankage) to have back-up water supply in the unlikely event of temporary impact to a water supply during construction. Identifying and having the engineering and

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
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**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

regulatory processes in place to utilize an alternate water supply temporarily also serves as a potential mitigation measure.

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Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
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Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017

Water Resources

5. Regarding the crossings of the Greenbrier, Elk and Gauley Rivers and in response to a comment (accession number 20170228-5216) in particular, provide the following:
 - a. A justification for the non-perpendicular pipeline crossing design proposed for the Greenbrier River at MP 171.6, which appears to require about 130 feet more in-water construction than would a perpendicular crossing.
 - b. A detailed site-specific description of the dry-ditch cofferdam crossing methods proposed for the Greenbrier, Elk, and Gauley Rivers that includes for each crossing:
 - i. the material(s) used to make the cofferdam;
 - ii. cofferdam dimensions;
 - iii. methods of delivering the cofferdam to the sites;
 - iv. location(s) at which the cofferdam would be placed during construction;
 - v. cofferdam removal methods;
 - vi. potential site-specific impacts on water resources associated with the use of cofferdams (e.g., turbidity, sedimentation).
 - c. Pipeline burial depths and scour mitigation strategies that would be used in the case that the field-verified depth-to-bedrock is at or very near the streambed surface (e.g., the streambed is composed of exposed bedrock).
 - d. A detailed description of the revetment mats that could be used to mitigate scour impacts that includes:
 - i. the materials used to create the mats;
 - ii. the areal extent to which the mats would be placed on the streambed and any associated impacts (e.g., loss of habitat, visual effects); and
 - iii. the revetment mats' ability to resist damage by flood-level currents.

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

- e. A detailed description of the armor layers that could be used to mitigate scour impacts that includes:
 - i. the minimum armor particle size for a 100-year peak discharge event at the proposed Greenbrier River crossing and the feasibility of creating an armor layer that consists of a particle size equal to or greater than the estimated minimum particle size; and
 - ii. an armor layer's expected ability to resist displacement/destruction by flood-strength water flows in areas with a generally smooth streambed surface, such as the proposed Greenbrier River crossing.

Response:

- a. The non-perpendicular pipeline crossing of the Greenbrier River avoids cultural resources (see Attachment DR5 Water Resources 5a-1 (PRIVILEGED)). On the south side of the Greenbrier River, a perpendicular crossing would have directly impacted the National Register-eligible Wiseman Residence that meets Criterion C as a well-preserved vernacular expression of the Prairie style of architecture dating to the early twentieth century. Additional information regarding the Wiseman Residence can be found in the report entitled *Mountain Valley Pipeline Project Phase I Cultural Resources Survey, Volume IV: Summers and Monroe Counties West Virginia* that was filed with FERC on August 12, 2015. WVDCH concurred with the NRHP-eligibility recommendation for this resource in a letter dated October 6, 2015 that was filed with FERC October 23, 2015. A discussion of archaeological resources is included as Attachment DR5 Water Resources 5a-2 (PRIVILEGED).
- b. Descriptions include:
 - i. The following is a list of materials that will be used in the cofferdam-Portadam system for each crossing: steel A-frame supports, U-Bolt fastener, Waterproof Membrane, Sandbags, Silt Booms, Turbidity Curtains, Sediment Filter Bags, Equipment Mats, and Water Pumps.
 - ii. The dimensions for the proposed Elk River crossing are expected to be as follows: Phase 1: 75 feet wide x 150 feet long. Phase 2: 75 feet wide x 130 feet long.

Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000

Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017

The dimensions for the proposed Gauley River crossing are expected to be as follows: Phase 1: 75 feet wide x 175 feet long. Phase 2: 75 feet wide x 155 feet long.

The dimensions for the proposed Greenbrier River crossing are expected to be as follows: Phase 1: 75 feet wide x 220 feet long. Phase 2: 75 feet wide x 200 feet long.

- iii. The materials for the proposed cofferdam-Portadam will be transported to site by Portadam, Inc. using traditional hauling methods such as low-boy tractor and trailers, flatbed trucks, and pickup trucks.
- iv. See Attachment DR5 Water Resources 5b.
- v. The cofferdams will be removed by Portadam by first replacing any boulders that were displaced inside the work area to their approximate location. The location of the boulders will be identified by GPS before they are moved to ensure replacement at the same location. Once the boulders are placed, Portadam will introduce water back into the dry bed inside the dam. At that point, Portadam will begin to remove the waterproof membrane around the entire dam. Finally, the A-frame supports will be removed and the Phase 1 or 2 will be restored.
- vi. Project impacts will be temporary and less than if these crossings utilized the open-cut wet method. There will be a minor increase in sedimentation while the structure is anchored to the riverbed during Phase 1 and 2 as well as immediately following restoration of streamflow to the restored channel. Sedimentation will be minimized through use of a pneumatic handheld hammer (operated by a diver team to install the instream anchors (bolts). This will minimize (or eliminate) equipment operation within the active waterbody further reducing potential for sedimentation to occur. Following installation of the support structure, the waterproof membrane will be deployed. Once the Portadam is in operation, water within the work area will be pumped through a sediment filter bag and dewatering structure located in an upland area adjacent to the crossing in a vegetated area. A turbidity curtain will be placed along the waterbody bank adjacent to the dewatering structure to further reduce sedimentation potential.

Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000

Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017

During dewatering of the workspace, Mountain Valley will relocate (to the extent practicable) aquatic species from the workspace to the naturally flowing portion of the river to minimize impacts to these resources. Following completion of the crossing installation, there will be a temporary increase in sedimentation once the waterproof membrane is removed and flow is returned to the restored work area.

- c. As Mountain Valley previously stated in its January 15, 2016 data response to Resource Report 1, Question 11, “Mountain Valley Pipeline will install the pipeline with a minimum of 4 feet of cover for navigable waterbodies and a minimum of 3 feet of cover for non-navigable waterbodies measured from the waterbody bottom to the top of the pipe, except in consolidated rock where a minimum of 2 feet of cover will be required.” (emphasis added). Consistent with this prior statement, if field-verified depth-to-bedrock is at or very near the streambed surface for these three navigable waterbodies, then the pipe depth will meet or exceed the minimum burial depth required by PHMSA (49 CFR 192.327). In this circumstance, the required minimum 2 feet of cover would be sufficient to mitigate potential scour, which is limited to the bedrock surface. Therefore, no additional mitigation is required if the pipeline is installed below the bedrock surface.
- d. A detailed description of the revetment mats includes:
- i. Revetment mats are created by using a variety of materials. The main components are pre-cast blocks, usually made from concrete. Other materials could include wire cable or ropes (to connect these blocks) as well as geotextiles or geogrids.
 - ii. If used, revetment mats would be placed over top the pipe for the distance it is in the streambed. To the extent revetment mats would be used, they would not be wider than the permanent right-of-way, which is 50 feet. may also be placed a continuous distance upstream and downstream of the crossing. Potential loss of habitat and visual effects would not extend beyond the permanent easement.
 - iii. Once a site-specific revetment mat has been selected, its properties (weight and geometry of block; angle of the surface on which it rests) are checked against the applied flood conditions (velocity and shear stress). The revetment mat’s restraining moments are then

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

compared to the flood condition's overturning moments. Restraining moments must be greater than the overturning moments by, at least, the engineering standard best practice factor of 1.2 times. This is also considered the safety factor.

- e. Regarding the armor layers used to mitigate scour impacts:
 - i. Utilizing the U.S. Army Corps of Engineers (USACE) Engineering Manual No. 1110-2-1601 (EM-1601) (USACE 1994), the minimum armor particle size is 24-inches for a 100-year peak discharge event at the Greenbrier River crossing. However, in the event that the bedrock at the Greenbrier crossing is close to the surface, an armor layer would not be necessary to prevent scour.
 - ii. Mountain Valley does not expect to use armor layers where the streambed surface is generally smooth.

Respondent: John Uhrin
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Phone Number: 724-873-3497
Date: March 30, 2017

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Water Resources

6. Resolve discrepancies between the statement from Attachment DR4 General 3c (filed February 23, 2017) that: “Mountain Valley does not intend to utilize temporary culvert installations or placement of temporary (earthen) fill materials during the Project’s crossing of waterbodies and wetlands on Project access roads” and Mountain Valley’s response to Water Resources 20 that provided typical drawings for culvert installations. Clarify if Mountain Valley intends to install temporary or permanent fill at any waterbody or wetland crossing. If temporary fill is intended provide site-specific plans, including details regarding materials to be used and installation and removal methods, and site-specific justifications for each location.

Response:

Mountain Valley does not intend to use temporary culverts or earthen fill on existing streams or wetlands associated with the Project's access roads. Streams that are too large to span with a single structure will require a support structure that will be located approximately in the middle of the span. The support structure will be an impervious structure, such as a jersey barrier or pipe bundle. Earthen fill will not be used to provide instream support. Wetlands that cannot be avoided will be crossed using timber mats. No earthen fill will be utilized for temporary crossings of streams or wetlands.

To safely construct the project, Mountain Valley will install temporary and permanent fill in both wetlands and streams along pipeline construction right-of-way. Temporary fill in streams will consist of the instream diversions associated with the Portadam, cofferdam, dam and pump, or flume pipe systems. The material used for the cofferdam, dam and pump, or flume pipe will be jersey barriers, sandbag or gravel bags, or clean rock. The Portadam structure is an engineered, pre-fabricated structure covered with an impervious membrane.

Attachment DR5 Water Resources 6 includes typicals for stream crossing methods for both access roads and the pipeline construction right-of-way, including the location of temporary fills. Temporary fills in wetlands would include placement of timber mats / equipment mats, and erosion and sediment controls, etc. Permanent fill will include clean gravel/rock and culverts on permanent access roads where necessary. All impacts will be accounted for during permit submission to the USACE Huntington, Norfolk and Pittsburgh District offices as well as WVDEP and VADEQ.

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: March 30, 2017

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Water Resources

7. For table 4.3.2-12 (Mountain Valley Pipeline Locations Paralleling Waterbodies within 15 Feet – updated October 2016), provide a site-specific justification for paralleling the UNT to Foul Ground Creek at MP 271.7.

Response:

Mountain Valley expects to parallel the UNT to Foul Ground Creek at MP 271.7 for a short distance of approximately 55 feet. The tributary is intermittent; however, in the event the tributary is flowing at the time of construction, Mountain Valley will use the open-cut dry method to minimize impacts. Mountain Valley will return the tributary to its pre-construction contours. As such, long-term impacts are not expected. However, Mountain Valley will evaluate at a later time a field realignment on the landowner's property where the parallel portion of the tributary would be outside of the limit-of-disturbance.

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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Water Resources

8. Attachment DR4 General 3c (filed February 2017) stated that: “Mountain Valley will conduct further desktop reviews to identify private ponds located within 0.25-mile downslope of the limit of disturbance.” Clarify if these ponds have been previously identified and data about them filed with the FERC.

Response:

Ponds located within the survey corridor have been identified and provided to FERC. Mountain Valley will perform desktop reviews of available mapping to identify ponds within 0.25 mile downslope of the limit of disturbance. Mountain Valley expects to submit this data by April 7, 2017.

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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Water Resources

9. Mountain Valley's February 2017 filings refer to a Water Resources Identification Plan and a Water Supply Identification and Testing Plan. Clarify if these are the same plan. If they are not the same, provide the Water Supply Identification and Testing Plan.

Response:

The referenced plans are the same.

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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Water Resources

10. Table 4.3.2-11 (updated by Mountain Valley in March 2017), Mountain Valley's Aquatic Resource Report for the Jefferson National Forest (JNF) (dated February 2017), and Mountain Valley's Biological Evaluation for the JNF (dated March 2017), each contain differing counts and listings of the waterbodies that would be crossed within the JNF. Resolve these discrepancies.

Response:

Mountain Valley's Aquatic Resource Report for the Jefferson National Forest includes all streams and wetlands delineated on the Jefferson National Forest property regardless of their proximity to the Pipeline centerline and Project limits-of-disturbance, while DEIS Table 4.3.2-11 and Table 2 in the Biological Evaluation represent only those resources impacted by the Pipeline centerline and the Project's limits-of-disturbance. Therefore, additional streams are represented in the Aquatic Resource Report that are not within DEIS Table 4.3.2-11 and Biological Evaluation Table 2.

Mountain Valley has updated the Aquatic Resource Report to include streams S-KL23, S-KL22, and S-KL21, which were inadvertently left out of the report. See Attachment DR5 Water Resources 10a. DEIS Table 4.3.2-11 and Biological Evaluation Table 2 have been updated to correctly list the streams impacted by the Mountain Valley Project within the Jefferson National Forest. See Attachments DR5 Water Resources 10b and 10c (PRIVILEGED).

Respondent: Megan Neylon
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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Wetlands

1. Per email notification on March 1, 2017 from the Huntington District of the U.S. Army Corps of Engineers (COE), provide details about the proposed crossing of the federally-approved Kincheloe Wetland Mitigation Bank in Harrison and Lewis Counties, West Virginia. Discuss project-related impacts on this wetland mitigation bank, measures Mountain Valley would implement to avoid, minimize, mitigate those impacts, and documentation of communications with the COE about this issue.

Response:

Mountain Valley has avoided and minimized impacts by reducing the temporary right-of-way to 75 feet, crossing the wetland at its narrowest point, and not widening the access road. However, temporary wetland impacts are anticipated to occur as a result of installing the pipeline and using the existing access road. The affected wetland will be restored upon completion of the crossing, which negates the need for mitigation. During construction, the area adjacent to the limits of disturbance will be protected using compost filter sock. The location and maintenance associated with the BMPs are identified in the West Virginia Erosion and Sediment Control Plan.

Representatives of Mountain Valley and the Kincheloe Mitigation Bank had a conference call on February 10, 2017 with Justin Elkins and Jared Pritts of the USACE to discuss Mountain Valley's possible temporary impacts to the bank. It was noted by Kincheloe Mitigation Bank to the USACE that the 50-foot permanent right-of-way will not be available for mitigation credit purposes for Mountain Valley or others. The USACE representatives conveyed that they would further discuss the project with Mountain Valley's USACE Project Manager - Josh Shaffer. On March 16, 2017 Mountain Valley met with the USACE Pittsburgh District to discuss the project and the Kincheloe Mitigation Bank. Mr. Shaffer is aware of the crossing and anticipates including special conditions within the Nationwide Permit addressing the crossing.

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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Fisheries

1. Attachment DR4 General 3c (filed February 2017) stated that: "...permanent impacts to aquatic resources will be mitigated through either existing mitigation banks or state approved In-Lieu Fee programs." Provide a detailed description of aquatic impacts for which mitigation banks or in-lieu fee programs would be used. File documentation of agency communications and review of Mountain Valley's proposed aquatic resources mitigation program.

Response:

Attachments DR5 Fisheries 1a and 1b identify the streams and wetlands that will require mitigation and the associated impact types. The proposed mitigation for the permanent resource impacts in West Virginia have been addressed in Mountain Valley's granted WV 401 Water Quality Certification Application, the Huntington District Nationwide 12 application (submitted February 17, 2017), and the Pittsburgh District Nationwide 12 application (submitted February 17, 2017). The permanent resource impacts in Virginia will be included in the Nationwide 12 application which will be submitted during second quarter 2017.

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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Fisheries

2. In response to public comments, provide a discussion of whether the MVP would impact the newly discovered species of crayfish (*Cambarus (Jugicambarus) pauleyi*) that is endemic to south-central West Virginia.

Response:

The Meadow River mudbug (*Cambarus pauleyi*) is primarily a burrowing species that was recently described by Loughman et al., in 2015. This member of the *Jugicambarus* subgenus was formerly *Cambarus dubius* (Faxon, 1884), and is accepted as part of the *C. dubius* complex, which includes multiple undescribed species. *Cambarus pauleyi* is endemic to the Meadow and Greenbrier River basins within Greenbrier and Monroe counties, West Virginia. This colorful “blue” crayfish is among a group known as primary burrowers and is therefore an upland species, not confined to streams and rivers. Based on their current known distribution it appears they are limited to higher elevations between 730 and 790 meters (2395-2590 ft) (Loughman et al., 2015).

The Project avoids the known, extant population (six locations) within the preferred elevation range of the Meadow River watershed. Similarly, the two known locations in the Greenbrier River (Monroe County) watershed are avoided. The project traverses 2.8 kilometers (1.8 mi) of the aforementioned elevation range in Greenbrier and Monroe counties that may potentially support populations of *C. pauleyi*; however, little information is known or available about the species life history and the full extent of its distribution. Currently *C. pauleyi* is neither federally listed nor state-protected. Because it is not listed, correspondence with state resource agencies regarding this species has not occurred.

Due to Mountain Valley’s avoidance of all known population locations in these watersheds and the limited Project disturbance in the relevant elevation range in these watersheds, Mountain Valley does not anticipate impacts to the species.

Literature Cited

Loughman, Z. J., R. F. Thoma, J. W. Fetzner Jr., and G. W. Stocker. 2015. *Cambarus (Jugicambarus) pauleyi*, a new species of crayfish (Decapoda: Cambaridae) endemic to southcentral West Virginia, USA, with a re-description of *Cambarus (J.) dubius*. *Zootaxa* 3980:526-546.

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Vegetation

1. Attachment DR4 General 3b2 (filed February 2017) stated that some areas of the right-of-way would be hand-planted with trees and shrub species. Clarify if the areas that would hand-planted with trees/shrubs would be limited to the JNF or if this would apply to the entire pipeline route. Describe the methodologies to be used for hand-planting trees/shrubs.

Response:

One stream crossing within the Jefferson National Forest (JNF) (UNT to Craig Creek) is proposed to be restored with hand planted vegetation. Mountain Valley will follow the USFS's guidelines regarding hand-planting trees and shrubs.

Outside of the JNF, Mountain Valley is discussing with relevant federal and state agencies whether hand-planting trees and shrubs would be appropriate or required in specific areas. In the event that hand-planting trees and shrubs is determined to be appropriate or required, Mountain Valley will discuss the methodology in consultation with these agencies.

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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Vegetation

2. Attachment DR4 General 3c (filed February 2017) stated that: “Mountain Valley is evaluating the service losses associated with these direct and indirect [forest] impacts, which it will address through a suite of mitigation measures developed in consultation with relevant federal and state resource agencies. These measures will be the result of ongoing consultation with U.S. Fish and Wildlife Service (FWS), Virginia Department of Conservation and Recreation (VDCR) and Virginia Department of Game and Inland Fisheries (VDGIF, and West Virginia Department of Natural Resources (WVDNR).” Provide the specific measures Mountain Valley has developed to mitigate for impacts on upland forest, and document agency communications regarding this forest mitigation program.

Response:

Mountain Valley is continuing to consult with relevant agencies within West Virginia and Virginia. Measures being proposed and discussed with the agencies are not yet final. Mountain Valley will file its mitigation plan when finalized.

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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Vegetation

3. Provide additional information, including references to scientific literature if available, to support Mountain Valley’s assertion in DR4 General 3c that colonization of the permanent right-of-way by invasive plants following two growing seasons after restoration “would not be attributable to the construction or operation of the Project.”

Response:

Mountain Valley did not assert that colonization of the permanent right-of-way by invasive plants following two growing seasons would not be attributable to the construction or maintenance of the Project. This phrase was taken out of context. The referenced attachment stated:

“Mountain Valley will conduct non-native invasive species monitoring and management for up to two growing seasons and in accordance with applicable federal and state recommendations. However, it is neither recommended nor reasonable for MVP to continue managing invasive species for the life of the pipeline – especially given that any invasive species occurring in the area of the Project so long after construction would not be attributable to the construction or operation of the project.”

As mentioned in the referenced attachment, Mountain Valley is prepared to minimize the spread of invasive plant species and will follow state and federal recommendations for management of invasive species for up to two growing seasons.

Invasive species are omnipresent in the U.S. landscape, including the Project Area and along much of the proposed route in Virginia and West Virginia. Complete eradication and avoidance of non-native invasive species is not possible because they are present throughout the landscape and will be present regardless of Mountain Valley activities.

Mountain Valley has committed to monitor potential outbreaks of invasive species for up to two growing seasons post-construction. During this time, invasive species identified will be treated with approved herbicides as agreed-to with landowners or agencies, or mowed depending on the species and its ability to re-sprout.

In any recently cleared area, most invasive species are likely to emerge and be identifiable within two years. For example, most garlic mustard (*Alliaria petiolata*) seeds germinate during the first two years after they are produced, and may be successfully

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

controlled if sprouted seedlings are eliminated prior to the adult seed-bearing stage (Munger 2001). Likewise, Japanese barberry (*Berberis thunbergii*) seeds will not continue to remain viable in the soil if the entire plants are successfully removed prior to seed-bearing stage within the first two years (D'Appollonio 2006).

Invasive species disperse in a variety of ways including via wind, wildlife, and gravity. Birds such as the American robin (*Turdus migratorius*) and invasive European starling (*Sturnus vulgaris*) eat the berries of honeysuckle (*Lonicera mackii*, *Lonicera tatarica*), Asiatic bittersweet (*Celastrus orbiculatus*), autumn olive (*Elaeagnus umbellata*), and multiflora rose (*Rosa multiflora*), and have been shown to disperse seeds between 250 m and 1 km and increase the likelihood of invasive species colonization (Bartuszevige and Gorchov 2006, Lafleur 2007, Watling and Orrock 2010). Additionally, white-tailed deer (*Odocoileus virginianus*) are the primary dispersers of garlic mustard (Kalisz et al 2014) and will also be present regardless of Project activities. Deer also disperse other highly invasive species, such as Amur honeysuckle, multiflora rose, autumn olive and Johnson grass (*Sorghum halepense*) (Myers et al 2004, Williams and Ward 2006), and can do so up to 7.9 km from the original plant (Guiden et al 2015). Any invasive species that emerge via these various natural mechanisms after two years are beyond Mountain Valley's control and occur regardless of project construction and operations.

Literature Cited

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- D'Appollonio, J. 2006. Regeneration strategies of Japanese barberry (*Berberis thunbergii* DC.) in coastal forests of Maine. Master's thesis, University of Maine, Orono, Maine.
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- Lafleur, N. E., M. A. Rubega, and C. S. Elphick. 2007. Invasive fruits, novel foods, and choice: an investigation of European starling and American robin frugivory. *The Wilson Journal of Ornithology* 119:429-438.

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

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- Myers, J. A., M. Vellend, S. Gardescu, and P. L. Marks. 2004. Seed dispersal by white-tailed deer: implications for long-distance dispersal, invasion, and migration of plants in eastern North America. *Oecologia* 139:35-44.
- USFS. 2012. Non-native invasive species best management practices: guidance for the U. S. forest service eastern region. U. S. Department of Agriculture, Forest Service, Eastern Region, Milwaukee, Wisconsin.
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- Williams, S. C. and J. S. Ward. 2006. Exotic seed dispersal by white-tailed deer in southern Connecticut. *Natural Areas Journal* 26:383-390.

Respondent: Ricky Myers
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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Wildlife

1. Mountain Valley's *Field Surveys for Bald and Golden Eagles Along the Proposed Mountain Valley Pipeline in... Virginia*, dated June 13, 2016, noted that additional surveys would be conducted during the winter of 2016/2017. Attachment DR4 RTE did not contain reports for said surveys. Provide the results of these surveys.

Response:

Mountain Valley completed an aerial survey for bald eagle nests on February 27, 2017 along the proposed route in Greenbrier, Fayette, Summers, and Monroe counties in West Virginia, and Giles, Craig, Montgomery, Roanoke, Franklin, and Pittsylvania counties, Virginia. Two passes by the helicopter, one going southbound and one returning northbound, were completed during this effort. Two biologists, one on each side of the helicopter, continuously scanned the surrounding landscape for presence of eagles and anything resembling an eagle nest. If biologists glimpsed a questionable bird or nest within a tree, the pilot was instructed to veer off course in order to provide biologists with a closer inspection.

Eagle nests were not observed during the nearly 6.5-hour aerial survey within Mountain Valley's survey corridor. Eagles were observed but outside of the survey corridor. Two bald eagles (one mature and one juvenile) were perched in a snag adjacent to a cattle pasture, approximately 600 feet southeast of the pipeline centerline and 1.5 miles west of the Meadow River in West Virginia. A separate pair of juvenile bald eagles (one perched and one in flight) were observed approximately 180 feet west of the pipeline centerline and 0.5 mile south of Indian Creek in West Virginia.

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**Mountain Valley Pipeline, LLC
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Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Threatened and Endangered and Special Status Species

1. Mountain Valley's Biological Evaluation indicates the MVP would have limited impacts on rock skullcap (*Scutellaria saxatilis*), stating "only" an approximate 0.78 hectare area of the local population of the plant would fall inside the construction right-of-way; however, 0.78 hectare is over half of the total 1.45 hectares that contain the plant. Provide correspondence with the FS that concurs with the determination of minimal impacts on this species.

Response:

Rock skullcap (*Scutellaria saxatilis*) is a Forest Service Sensitive Species and is not listed by the U.S. Fish and Wildlife Service, Virginia Department of Conservation and Recreation, or the West Virginia Division of Natural Resources. Therefore, Mountain Valley only conducted surveys for rock skullcap within the Jefferson National Forest (JNF). During these surveys a population of rock skullcap was identified which covered approximately 3.58 acres. Mountain Valley has committed to reducing the width of the construction right-of-way within this area to 75 feet which will reduce the area of impact to approximately 1.94 acres. Additionally, Mountain Valley has committed to collecting seeds from identified rock skullcap individuals for planting in locations identified by the U.S. Forest Service upon completion of construction activities.

The 3.58 acres of rock skullcap discussed above are not the only areas that contain the plant, or the only suitable habitat for the plant, within the JNF. Rock skullcap prefers rich deciduous woods, hillsides, and moist cliffs primarily in the mountains. This species was identified along alternative pipeline routes within JNF; therefore, habitat does not appear to be a limiting factor on JNF. Potential impacts to the rock skullcap within JNF and mitigation is addressed in the Biological Evaluation. Mountain Valley is currently awaiting comments from the U.S. Forest Service on the Biological Evaluation.

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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Threatened and Endangered and Special Status Species

2. Attachment DR4 General 3c stated that bog turtle surveys are completed; however, the Bog Turtle Survey Report submitted in November 2016 noted that there are still outstanding surveys needed for areas where access has not been granted. The same discrepancy appears in Attachment DR4 General 3b2. Rectify this discrepancy and/or provide an estimate of when the additional surveys will be conducted and results submitted to the FERC and applicable resource agencies.

Response:

Due to lack of survey access, additional habitat assessments for the bog turtle (*Clemmys muhlenbergii*) remain to be completed on one parcel (approximately 21.95 acres) in Roanoke County, Virginia. Mountain Valley will survey this parcel when survey access is available and will prepare and submit additional information upon completion of the remaining habitat assessments. No suitable habitat has been identified to date; however, should it be present on this parcel, Phase II surveys will be conducted following federal and state survey guidelines.

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Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Threatened and Endangered and Special Status Species

3. Both tri-colored and little brown bats were identified in the project area and captured during mist net surveys. Describe the measures Mountain Valley would follow to determine whether roost trees for these species are present in the construction right-of-way, prior to construction.

Response:

Little brown bats (*Myotis lucifugus*) and tri-colored bats (*Perimyotis subflavus*) are state-endangered within Virginia. According to the VDGIF's online Little Brown and Tri-colored Bat Winter Habitat and Roosts application, the MVP Project does not intersect any known or occupied roost trees for either species.

As suggested in VDGIF's *Guidance Document on Best Management Practices for Conservation of Little Brown Bats and Tri-colored Bats*, Mountain Valley will not clear timber from June 1 to July 31 in order to avoid impacts to maternity colonies and non-volant juveniles. As stated by VDGIF, if these circumstances and conditions are followed, little to no take of little brown or tri-colored bats is anticipated due to tree removal.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: March 30, 2017

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Threatened and Endangered and Special Status Species

4. Provide correspondence from applicable state agencies concurring with Mountain Valley's proposed approach to avoiding impacts on loggerhead shrikes (i.e., clearing all potential nesting vegetation within the construction right-of-way prior to the beginning of the nesting season).

Response:

There is not currently any correspondence concurring with Mountain Valley's proposed approach to mitigate for impact on loggerhead shrike habitat. An updated Migratory Bird Conservation Plan (which is currently being revised, see the response to General, Question 1b) provides an updated proposed approach following guidance from the Virginia Department of Game and Inland Fisheries (VDGIF). However, guidance from the VDGIF suggests that the removal of suitable nesting substrate (trees and shrubs) outside of the nesting season (before April 1 or after July 31) is the recommended approach. If clearing must occur during the nesting season, then the VDGIF suggests conducting surveys to determine whether or not loggerhead shrikes are occupying habitat within the Project's right-of-way prior to any clearing of potential nesting vegetation.

Although not specifically requested in the question, VDGIF has agreed that surveys for the Ellet Valley millipede are not warranted at this time. A copy of the email from VDGIF is included as Attachment DR5 RTE 4.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: March 30, 2017

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Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Threatened and Endangered and Special Status Species

5. Attachment DR4 General 3b3 stated that the Management Indicator Species (MIS) wild trout and peaks of otter salamander were not observed during survey efforts within the JNF. However, the context of the statements indicates that surveys were not conducted specifically for MIS; rather the presence/absence of MIS is based on supplemental field notes of biologists conducting other surveys within the JNF. Provide support for the statement that these two MIS would not be impacted by the MVP, and justify why specific surveys for the species should not be conducted.

Response:

The Peaks of Otter salamander (*Plethodon hubrichti*) is a Forest Service Sensitive Species as well as a Management Indicator Species. It is currently under review by the U.S. Fish and Wildlife Service (FWS); however, it is not federally or state listed at this time. According to the FWS and Virginia Department of Game and Inland Fisheries (VDGIF), it is currently known or believed to occur in Bedford, Botetourt, and Rockbridge counties, Virginia. The Project Area is not within any of these counties. Additionally, the U.S. Forest Service (USFS) lists the range for this species on or near the Jefferson National Forest (JNF) as “Peaks of Otter, Apple Orchard Mountain”. The closest Project crossing of JNF occurs approximately 30 miles southwest of these areas. As such, this species was designated an OAR Code 1 (Project located out of known species range) in the Biological Evaluation.

Wild trout is a management indicator species; however, unlike the Peaks of Otter salamander, it is not a Forest Service Sensitive Species. There are no Project crossings of designated wild trout streams within the JNF according to the VDGIF Wildlife Environmental Review Map Service (WERMS); however, results from the Hydrologic Analysis of Sedimentation performed within the vicinity of the JNF suggest that sediment loads in excess of 10 percent could occur within two streams designated as Trout Streams by the WERMS dataset: an Unknown Tributary to Stony Creek within the New River drainage, and Mill Creek within the Roanoke drainage. Mill Creek, however, is unlikely a wild trout stream given that only brown trout, a non-native species, are known to occur within the system. For all wild trout stream crossings, in-stream construction restriction from October 1 – March 31 will be in place, and for coldwater stream crossings, there will be in-stream construction restriction from March 1 – June 30 in Virginia. Additionally, Mountain Valley has committed to fish relocations at all Project stream crossings in Virginia.

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

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Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Threatened and Endangered and Special Status Species

6. Mountain Valley's response to Threatened and Endangered and Special Status Species No. 5 regarding the effects of the MVP on the candy darter noted that the species may be present in waterbodies that would be crossed in West Virginia, but focuses primarily on impacts in the state of Virginia. Provide more data about the presence of the candy darter in West Virginia streams crossed by the MVP pipeline, and document correspondence with West Virginia state resource agencies regarding the MVP's impacts on the species.

Response:

The Project crosses the known range of candy darter (*Etheostoma osburni*) in West Virginia and Virginia. Specific, locality records of candy darter within West Virginia are limited, but general distribution records of candy darter obtained from Stauffer et al. (1995) and Welsh et al. (2006) indicate the species is known from Fayette, Greenbrier, Nicholas, Pocahontas, Mercer, Summers, Monroe, and Webster counties. Within these counties, the species is known from the Greenbrier, Bluestone, and Gauley river systems as well as Indian Creek, a direct tributary to the New River.

Within the FishMap spatial database maintained by the North American Native Fishes Association (available at <http://fishmap.org/species/Candy-Darter.html>; accessed 03/22/2017) 15 records of candy darters are publically available (see table 1 below); however, the species occurs within other waterbodies as well. According to the distributional records available in Stauffer et al. (1995), the candy darter is most likely to occur in large creek and rivers, and Mountain Valley proposes to cross waterbodies within the species potential range in West Virginia (i.e., Middle New, Greenbrier, and Gauley subbasins). Although the presence of candy darter at specific stream crossings is not available, the species is likely to occur in the vicinity of the crossings of Indian Creek, Greenbrier River, and Gauley River and may also occur in associated tributaries.

Mountain Valley proposes to cross all streams via dry-ditch construction methods to minimize potential downstream sedimentation impacts. Downstream populations of candy darter may potentially experience minimal and temporary effects in the form of increased sedimentation as a result of both upland and instream construction activities; however, the implementation of erosion and sediment control measures is expected to minimize such impacts.

West Virginia Division of Natural Resources (WVDNR) has not requested surveys or fish removals for candy darter along the Project.

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Table 1					
Known Records of the Candy Darter Within the Project Vicinity					
Institution Code	Catalog Number	Individual Count <u>a/</u>	State	County	Locality
UMMZ	92409	1	West Virginia	Pocahontas	Stony Creek, Tributary to Greenbrier River
UMMZ	92410	5	West Virginia	Pocahontas	Stony Creek, Tributary to Greenbrier River
UMMZ	109095	1	West Virginia	Pocahontas	Greenbrier River, near Bartow, WV
UMMZ	118758	1	West Virginia	Mercer	Camp Creek, Tributary of Bluestone River, ca. 3 mi above mouth, Kanawha River system
UMMZ	118800	2	West Virginia	Monroe	Indian Creek, at Greenville, Tributary of New River
UMMZ	118857	1	West Virginia	Greenbrier-Monroe	Second Creek, at mill, 5 miles from mouth at county line, Tributary to Greenbrier River
UMMZ	118940	1	West Virginia	Pocahontas	Williams River, Tributary to Gauley River
UMMZ	119022	1	West Virginia	Nicholas	Cherry River, North Fork above Richmond, Tributary to Gauley River
UMMZ	119171	1	West Virginia	Monroe	Turkey Creek, Tributary to Indian Creek above Willow Bend; New River system
UMMZ	165712	9	West Virginia	Webster	Williams River at mouth of Three Forks; Tributary to Gauley River
INHS	27104	X	West Virginia	Pocahontas	Greenbrier River, Bartow, WV
INHS	37884	X	West Virginia	Pocahontas	East Fork Greenbrier River, 1 mi E Durbin on U.S. Rt. 250/S.R. 92
INHS	39016	X	West Virginia	Pocahontas	East Fork Greenbrier River, 1 mi E Durbin on U.S. Rt. 250/S.R. 92
UAIC	11832.13	X	West Virginia	Pocahontas	East Fork Greenbrier River at Co. Rd. 28/19 (Thornwood Road), ca. 1.5 mi NE of Bartow, WV
UF	175726	X	West Virginia	Pocahontas	East Fork Greenbrier River, Thornwood Road at Bridge about 1.8 km northeast of Bartow, WV

Source: <http://fishmap.org/species/Candy-Darter.html> (accessed 03/22/2017)
a/ an "X" indicates the species is present but no individual count is available.

Literature Cited

Stauffer, J. R., Jr., J. M. Boltz, and L. R. White. 1995. The Fishes of West Virginia. Reprinted from the Proceedings of the Academy of Natural Sciences, Philadelphia, Pennsylvania.

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Welsh, S. A., D. A. Cincotta, and J. F. Switzer. 2006. Fishes of Bluestone National Scenic River. Natural Resources Technical Report 2006/049. U.S. Department of Interior, National Park Service, Northeast Region, Philadelphia, Pennsylvania. 136 pp.

Respondent: Ricky Myers
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Date: March 30, 2017

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Threatened and Endangered and Special Status Species

7. In response to a comment, indicate whether the MVP would affect the big-eyed jumprock, riverweed darter, or Roanoke darter. Outline measures that Mountain Valley would implement to avoid, minimize, or mitigate impacts on those species. File copies of communications with applicable resource agencies regarding impacts on those species, not previously filed in the docket.

Response:

The referenced species are neither federally listed nor state-listed species. Mountain Valley will adhere to VDGIF's time-of-year crossing restrictions and conduct fish removals at all perennial stream crossings in Virginia immediately prior to in-stream dewatering. Therefore, fishes (including the referenced species) will be removed from the in-stream construction footprint, limiting potential impacts to fishes.

Because these species are not listed, correspondence with state resource agencies regarding these species has not occurred.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: March 30, 2017

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Cultural Resources

1. File copies of the respective reviews by State Historic Preservation Offices (SHPO) of the following cultural resources reports:
 - a. Espino et al. June 2016, *Mountain Valley Pipeline Project, Phase II Archaeological Investigations, Sites 46DO94, 46HS100, 46HS101, 46HS104, 46HS109, 46HS125, and 46LE77, Doddridge, Harrison, and Lewis Counties, West Virginia* (Tetra Tech, Pittsburgh) filed June 16, 2016;
 - b. Clement et al. February 2017. *Addendum 2 to Volume IV, Phase II Archaeological Investigations at Sites 46SU717, 46SU078, 46SU724, 46ME285, 46ME307, 46ME281, 46ME283, and 46ME284, Summers and Monroe Counties, West Virginia* (Search, Boston) filed February 2, 2017;
 - c. Clement et al. February 2017. *Mountain Valley Project, Phase II Investigations, Braxton County, West Virginia* (Search, Boston) filed February 17, 2017;
 - d. Barse et al. February 2017. *Mountain Valley Pipeline Project, Phase II Archaeological Investigations, Sites 46NI846, 46NI847, 46GB493, 46GB498, 46GB499, 46GB500, 46GB503, 46GB504, 46GB533, and 46NI827, Nicholas and Greenbrier Counties, West Virginia* (Tetra Tech, Pittsburgh) filed February 17, 2017;
 - e. Dye, February 2017. *Criteria of Effects Report, Mountain Valley Pipeline Project, Wetzel, Harrison, Doddridge, Lewis, Braxton, Webster, Nicholas, Greenbrier, Fayette, Summers, and Monroe Counties, West Virginia* (Tetra Tech, Pittsburgh) filed February 17, 2017;
 - f. Reeve et al. November 2016. *Mountain Valley Pipeline Project, Phase IB Archaeological Survey Report Addendum 2, and Phase II Archaeological Evaluation, Site 44PY0442, Pittsylvania County, Virginia* (Tetra Tech, Parsippany, NJ) filed December 22, 2016;
 - g. Reeve et al. December 2016. *Mountain Valley Pipeline Project, Phase IB Archaeological Survey Report Addendum 1, and Phase II Archaeological Evaluations, Sites 44CG0253, 44CG0254, 44GC0255, Craig County, Virginia* (Tetra Tech, Parsippany, NJ) filed December 22, 2016;

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

- h. Reeve et al. December 2016. *Mountain Valley Pipeline Project, Phase IB Archaeological Survey Report Addendum 1, Franklin County, Virginia* (Tetra Tech, Parsippany, NJ) filed December 22, 2016;
- i. Reeve et al. January 2017. *Mountain Valley Pipeline Project, Phase IB Archaeological Survey Report, Addendum 1, Roanoke and Montgomery Counties, Virginia* (Tetra Tech, Parsippany, NJ) filed February 17, 2017;
- j. Reeve et al. January 2017. *Mountain Valley Pipeline Project, Phase IB Addendum 1 Archaeological Survey, and Phase II Evaluations of Sites 44GS0227, 44GS0229, 44GS0230, 44GS0231, and 44GS0236, Giles County, Virginia* (Tetra Tech, Parsippany, NJ) filed February 17, 2017;
- k. Reeve et al. February 2017. *Mountain Valley Pipeline Project, Phase II Archaeological Evaluations of 18 Sites, Franklin County, Virginia* (Tetra Tech, Parsippany, NJ) filed February 17, 2017; and
- l. Jacoby and Marshall, February 2017. *Mountain Valley Project, Avoidance Plans for 19 Archaeological Sites and Rock Overhands, Craig, Franklin, Giles, Montgomery, and Pittsylvania Counties, Virginia* (Tetra Tech, Parsippany, NJ) filed February 17, 2017.

Response:

Table 1 provides the dates of SHPO comments received and the dates that SHPO comments were filed with FERC. The letter for row 2 is included as Attachment DR5 Cultural 1a.

Although not specifically requested in the question, Mountain Valley received comments from the Virginia SHPO on March 22, 2017 regarding the *Mountain Valley Pipeline Letter Report, Results of Criteria of Effects Assessment Tasks 2 and 3-Viewshed and Viewpoint Analysis*. The comments are listed in Table 1 as item (13) and filed as Attachment DR5 Cultural 1b.

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Table 1 SHPO Comments Received and Filed with FERC		
Report Title	SHPO Comments Received	SHPO Comments Filed with FERC
1. Espino et al. June 2016, Mountain Valley Pipeline Project, Phase II Archaeological Investigations, Sites 46DO94, 46HS100, 46HS101, 46HS104, 46HS109, 46HS125, and 46LE77, Doddridge, Harrison, and Lewis Counties, West Virginia (Tetra Tech, Pittsburgh) filed June 16, 2016	7/14/2016	7/18/2016
2. Clement et al. February 2017. Addendum 2 to Volume IV, Phase II Archaeological Investigations at Sites 46SU717, 46SU078, 46SU724, 46ME285, 46ME307, 46ME281, 46ME283, and 46ME284, Summers and Monroe Counties, West Virginia (Search, Boston) filed February 2, 2017	3/13/2017	3/30/2017
3. Clement et al. February 2017. Mountain Valley Project, Phase II Investigations, Braxton County, West Virginia (Search, Boston) filed February 17, 2017	No Comments to date	Comments will be filed when received
4. Barse et al. February 2017. Mountain Valley Pipeline Project, Phase II Archaeological Investigations, Sites 46NI846, 46NI847, 46GB493, 46GB498, 46GB499, 46GB500, 46GB503, 46GB504, 46GB533, and 46NI827, Nicholas and Greenbrier Counties, West Virginia (Tetra Tech, Pittsburgh) filed February 17, 2017	No Comments to date	Comments will be filed when received
5. Dye, February 2017. Criteria of Effects Report, Mountain Valley Pipeline Project, Wetzel, Harrison, Doddridge, Lewis, Braxton, Webster, Nicholas, Greenbrier, Fayette, Summers, and Monroe Counties, West Virginia (Tetra Tech, Pittsburgh) filed February 17, 2017	No Comments to date	Comments will be filed when received
6. Reeve et al. November 2016. Mountain Valley Pipeline Project, Phase IB Archaeological Survey Report Addendum 2, and Phase II Archaeological Evaluation, Site 44PY0442, Pittsylvania County, Virginia (Tetra Tech, Parsippany, NJ) filed December 22, 2016	No Comments to date	Comments will be filed when received
7. Reeve et al. December 2016. Mountain Valley Pipeline Project, Phase IB Archaeological Survey Report Addendum 1, and Phase II Archaeological Evaluations, Sites 44CG0253, 44CG0254, 44GC0255, Craig County, Virginia (Tetra Tech, Parsippany, NJ) filed December 22, 2016	No Comments to date	Comments will be filed when received
8. Reeve et al. December 2016. Mountain Valley Pipeline Project, Phase IB Archaeological Survey Report Addendum 1, Franklin County, Virginia (Tetra Tech, Parsippany, NJ) filed December 22, 2016	No Comments to date	Comments will be filed when received
9. Reeve et al. January 2017. Mountain Valley Pipeline Project, Phase IB Archaeological Survey Report, Addendum 1, Roanoke and Montgomery Counties, Virginia (Tetra Tech, Parsippany, NJ) filed February 17, 2017	No Comments to date	Comments will be filed when received
10. Reeve et al. January 2017. Mountain Valley Pipeline Project, Phase IB Addendum 1 Archaeological Survey, and Phase II Evaluations of Sites 44GS0227, 44GS0229, 44GS0230, 44GS0231, and 44GS0236, Giles County, Virginia (Tetra Tech, Parsippany, NJ) filed February 17, 2017	No Comments to date	Comments will be filed when received
11. Reeve et al. February 2017. Mountain Valley Pipeline Project, Phase II Archaeological Evaluations of 18 Sites, Franklin County, Virginia (Tetra Tech, Parsippany, NJ) filed February 17, 2017	No Comments to date	Comments will be filed when received
12. Jacoby and Marshall, February 2017. Mountain Valley Project, Avoidance Plans for 19 Archaeological Sites and Rock Overhands, Craig, Franklin, Giles, Montgomery, and Pittsylvania Counties, Virginia (Tetra Tech, Parsippany, NJ) filed February 17, 2017.	No Comments to date	Comments will be filed when received

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Table 1 SHPO Comments Received and Filed with FERC		
Report Title	SHPO Comments Received	SHPO Comments Filed with FERC
13. Mountain Valley Pipeline Letter Report, Results of Criteria of Effects Assessment Tasks 2 and 3-Viewshed and Viewpoint Analysis	3/22/2017	3/30/2017

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: March 30, 2017

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Cultural Resources

2. Representatives of the COE have informed FERC staff that all of the COE Districts crossed by the MVP and EEP do not intend to issue their Clean Water Act Section 404 permits until after the FERC has documented the completion of the process to comply with Section 106 of the National Historic Preservation Act. To aid in that determination, provide:
 - a. estimates of the completion of cultural resources inventories at all COE-jurisdictional wetlands and waterbody crossings;
 - b. identification of any COE-jurisdictional wetlands and waterbody crossings, by MP, where cultural resources surveys have not been done as of March 2017, and a schedule for when those surveys would be completed and the results filed with the FERC; and
 - c. a list of all archaeological sites and historic architectural sites identified at COE-jurisdictional wetlands and waterbody crossings, by MP and wetland/waterbody name or identification number, site name and number, survey report reference, and National Register of Historic Places evaluation.

Response:

Attachments DR5 Cultural 2a (Virginia) and 2b (West Virginia) list archaeological sites and historic architectural sites identified at USACE-jurisdictional wetlands and waterbody crossings, by MP and wetland/waterbody name or identification number, site name and number, survey report reference, National Register of Historic Places evaluation, and the anticipated date of completion of cultural resources inventories. Mountain Valley will file the results with FERC as soon as practicable after surveys are completed.

Please note that in West Virginia survey access is currently denied by landowners and the surveys will be completed on those tracts following the necessary legal process after FERC issues the certificate. Mountain Valley will endeavor to gain survey access and complete the surveys as soon as possible following issuance of the certificate.

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

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Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Cultural Resources

3. Cultural resources Table 3e, filed on February 17, 2017, is missing a number of sites that were recorded by Mountain Valley’s cultural resources contractors. This includes sites 46BX111 in Braxton County, West Virginia (documented in Espino et al., October 2015); sites 46WB406, 412, and 440 in Webster County, West Virginia (documented in (Espino et al., October 2015; Freedman et al., November 2016); sites 46NI813, 818, 819, and 849 in Nicholas County, West Virginia (documented in Espino et al, December 2015; Espino et al. January 2017); 44PY431 432, and 433 (documented in Reeve et al. November 2016), and sites 44PY438 and 439 (documented in Reeve et al. August 2016) in Pittsylvania County, Virginia. Please explain why those sites were missing.

Response:

Attachment DR4 Cultural Resources 3e filed on February 17, 2017 listed sites within the Project’s Direct Area of Potential Effect. Sites 46BX111 in Braxton County, West Virginia; 46WB406, 412, and 440 in Webster County, West Virginia; 46NI813, 818, 819, and 849 in Nicholas County, West Virginia; 44PY431 432, 433, 438 and 439 in Pittsylvania County, Virginia are no longer in the Direct Area of Potential Effect or avoided by modifications to the Projects Limits of Disturbance (see Table 3below). The SHPO Comments for *Mountain Valley Pipeline Project, Phase IB Archaeological Survey Report, Addendum I, Pittsylvania County, VA (August 2016)* are included as Attachment DR5 Cultural 3.

Table 3					
SHPO ID	Distance from Project Limits of Disturbance (feet)	Report	SHPO Comment Date	National Register Status	Date SHPO Comments Filed with FERC
46BX111	40	Avoidance Plans Volume I-IV (July 2016)	8/22/2016	Unevaluated	3/30/2017
46WB406	392	Cultural Resources Survey Volume II Braxton and Webster Counties, West Virginia (October 2015)	11/16/2015	Not Eligible	1/19/2016
46WB412	25	Avoidance Plans Volume I-IV (July 2016)	8/22/2016	Unevaluated	3/30/2017
46WB440	2,000	Site 46WB440 was identified in a Laydown Yard that was eliminated from the project by design changes	N/A	Unevaluated	N/A
46NI813	300	Avoidance Plans Volume I-IV (July 2016)	8/22/2016	Unevaluated	3/30/2017

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Table 3					
SHPO ID	Distance from Project Limits of Disturbance (feet)	Report	SHPO Comment Date	National Register Status	Date SHPO Comments Filed with FERC
46NI818	200	Avoidance Plans Volume I-IV (July 2016)	8/22/2016	Unevaluated	3/30/2017
46NI819	365	Avoidance Plans Volume I-IV (July 2016)	8/22/2016	Unevaluated	3/30/2017
46NI849	1,075	Site 46NI849 was identified along an access road that was eliminated from the project by design changes	N/A	Unevaluated	N/A
44PY431	1,543	Mountain Valley Pipeline Project, Phase IB Archaeological Survey Addendum 2 and Phase II Evaluation of site 44PY0442, Pittsylvania County, VA (December 2016)	SHPO Comments Pending	Recommended not eligible to NRHP by Tetra Tech	Pending
44PY432	878	Mountain Valley Pipeline Project, Phase IB Archaeological Survey Addendum 2 and Phase II Evaluation of site 44PY0442, Pittsylvania County, VA (December 2016)	SHPO Comments Pending	Recommended not eligible to NRHP by Tetra Tech	Pending
44PY433	1,537	Mountain Valley Pipeline Project, Phase IB Archaeological Survey Addendum 2 and Phase II Evaluation of site 44PY0442, Pittsylvania County, VA (December 2016)	SHPO Comments Pending	Recommended not eligible to NRHP by Tetra Tech	Pending
44PY438	944	Mountain Valley Pipeline Project, Phase IB Archaeological Survey Report, Addendum I, Pittsylvania County, VA (August 2016)	2/7/2017	Not Eligible	3/30/2017
44PY439	590	Mountain Valley Pipeline Project, Phase IB Archaeological Survey Report, Addendum I, Pittsylvania County, VA (August 2016)	2/7/2017	Unevaluated Avoided	3/30/2007

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Respondent: Megan Neylon
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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Cultural Resources

4. Document if archaeological testing was ever conducted at site 44WB440 in Webster County, West Virginia, as recommended in Freedman et al. (November 2016). If not explain why. If the site was avoided, document in what report the avoidance plan was filed with the FERC.

Response:

Site 44WB440 was identified during Phase I survey (Freedman et al. November 2016) of proposed laydown yard (MVP-LY-023) that lies approximately 2,000 feet west of the Project centerline. Due to cultural concerns, Mountain Valley expects to eliminate this yard from the Project at a later time. Due to the lack of disturbance anticipated to site 44WB440, it remains unevaluated for National Register Eligibility.

Respondent: Megan Neylon
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Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Cultural Resources

5. Provide an assessment if any of the Historic Districts crossed by the MVP pipeline route also qualify as rural historic landscapes or traditional cultural properties as defined in McClland, L., et al. (1999) “Guidelines for Evaluating and Documenting Rural Historic Landscapes, *National Register Bulletin* 30; and Parker, P. and T. King (1998) “Traditional Cultural Properties: Guidelines for Evaluation,” *National Register Bulletin* 38. The FERC staff questions whether Mountain Valley’s “Methods for Historic Architecture Criteria of Effects Assessment for Virginia,” filed February 17, 2017, allows us to assess impacts on the rural historic cultural landscapes that may be associated with Historic Districts. Address the contradictions noted in the methods, that while Tasks 1 and 2 found no effect or no adverse effects on individual contributing resources in the Historic Districts, Task 3 made a finding of “high potential” for all the Historic Districts as a whole, and recommended that undefined Task 4 studies be conducted. Provide an objective analysis that uses measures that can be quantified, such as distance to construction workspaces, vegetation cover, and existing infrastructure, that can be related to the potential for the MVP to effect the characteristics that qualify each Historic District for the National Register of Historic Places or diminish their integrity, in accordance with 36 CFR Part 800.5. Document that Mountain Valley’s analysis was reviewed by the Virginia SHPO.

Response:

Mountain Valley is preparing a Criteria of Effects Assessment Report for submittal to the Virginia SHPO and the FERC that will combine Tasks 1, 2, and 3 letter reports and the results of Task 4 into one comprehensive report. As part of this report, Mountain Valley will assess whether any of the Historic Districts crossed by the Project qualify as rural historic landscapes or traditional cultural properties as defined in National Register Bulletins 30 and 38. Also as part of this report, Mountain Valley will revise and address possible contradictions within the “Methods for Historic Architecture Criteria of Effects Assessment for Virginia,” filed February 1, 2017. The methods will identify objective measures for potential impacts that can be quantified and related to the characteristics that qualify each Historic District for the National Register of Historic Places or that diminish their integrity in accordance with 36 CFR Part 800.5. Mountain Valley expects to submit the comprehensive Criteria of Effects Assessment Report to the Virginia SHPO and FERC in the second half of April 2017. Mountain Valley will file review comments from the Virginia SHPO when they are received.

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: March 30, 2017

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Cultural Resources

6. For the following historic resources within the Greater Newport Rural Historic District, provide distance (in feet) to pipeline centerline, and impact assessments (Tasks 1 to 4):
 - a. 35-412-8;
 - b. 35-412-9;
 - c. 35-412-13;
 - d. 35-412-21;
 - e. 35-412-31;
 - f. 35-412-32;
 - g. 35-412-33;
 - h. 35-412-38;
 - i. 35-412-39;
 - j. 35-412-40;
 - k. 35-412-41
 - l. 35-412-42;
 - m. 35-412-43;
 - n. 35-412-44;
 - o. 35-412-45;
 - p. 35-415-47;
 - q. 35-412-48;
 - r. 35-412-54;

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

- s. 35-412-56;
- t. 35-412-60;
- u. 35-412-64;
- v. 35-412-69;
- w. 35-412-71;
- x. 35-412-72;
- y. 35-412-73;
- z. 35-412-74;
- aa. 35-412-76;
- bb. 35-412-77;
- cc. 35-412-78;
- dd. 35-412-79;
- ee. 35-412-83;
- ff. 35-412-84;
- gg. 35-412-85;
- hh. 35-412-86;
- ii. 35-412-87;
- jj. 35-412-88;
- kk. 35-412-89;
- ll. 35-412-90;
- mm. 35-412-95;
- nn. 35-412-107;

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

- oo. 35-412-238;
- pp. 35-412-240;
- qq. 35-412-243;
- rr. 35-412-248;
- ss. 35-412-249;
- tt. 35-412-250;
- uu. 35-412-251;
- vv. 35-412-253;
- ww. 35-412-273;
- xx. 35-412-275;
- yy. 35-412-409;
- zz. 35-412-410;
- aaa. 35-412-416; and
- bbb. 35-5001.

Response:

The distance (in feet) to pipeline centerline and impact assessments for the above-referenced historic resources within the Greater Newport Rural Historic District are provided in Attachment DR5 Cultural 6.

NRHP-eligibility determinations for all resources in the attachment, with the exception of 035-5001, were excerpted from the National Register Nomination for the Greater Newport Rural Historic District (GNRHD). Resource 035-5001 was identified within the direct APE during Mountain Valley's Phase I archaeological survey and then included in the Phase I historic architecture report by Mountain Valley. Resource 035-5001 was recommended not NRHP-eligible (neither individually nor as a contributing resource to the GNRHD) in *Addendum to the Phase I Reconnaissance Architectural Survey for the Mountain Valley Pipeline, Craig and Giles Counties, Virginia: Supplemental*

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Information. VDHR concurred with this recommendation in a letter dated August 4, 2016.

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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Cultural Resources

7. For the following historic resources within the North Fork Valley Rural Historic District, provide an impact assessment (Tasks 1 to 4):
- 60-574-49;
 - 60-574-52;
 - 60-574-53; and
 - 60-574-54.

Response:

A summary assessment for the above-referenced resources is provided in Table 7.1 (below). An effects assessment was not conducted on the following resources because the National Register Nomination for the North Fork Valley Rural Historic District categorizes them as non-contributing resources: 060-0574-0049; 060-0574-0053; and 060-0574-0054.

The National Register Nomination lists 060-0574-0052 as a contributing resource to the North Fork Valley Rural Historic District. As such, this resource underwent Task 1 level assessment as part of the Criteria of Effects evaluation. As a result of the Task 1 Assessment, 060-0574-0052 was eliminated from further effects analysis due to its distance from the Project. As a result of Mountain Valley Project modifications, this resource is no longer located within the Project’s Indirect APE.

Historic Resources-Table 7.1						
SHPO ID	Name	Location	NRHP Status	Property Included in Effects Assessment	Explanation	Recommendation for Further Work
060-0574-0049	House	Catawba Road (Route 785)	Non-Contributing	No	Non-Contributing Resource	None
060-0574-0052	House	Catawba Road (Route 785)	Contributing	Yes	Individually Analyzed in Effects Assessment- Eliminated in Task 1- Outside Direct and Indirect APES	None
060-0574-0053	House	Route 628	Non-Contributing	No	Non-Contributing Resource	None

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Historic Resources-Table 7.1						
SHPO ID	Name	Location	NRHP Status	Property Included in Effects Assessment	Explanation	Recommendation for Further Work
060-0574-0054	Barn	Route 628	Non-Contributing	No	Non-Contributing Resource	None

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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Cultural Resources

8. For the following historic resources within the Bent Mountain Rural Historic District, provide an impact assessment (Tasks 1 to 4):

- 80-5677-5; and
- 80-5677-7.

Response:

An effects assessment was not conducted on 080-5677-0005 and 080-5677-0007 because these resources were recommended as non-contributing resources to the Bent Mountain Rural Historic District by Mountain Valley. Information regarding these resources is provided in *Addendum to the Phase I Reconnaissance Architectural Survey for the Mountain Valley Pipeline: Summary Report Pittsylvania, Franklin, Roanoke, Montgomery, Craig, and Giles Counties, Virginia* (March 2017) (see Attachment DR5 Cultural 9). SHPO comments on this report will be filed with FERC when they are received by Mountain Valley.

Cultural Resources-Table 8.1						
SHPO ID	Name	Location	NRHP Status	Property Included in Effects Assessment	Explanation	Recommendation for Further Work
080-5677-0005	barn ruin	10383 Russwood Road, Bent Mountain	Non-contributing	No	Non-Contributing Resource	None
080-5677-0007	ruins	8741 Poor Mountain Road (Route 612), Bent Mountain	Non-contributing	No	Non-Contributing Resource	None

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Phone Number: 724-873-3645
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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Cultural Resources

9. Resolve the following discrepancies for resources within the Bent Mountain Rural Historic District. Reeve et al (January 2017) *Mountain Valley Pipeline Project, Phase IB Archaeological Survey Report, Addendum 1, Roanoke and Montgomery Counties, Virginia* indicates that sites 80-5677-4, 5, 6, and 7 are not eligible, but DR Cultural Resources Attachment Table 3f, filed February 17, 2017, lists them as “may contribute” to the District. The Master List has site 80-5677-6 at 93 feet from centerline, but Table 3f has it at 28 feet.

Response:

Clarification regarding NRHP recommendations and distances for 080-5677-0004, 0005, 0006, and 0007 is provided in Table 9.1 below. In addition to the above-referenced report, supplemental information regarding these resources can be found in *Addendum to the Phase I Reconnaissance Architectural Survey for the Mountain Valley Pipeline: Summary Report Pittsylvania, Franklin, Roanoke, Montgomery, Craig, and Giles Counties, Virginia*, which is included as Attachment DR5 Cultural 9.

Cultural Resources-Table 9.1									
VDHR No.	Resource Name	Location	Date	NRHP Evaluation	Additional Work	Location in APE	Nearest MP	Distance to Centerline (ft.)	Distance to Edge of LOD (ft.)
080-5677-0004	Foundation	10932 Bent Mountain Road (Route 221), Bent Mountain	N/A	Not Individually NRHP-Eligible; Not NRHP-Eligible as contributing resource to Bent Mountain Historic District	None	Direct	246.2	707.6	620.1
080-5677-0005	Barn Ruin	10383 Russwood Road, Bent Mountain	N/A	Not Individually NRHP-Eligible; Not NRHP-Eligible as contributing resource to Bent Mountain Historic District	None	Direct	243.1	25.57	0

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Cultural Resources-Table 9.1									
VDHR No.	Resource Name	Location	Date	NRHP Evaluation	Additional Work	Location in APE	Nearest MP	Distance to Centerline (ft.)	Distance to Edge of LOD (ft.)
080-5677-0006	Cabin	10858 Green Hollow Drive, Bent Mountain	c.1940	Not Individually NRHP-Eligible – Potentially Eligible as contributing resource to Bent Mountain Historic District	Criteria of Effects Assessment (Master List Resource)	Direct	245.4	93.12	5.62
080-5677-0007	Ruins	8741 Poor Mountain Road (Route 612), Bent Mountain	N/A	Not individually NRHP-Eligible; Not NRHP-Eligible as contributing resource to Bent Mountain Historic District	None	Direct	244.2	1016.36	38.47

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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Cultural Resources

10. Identify the cultural resource reports where the following sites listed on tables 3f and 3e (filed February 17, 2017) were recorded: historic sites WZ-155 and 156 in Wetzell County, West Virginia; historic sites HS-899 and 901 in Harrison County, West Virginia; historic sites LE-151, 152, and 154 in Lewis County, West Virginia; historic site 258 in Webster County, West Virginia; historic sites NI-143 and 155, and archaeological sites 46NI829, 830, 831, 832, 833, 834, 835, 836, 837, 838, and 839 in Nicholas County, West Virginia; historic site GB-1818 in Greenbrier County, West Virginia; and site 60-5190 in Montgomery County, Virginia.

Response:

The historic sites WZ-155, 156; HS-899, 901; LE-151, 152, and 154; site 258; and NI-143, and 155 are architectural resources that were reported on using Field IDs. The trinomial designations 46NI829, 830, 831, 832, 833, 834, 835, 836, 837, 838, and 839 are isolated finds that were determined not eligible for National Register listing. Attachment DR5 Cultural 10 provides a correlation between the Field IDs and the SHPO IDs that were assigned post-reporting. Attachment DR5 Cultural 10 also provides a report reference for each resource, the National Register status as determined by the SHPO and the dates SHPO comments were filed with FERC.

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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Cultural Resources

11. File avoidance plans for the following cultural resources (or provide references to previously filed reports that contained those plans), and document SHPO review of the plans:
 - a. Site 46DO112 (Watson Property Cemetery) in Doddridge County, West Virginia;
 - b. Six 46BX114 in Braxton County, West Virginia;
 - c. Sites 46NI846 and 847 in Nicholas County, West Virginia;
 - d. Site 46SU163 in Summers County, West Virginia;
 - e. Site 46GB498 in Giles County, Virginia;
 - f. Sites 60-332, 5193, and 5194 in Montgomery County, Virginia;
 - g. Sites 44RN381, 387, 388, and 80-5690 in Roanoke County, Virginia;
 - h. Sites 46FA551 and 552 in Franklin County, Virginia; and
 - i. Sites 71-5483, 5484, and 5494 in Pittsylvania County, Virginia.

Response:

Table 11 (below) provides references to previously-filed reports that contained avoidance plans for sites, 46BX114, 46NI846, 46NI847, 46SU163, 46GB498, 46FA551 and 46FA552. Site 46DO112 was identified in the indirect APE and was determined not eligible by the SHPO. Please note that Sites 46FA551 and 46FA552 are in Fayette County West Virginia and not Franklin County Virginia. Likewise, site 46GB498 is in Greenbrier County West Virginia, not Giles County Virginia. Comments on avoidance plans pending SHPO approval in Table 11 will be filed with FERC upon receipt.

Figures illustrating the location of historic architectural resources 60-332, 60-5193 and 60-5194 in reference to the Project limits-of-disturbance are provided as Attachment DR5 Cultural 11 (Privileged). Historic architectural resources 60-332, 60-5193 and 60-5194 do not require avoidance plans as they are not within or adjacent to the APE.

The avoidance plans for Virginia archaeological resources 44RN381, 387, and 388 and historic architectural resource 80-5690 in Roanoke County and architectural resources

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

71-5483, 5484, and 5494 in Pittsylvania County are also included in Attachment DR5 Cultural 11 (Privileged). Comments of the Virginia Division of Historic Resources will be filed with FERC when they are received.

Table 11				
SHPO_ID	Report Reference	Avoidance Plans or Location Maps filed with FERC	SHPO Concurrence with Avoidance Plans	SHPO Comments to FERC
46DO112 Watson Cemetery	Cultural Resources Survey, Addendum 1 to Volume I, Wetzel, Harrison, Doddridge, and Lewis Counties (November 2016)	Indirect APE Not eligible	12/7/2016	12/22/2016
46BX114	Phase II Archaeological Investigations Braxton County, West Virginia (February 2017)	2/17/2017 with report	Pending	Pending
46NI846	Phase II Archaeological Investigations Sites 46NI846, 46NI847, 46GB493, 46GB498, 46GB499, 46GB500, 46GB503, 46GB504, 46GB505, 46GB533, 46NI827 (February 2017)	2/17/2017 with report	Pending	Pending
46NI847	Phase II Archaeological Investigations Sites 46NI846, 46NI847, 46GB493, 46GB498, 46GB499, 46GB500, 46GB503, 46GB504, 46GB505, 46GB533, 46NI827 (February 2017)	2/17/2017 with report	Pending	Pending
46SU163	Cultural Resources Survey, Addendum 1 to Volume IV, Summers and Monroe Counties, West Virginia (January 2017)	12/22/2016 with report	1/17/2017	2/17/2017
46GB498	Phase II Archaeological Investigations Sites 46NI846, 46NI847, 46GB493, 46GB498, 46GB499, 46GB500, 46GB503, 46GB504, 46GB505, 46GB533, 46NI827 (February 2017)	2/17/2017 with report	Pending	Pending
46FA551	Cultural Resources Survey, Addendum 1 to Volume III, Nicholas, Greenbrier, and Fayette Counties West Virginia (January 2017)	12/22/2016 with report	2/8/2017	2/17/2017
46FA552	Cultural Resources Survey, Addendum 1 to Volume III, Nicholas, Greenbrier, and Fayette Counties West Virginia (January 2017)	12/22/2016 with report	2/8/2017	2/17/2017
60-332	Resource discussed in <i>Addendum to the Phase I Reconnaissance Architectural Survey for the Mountain Valley Pipeline: Summary Report</i> (March 2017)	3/30/2017	Figure illustrates distance to LOD	N/A
60-5193	Resource discussed in <i>Addendum to the Phase I Reconnaissance Architectural Survey for the Mountain Valley Pipeline: Summary Report</i> (March 2017)	3/30/2017	Figure illustrates distance to LOD	N/A

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Table 11				
SHPO_ID	Report Reference	Avoidance Plans or Location Maps filed with FERC	SHPO Concurrence with Avoidance Plans	SHPO Comments to FERC
60-5194	Resource discussed in <i>Addendum to the Phase I Reconnaissance Architectural Survey for the Mountain Valley Pipeline: Summary Report</i> (March 2017)	3/30/2017	Figure illustrates distance to LOD	N/A
44RN0381	Site discussed in <i>Mountain Valley Pipeline Project, Phase IB Archaeological Survey Report, Addendum I, Roanoke and Montgomery Counties, Virginia</i> (January 2017)	3/30/2017	Pending	Pending
44RN0387	Resource discussed in <i>Mountain Valley Pipeline Project, Phase IB Archaeological Survey Report, Addendum I, Roanoke and Montgomery Counties, Virginia</i> (January 2017)	3/30/2017	Pending	Pending
44RN0388	Resource discussed in <i>Mountain Valley Pipeline Project, Phase IB Archaeological Survey Report, Addendum I, Roanoke and Montgomery Counties, Virginia</i> (January 2017)	3/30/2017	Pending	Pending
80-5690	Resource discussed in <i>Mountain Valley Pipeline Project, Phase IB Archaeological Survey Report, Addendum I, Roanoke and Montgomery Counties, Virginia</i> (January 2017), and <i>Addendum for the Phase I Reconnaissance Architectural Survey for the Mountain Valley Pipeline: Summary Report</i> (March 2017)	3/30/2017	Pending	Pending
71-5483	Resource discussed in <i>Addendum: Phase I Reconnaissance Architectural Survey for the Mountain Valley Pipeline, Pittsylvania and Franklin Counties, Virginia</i> (June 2016)	3/30/2017	Pending	Pending
71-5484	Resource discussed in <i>Phase I Reconnaissance Architectural Survey for the Mountain Valley Pipeline, Pittsylvania and Franklin Counties, Virginia</i> (July 2015)	3/30/2017	Pending	Pending
71-5494	Resource discussed in <i>Phase I Reconnaissance Architectural Survey for the Mountain Valley Pipeline, Pittsylvania and Franklin Counties, Virginia</i> (July 2015)	3/30/2017	Pending	Pending

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Geology

1. Attachment DR4 General 3c stated that Mountain Valley’s Karst Specialist Team (KST) has “developed a number of recommendations, including case-specific conditions in which sampling and monitoring is warranted. The KST’s response to the December 20, 2016 Virginia Cave Board letter will be provided to FERC under separate cover.” Provide a copy of this letter as well as the recommendations developed by Mountain Valley’s KST and whether Mountain Valley would commit to adopting those recommendations.

Response:

See narrative response in Attachment DR5 Geology 1a and associated maps in Attachment DR5 Geology 1b.

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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Geology

2. Attachment DR4 Alternatives 3 included a figure: “Route Alternatives in the Area of Slussers Chapel Conservation Site.” However MPs cannot be identified in that figure due to the low resolution of the image. Provide a revision of the figure in sufficient resolution such that all features and specifically MPs can be read.

Response:

A revised figure is included as Attachment DR5 Geology 2.

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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Geology

3. The response to Geology 6 (filed February 2017) stated that peak horizontal ground accelerations (PGAs) would be greater than 0.14 the force of gravity (g) from MPs 192 to MP 210. Previous mapping by Mountain Valley indicated a much larger area, from MPs 165 to 230, and maximum PGAs with 2 percent chance of exceedance in 50 years of 0.14 g. To resolve the apparent discrepancies, provide:
 - a. the MPs where PGAs with 2 percent chance of exceedance in 50 years would be equal to or greater than 0.14 g;
 - b. the maximum PGA that would be crossed by the MVP according the USGS Long-term Model seismic hazard data (PGA, 2 percent chance of exceedance in 50 years); and
 - c. clarification that the cover over Class 1 pipe in areas of with PGAs equal to or greater than 0.14 g would not be greater than 10 feet.

Response:

The response provided to the FERC regarding Geology 6 (filed February 2017), is correct in that the USGS probabilistic assessment of peak ground acceleration (PGA) in the vicinity traversed by the proposed route is approximately 0.14 g (i.e., 14 percent of gravity) with a 2 percent probability of exceedance in 50 years (based on Petersen et al, 2014). The initial discussion on seismic PGA provided in Resource Report #6 (initial filing route) was intended to demonstrate more broadly the initial proposed alignment that traversed areas where the USGS modeling effort (Petersen et al, 2014) suggested PGA exceeded 0.1 g (10 percent of gravity). The attached Figure (Attachment DR5 Geology 3) is intended to clarify the probabilistic PGA (peak 0.14 g) for the currently proposed route.

Based on information from Petersen et al (2014) depicted in Attachment DR5 Geology 3:

- a. The mileposts (MPs) where PGAs with 2 percent chance of exceedance in 50 years would be equal to or greater than 0.14 g are between approximately MP 192 and MP 210.
- b. The maximum PGA that would be crossed by the MVP according the USGS Long-term Model seismic hazard data (PGA, 2 percent chance of

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

exceedance in 50 years) is approximately 0.14 g, or 14 percent of gravity (i.e., equal to or greater than 0.14 g, but less than 0.16 g).

- c. In areas susceptible to liquefaction, the maximum cover on Class 1 pipe in areas with PGA of at least 0.14g will not exceed 10 feet.

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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Geology

4. Revised table 4.1.2-2 (updated March 2017) contains an apparent discrepancy where the start point of MP 197.5 is greater than the end point MP of 197.4. Correct this apparent error.

Response:

This typographical error has been corrected on the attached DEIS table 4.1.2-2 (Attachment DR5 Geology 4).

Respondent: Ricky Myers
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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Geology

5. In response to public comments, provide a discussion of ground heaving or the freeze thaw cycle that may affect slope stability and the potential for landslides in areas with high potential for landsliding.

Response:

In the Appalachian region, the freeze-thaw cycle and ground heaving are most closely associated with creep. Creep due to freeze-thaw is an almost imperceptibly slow, gravity-driven, downslope movement of rock and soil created by near-surface weathering. The forces causing creep are too minute to cause shear failures, but may produce ground deformation. Creep movement associated with freeze-thaw cycles is generally confined to the portion of the ground surface affected by frost action (as deep as three feet at the northern limits of the project, becoming shallower in the southern reaches). Pistol-grip tree trunks (gravitropism) and leaning near-surface man-made appurtenances such as fence posts are indicators of creep. Soil creep is not anticipated to cause any notable slope failure or mass wasting with regards to Mountain Valley Pipeline. Routine post-construction inspections of the pipeline will identify areas that may be affected by soil creep; these areas will be assessed on a case-by-case basis and remediated as necessary.

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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Geology

6. Address the letter filed with the FERC by Coronado Coal on February 22, 2017 (accession number 20170222-5078). In particular, provide recent communications with Coronado Coal towards reaching an agreement to cross their coal reserves and compensate for impacts.

Response:

Mountain Valley submitted an Answer to Coronado on March 30, 2017. A copy of that filing is included as Attachment DR5 Geology 6.

Respondent: Ricky Myers
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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Geology

7. Table 4.1.1-11 is missing several areas of landslide concern that are identified in Table 1 – Landslide concern Areas Crossed by the Mountain Valley Pipeline in Mountain Valley’s updated Landslide Mitigation Plan (Attachment DR4 General 2c)]. Provide an updated Table 4.1.1-11 that includes all areas of landslide concern as identified in the Landslide Mitigation Plan and table 4.1.1-11.

Response:

DEIS table 4.1.1-11 has been updated and is included as Attachment DR5 Geology 7.

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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Geology

8. Clarify if the October 2016 pipeline route would run perpendicular to a potential triggered slope displacement hazard in proximity to the GSCZ, provide MPs for the hazard, and indicate if Mountain Valley still intends to use Class 2 pipe in this area.

Response:

Mountain Valley reviewed the Proposed Route and confirms the presence of two potential triggered slope displacement hazards, in proximity to the GCSZ, running perpendicular to the pipeline alignment. These areas are located approximately between MP 196.38-196.46 and 197.0-197.03. Mountain Valley intends to use Class 2 pipe in both areas.

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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Soils

1. Attachment DR4 General 3d stated that: "...topsoil and subsoil will be tested for compaction through the Project area as necessary in areas disturbed by construction activities" and "appropriate soil compaction mitigation will be performed in severely compacted residential areas." Clarify whether soil compaction testing and mitigation would be conducted along the entire pipeline route, or limited to agricultural and residential areas.

Response:

Mountain Valley will mitigate soil compaction along the entire pipeline route by discing the right-of-way and all disturbed areas. Compaction testing may be performed at the discretion of the Environmental Inspector following discing to evaluate whether discrete areas have been sufficiently decompacted.

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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Soils

2. Revise table 4.2.1-1 to remove table note i/ (which was added by Mountain Valley post-draft EIS). Update all acreages as necessary.

Response:

Table 4.2.1-1 has been updated as requested and included as Attachment DR5 Soils 2.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: March 30, 2017

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Soils

3. There are several discrepancies between the totals presented for temporary and permanent access roads in table 4.2.1-1 as compared to Appendix N. Appendix N-4 shows 921.2 acres of permanent impact to soils with wind erosion potential while table 4.2.1-1 shows 0.0 acres of impacts. For compaction potential Appendix N-4 reports 18.3 acres of temporary impacts for compaction potential while table 4.2.1-1 reports 550 acres. Appendix N-4 reports 0.0 and 0.0 acres of permanent and temporary impact respectively while table 4.2.1-1 reports 9.7 and 38 acres respectively. Clarify these apparent discrepancies.

Response:

Table 4.2.1-1 has been updated and included as Attachment DR5 Soils 2.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: March 30, 2017

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Soils

4. There are several discrepancies between the totals presented for Cathodic Protection Areas in table 4.2.1-1 and Appendix N-8. Appendix N-8 reports 7 acres, 1.3 acres, 2.9 acres, and 1.1 acres for prime farmlands, compaction potential, water erosion potential, and poor drainage potential, respectively. Table 4.2.1-1 reports 14.3 acres, 2.7 acres, 6 acres, and 2.1 acres for prime farmlands, compaction potential, water erosion potential, and poor drainage potential, respectively. Clarify these apparent discrepancies.

Response:

Table 4.2.1-1 has been updated and included as Attachment DR5 Soils 2.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: March 30, 2017

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Land Use, Transportation, Recreation, and Visual Resources

1. Attachment DR4 General 3c stated that “Mountain Valley will incorporate the recommendations from the Virginia Department of Transportation (VDOT) into the Traffic and Transportation Management Plan.” Clarify if the revised Traffic and Transportation Management Plan filed on February 9, 2017 includes these VDOT recommendations, and if not provide an updated version.

Response:

Mountain Valley has incorporated all of the recommendation into its Traffic and Transportation Management Plan. The updated version of the plan is included as Attachment DR5 Land Use 1.

Respondent: John Uhrin
Position: Construction Director
Phone Number: 724-873-3497
Date: March 30, 2017

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Land Use, Transportation, Recreation, and Visual Resources

2. Revise table 2.3-3 from the draft EIS to include acres affected for each land use type for each yard.

Response:

DEIS Table 2.3-3, Yards for the Mountain Valley Project has been updated to incorporate data from DEIS Table 4.8.1-3, Land Use Types Affected by Yards Used During Construction of the Mountain Valley Project (in acres) (which has also been updated in response to Land Use, Question 6). The updated table is included as Attachment DR5 Land Use 2. Table 4.8.1-3 has also been updated as Attachment DR5 Land Use 6.

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Land Use, Transportation, Recreation, and Visual Resources

3. Provide a table with the miles of each land use category the pipeline would cross by state.

Response:

A table identifying the miles of each land use category the pipeline would cross, by state, is provided as Attachment DR5 Land Use 3.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: March 30, 2017

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Land Use, Transportation, Recreation, and Visual Resources

4. The updated table 4.8.1-1 appears to show 0.0 acres of construction impacts for aboveground facilities in Virginia, but shows 0.1 acres of operational impacts. Clarify this discrepancy.

Response:

The table is correct with regard to the data request. The area (acreage) affected during construction of the proposed H-602 receiver site (see Alignment Sheet PA-PIVA-H602-01 Sheet 1 of 1) is captured in the construction acreage for the pipeline because that site is located within the construction workspace, but is outside of the permanent right-of-way so it has an operational acreage.

Table 4.8.1-1 has been updated for other reasons (see Attachment DR5 Land Use 4).

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Land Use, Transportation, Recreation, and Visual Resources

5. The updated table 4.8.1-2 has discrepancies for the Virginia launcher and receiver sites and for the subtotals. The launcher and receiver sites show 0.2 acre under operational agricultural land use and 0.1 acre under operational forest land use, with no construction impacts; however, the totals listed for launcher and receiver sites show 0.3 acre of construction impact and no operational impact. Additionally, the Virginia total of 41.0 acres for construction does not appear to add up to the total of the Transco Interconnect of 41.0 acres and the launcher and receiver sites of 0.3 acre, which would be 41.3 acres. Clarify these discrepancies.

Response:

The updated table is included as Attachment DR5 Land Use 5. The area (acreage) affected during construction of the proposed H-602 receiver site (see Alignment Sheet PA-PIVA-H602-01 Sheet 1 of 1) is captured in the construction acreage for the pipeline because that site is located within the construction workspace, but is outside of the permanent right-of-way so it has an operational acreage.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: March 30, 2017

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Land Use, Transportation, Recreation, and Visual Resources

6. The updated table 2.3-3 has a number of discrepancies with the updated table 4.8.1-3 in describing yards for the MVP. Provide updated tables or clarification for the following issues:
 - a. table 2.3-3 lists 15 yards in West Virginia and table 4.8.1-3 lists 19 yards in West Virginia;
 - b. the total of the acreages for West Virginia in table 2.3-3 adds to 122.4 acres, but the subtotal listed shows 132.6 acres;
 - c. table 2.3-3 shows MVP-RD-001 and MVP-LY-007 crossed out, but table 4.8.1-3 still lists those yards;
 - d. table 4.8.1-3 lists MVP-AP-001, MVP-AP-002, MVP-LOG-001, and MVP-SA-001, but table 2.3-3 does not list these yards;
 - e. table 4.8.1-3 lists acreages on the same line as the heading for West Virginia which are not the subtotals for West Virginia; and
 - f. acreage totals for the individual yards in table 4.8.1-3 do not match the acreages listed for yards listed in table 2.3-3.

Response:

Tables 2.3-3 and 4.8.1-3 have been updated and corrected in Attachment DR5 Land Use 2 and Attachment DR5 Land Use 6, respectively.

- a. The number of yards in West Virginia is equal in Tables 2.3-3 and 4.8.1-3;
- b. The total acreage for West Virginia has been corrected to 132.615 acres;
- c. Tables 2.3-3 and 4.8.1-3 were updated so that both include MVP-RD-001 and MVP-LY-007;
- d. Tables 2.3-3 and 4.8.1-3 were updated so that both include MVP-AP-001, MVP-AP-002, MVP-LOG-001, and MVP-SA-001;

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

- e. The acreage totals in the West Virginia heading line in Table 4.8.1-3 have been placed with the correct yard. The acreage totals for all other yards in the table have also been updated correspond;
- f. Individual yard acreage totals have been updated such that they match between Table 4.8.1-3 and Table 2.3-3.

Respondent: Ricky Myers
Position: Engineering Manager
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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Land Use, Transportation, Recreation, and Visual Resources

7. Address the comment regarding property values provided by Kenneth Dudley during the November 1, 2016 FERC public session to take comments on the draft EIS.

Response:

The potential for impacts on property values from construction and operation of the Project is addressed in section 5.3.4 of Resource Report 5 as well as section 4.9.1.6 of the draft EIS.

Respondent: Ricky Myers
Position: Engineering Manager
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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Land Use, Transportation, Recreation, and Visual Resources

8. On February 9, 2017 Mountain Valley updated one of the site-specific residential plans. File a complete set of updated Site-Specific Residential Construction and Mitigation Plans for all houses within 50 feet of a construction workspace.

Response:

A complete set of updated Site-Specific Residential Construction and Mitigation Plans for all houses within 50 feet of a construction workspace is included as Attachment DR5 Land Use 8.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: March 30, 2017

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Land Use, Transportation, Recreation, and Visual Resources

9. In the updated table 4.8.1-10 the MP locations of the last nine Key Observation Points (KOP) appear to be overlapped with previous MP numbers as they contain extra numbers and multiple decimal points. Clarify the MP locations in the table.

Response:

Table 4.8.1-10 has been updated with the correct MP locations and extra decimal points removed. Please see the attached updated Table 4.8.1-10 (Attachment DR5 Land Use 9).

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Land Use, Transportation, Recreation, and Visual Resources

10. For the updated table 4.8.2-1 provide definitions for the terms, “Purchased,” “ROW acquired,” “Landowner Compensated,” and, “PLROW signed.” Clarify the differences between these terms.

Response:

Table 4.8.2-1 has been updated to provide additional clarity. See Attachment DR5 Land Use 10.

Property purchased is defined as the surface/structure purchased through deed and is now owned by Mountain Valley.

Easement Acquired represents where the structure will be safeguarded throughout construction or will note which structures were purchased in addition to the easement.

Respondent: Ricky Myers
Position: Engineering Manager
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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Land Use, Transportation, Recreation, and Visual Resources

11. The current visual simulation for the Weston Gauley Bridge Turnpike appears to be at the crossing of the Gauley Turnpike (State Route 4) at MP 72.4. Provide updated visual simulations and analysis for the Weston Gauley Bridge Turnpike at the trail crossing location near MP 66.9.

Response:

Mountain Valley has included visual simulations in the Visual Impact Assessment for the Weston and Gauley Bridge Turnpike Trail (“Assessment”) that was submitted to the United States Army Corps of Engineers on February 15, 2017. The Assessment was inadvertently omitted from Mountain Valley’s February 17, 2017 filing with FERC, but is included herewith as Attachment DR5 Land Use 11. The Assessment correctly shows the crossing of the Weston and Gauley Bridge Turnpike Trail at MP 66.9.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Land Use, Transportation, Recreation, and Visual Resources

12. Confirm that the filed alignment sheets depict the correct location of the Appalachian National Scenic Trail (ANST) as discussed in the FS March 3, 2017 letter (accession number 20170306-5054).

Response:

In a letter dated March 3, 2017 from the George Washington and Jefferson National Forest, the United States Forest Service advised Mountain Valley contact the Appalachian Trail Conservancy Region Director, Andrew Downs, and request the accurate (most current) Appalachian National Scenic Trail (ANST) centerline data for the four identified “exception areas”. Mountain Valley contacted Mr. Downs and on March 15, 2017 received shapefiles of the relocations at Bluff City, New River, Sinking Creek, and War Spur from Mr. Downs.

Once the relocations received from Mr. Downs were paired with the ANST Centerline downloaded from the Appalachian Trail Conservancy website, Mountain Valley submitted a map to Mr. Downs on March 21, 2017 and requested confirmation that the map depicted the correct centerline location of the ANST. Mr. Downs responded on March 22, 2017 saying that the centerline map “looks good.”

As a result of this exchange, Mountain Valley confirms that the previously-submitted alignment sheet depicting where the pipeline crosses the ANST reflects the correct location of the ANST.

However, there was a slight trail adjustment in the location of Pocahontas Road, which affects one of Mountain Valley’s access roads. Mountain Valley has updated the applicable access road detail sheets and included them as Attachment DR5 Land Use 12.

Respondent: Ricky Myers
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Phone Number: 724-873-3640
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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Land Use, Transportation, Recreation, and Visual Resources

13. Address the following comments regarding the JNF Visual Impact Assessment:
- a. Page 7: The bulleted environmental factors do not include all of those contained in the Bureau of Land Management (BLM) Visual Resource Contrast Rating Manual (missing are Season of Use, Light Conditions, Recovery Time, Spatial Relationships, Atmospheric Conditions, and Motion). While some of these factors may not be relevant (like Motion), Recovery Time and Season of Use would appear to be relevant. Provide clarification regarding these factors;
 - b. Page 8, Section 4: This section describes temporary, long-term, and short-term impacts, but the only impacts addressed seem to be temporary (“The simulations demonstrate what the Project right-of-way would look like post construction but before revegetation.”). Provide a discussion of revegetation, in addition to the mitigation measures that are listed in Section 5. Also discuss the types of maintenance activities that would occur and their frequency, along with their impacts;
 - c. Page 16, 1st full paragraph: State definitively whether the right-of-way would be feathered to soften the edges;
 - d. Page 17, first paragraph: This states that there will be no visible notch in the vegetation at the top of Peters Mountain. Appendix B, Figure 7, however, shows what appears to be a visible notch. Provide clarification;
 - e. Page 18, 3rd full paragraph: The text says that: “The ROW is not visible in the simulation due to screening terrain and vegetation as well as the distance to the ROW. The simulation demonstrates that the ROW will be effectively screened with the vegetation; thus, contrast levels are not perceptible.” However, Appendix B, Figure 9 says: “The red arrow indicates where the proposed pipeline would be visible crossing over Peters Mountain.” Provide clarification;
 - f. Page 26, first full bullet, last line: The text says there would be no visual impact, but Figure 19 in Appendix B says that modifications would be apparent. Provide clarification;

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

- g. Page 26, 2nd full bullet: The text says there would be low visual impacts to the ANST, but Figure 20 in Appendix B says that modifications would be apparent. Explain why this would be a low visual impact;
- h. Page 26, 3rd full bullet: The text says there would be no visual impact, but Figure 21 in Appendix B says that modifications would be apparent. Provide clarification;
- i. Site photographs should be taken which best represent the human visual perception. Standards include lens was set at 31 mm to compensate for crop factor (31 mm lenses setting X 1.6 crop factor = 49.6 mm output view); thereby creating a 50-mm equivalent focal length. The 50-mm equivalent focal length produces a 38.6° horizontal field of view which best represents the human visual perception (HFOV) [National Research Council. 2007 Environmental Impacts of Wind-energy Projects. Board on Environmental Studies and Toxicology, Division on Earth and Life Sciences. National Academies Press, Washington, D.C. 376 pp.] Photo simulations presented in the JNF report are not at this standard. They are panoramic and cropped which inhibits HFOV. Explain the apparent deviation from the standard and describe any corrective actions that Mountain Valley intends to apply.
- j. Simulation PT-02 shows no change even though the pipeline would cross. Clarify this apparent discrepancy; and
- k. Many of the simulations were created using photos that were taken when weather conditions were not conducive to the analysis. Numerous KOP locations (KOP 115, KOP 113, KOP 114, KOP 103, KOP PR-1, KOP PR-2, KOP PR-3, KOP PR-4, KOP PR-5, and KOP PR-6) were clouded by fog and ground levels were not visible. Provide updated photographs for these locations that are taken on clear days.

Response:

Mountain Valley expects to file a response by April 7, 2017.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: March 30, 2017

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Land Use, Transportation, Recreation, and Visual Resources

14. Address the following issues, noted in the In the February 2017 filing of the Blue Ridge Parkway Visual Impact Analysis:
- a. Simulations for KOPs 44 and 65 both state that the project would be visible, however, the pipeline route is not readily discernable in the photos. Provide updated simulations that point out the pipeline route or provide clearer photos that make the changes in the post construction views more recognizable;
 - b. Visual simulations for KOPs 52, 53, 56, 57, 58, 59, 60, 62, and 64 outline the pipeline right-of-way, but do not illustrate views with vegetation removed. Provide updated simulations that show tree clearing impacts and other disturbances;
 - c. Page 1, 3rd paragraph, the text stated that: “The proposed location is the only feasible location to cross the BLRI within relatively flat, non-forested, open land, thereby minimizing tree clearing and other construction disturbance on or near the BLRI.” However, Page 14 indicates that Alternative 3 is the preferred alternative and would avoid clearing mature trees in a certain area, among other reasons. Clarify this apparent discrepancy;
 - d. Page 14, 1st full paragraph, explain why future visibility would be higher once surrounding vegetation was reestablished and why it would not be lower;
 - e. Page 16, bullets, clarify when “the Project” is mentioned, whether this is applicable to Alternative 3 or Mountain Valley’s Proposed Route;
 - f. Site photographs should be taken which best represent the human visual perception. Standards include lens was set at 31 mm to compensate for crop factor (31 mm lenses setting X 1.6 crop factor = 49.6 mm output view); thereby creating a 50-mm equivalent focal length. The 50-mm equivalent focal length produces a 38.6° horizontal field of view which best represents the human visual perception (HFOV) [National Research Council. 2007 Environmental Impacts of Wind-energy Projects. Board on Environmental Studies and Toxicology, Division on Earth and Life Sciences. National Academies Press, Washington, D.C. 376 pp.] Photo simulations presented

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

in BRP report are not at this standard. They are panoramic and cropped which inhibits HFOV. Not all represent the human visual perspective. Explain the apparent deviation from the standard and describe any corrective actions that Mountain Valley intends to apply.

- i. KOP 52 – the simulated permanent ROW floats in the air. No actual tree clearing or right-of-way is simulated. Clarify this apparent discrepancy;
- ii. KOPs 53-58 – the simulated permanent ROW is not a simulation. An outline of where the potential ROW would be is drawn, but no simulation showing any disturbance, tree removal, or post construction mitigation is shown. Clarify these apparent discrepancies;
- iii. KOPs 59-64 - the simulated permanent right-of-way floats in the air. No actual tree clearing or right-of-way is simulated. Clarify these apparent discrepancies.

Response:

Mountain Valley expects to file a response by April 7, 2017.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: March 30, 2017

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Alternatives

1. Provide documentation of the National Park Service review of Mountain Valley's proposed pipeline route and method of crossing the Blue Ridge Parkway.

Response:

NPS has been working closely with Mountain Valley on the proposed pipeline route crossing of the Blue Ridge Parkway. The cost recovery invoices included as Attachment DR5 Alternatives 1 document that NPS has been working on this crossing during 2016 and 2017.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
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**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Alternatives

2. Provide additional data rows for the tables “Comparison of Alternatives in the Area of Slussers Chapel Conservation Site and the October 2016 Proposed Route” and “Comparison of the FERC Poor Mountain Variation and the October 2016 Proposed Route” (filed February 2017) including: a) number of towns/populated areas within 0.5-mile; b) number of known cultural resources within 0.5-mile; c) number of landowner parcels crossed; d) acres of interior forest affected; e) number and acres of forested wetlands crossed; f) number of major river crossings; g) number of streams crossed designated as public drinking water supplies; and h) miles of landslide prone soils crossed.

Response:

The requested revised tables are included in Attachments DR5 Alternatives 2a and 2b.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: March 30, 2017

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Alternatives

3. Assess the viability of a modified Variation 250 that would re-join the proposed route near MPs 223.7 (instead of rejoining near MP 222.15) so as to avoid being located south of the Pulaski Thrust Fault in the vicinity of MPs 222.05 – 222.25. The purpose of a modified Variation 250 would be to further minimize potential impacts on water supplies and caves. Provide all relevant additional details (tables and mapping) and narrative analyses regarding advantages and disadvantages of Variation 250 and modified Variation 250 in comparison to the October 2016 proposed route. Include the results of further coordination between Mountain Valley and the VDCR regarding these variations.

Response:

Mountain Valley has conducted an analysis of a modified variation 250 to avoid being located south of the Pulaski Thrust Fault in the area referenced in the request. The Pulaski Thrust Fault in the vicinity of the Mount Tabor area is geologically inactive, being formed 400 million years ago, and is not a seismic fault or seismic hazard. The significance of the Pulaski Thrust Fault in the Mount Tabor area is that it is a geologic feature that forms the boundary of karst and non-karst geology, with the non-karst geology to the north-northeast, and karst geology south-southwest of the line. Mountain Valley has addressed the crossing of karst terrain in multiple reports and analysis as part of its application to FERC.

Modified Variation 250 begins at approximate MP 220.75 of the proposed route where it turns east, leaving a private landowner parcel and entering the Jefferson National Forest (JNF) for approximately 1.3 miles before rejoining the proposed route at MP 222.4. Modified Variation 250 then follows the proposed route for 0.2 mile to MP 222.6, when it turns north, crossing landowner parcels already affected by the proposed route before entering the JNF again for approximately 1.0 mile, rejoining the proposed route at MP 223.6. Modified Variation 250 is shown on a map with topographic base layers in Attachment DR5 Alternatives 3a, on a map with aerial image background in Attachment DR5 Alternatives 3b, and a map showing slope in Attachment DR5 Alternatives 3c. A table comparing environmental features crossed by Modified Variation 250 and the proposed route is included in Attachment DR5 Alternatives 3d.

The advantage of the Modified Variation 250 is that it avoids the Pulaski Thrust Fault line by shifting the pipeline approximately 510 feet north at its closest point, which decreases the number of known karst features, sinkholes, or caves within 50 feet of the construction right-of-way. Although the number of karst features appear to be higher for

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

the Proposed Route, it is important to note that Mountain Valley has already performed electrical resistivity (ER) surveys on areas of the Proposed Route south of the Pulaski Fault. The ER analysis indicated a stable sub-surface within the design depth of the pipeline excavation and through a depth where the pipeline could affect, or be affected by, any karst features. Based on this ER analysis, coupled with desktop analysis and other field reconnaissance, Mountain Valley does not expect any significant risk associated with karst terrain in the relevant area of the Proposed Route. Any karst encountered during construction can be addressed through the processes detailed in the Karst Mitigation Plan, including minor route adjustments. Thus, a comparison of the number of known karst features alone is not a determining factor in selecting an environmentally advantageous route, especially considering this ER analysis.

In addition, there are numerous disadvantages to Modified Variation 250. Modified Variation 250 significantly increases impact to the JNF compared to the proposed route. Modified Variation 250 crosses approximately 2.3 miles of the JNF, while Variation 250 and the corresponding segment of proposed route avoid crossing the JNF. Variation 250 and the proposed route present no notable constructability concerns. In contrast, Modified Variation 250 significantly increases construction risk due to the amount of side slope construction required (0.5 mile) where turning east from the proposed route at MP 220.75. Modified Variation 250 will also impact an additional landowner not previously affected by the proposed route; splitting between two residences at the crossing of Mt. Tabor Road, Rt. 624, putting the centerline approximately 140 feet from an established residence. Modified Variation 250 also has very limited access and will require additional access roads to be identified and pursued for mobilization of construction personnel and material, which would have additional incremental impacts not included in the table comparing environmental features.

In consideration of the environmental and residential impacts, as well as the increase in construction risks incurred by Modified Variation 250, Variation 250 is preferable to Modified Variation 250.

Mountain Valley provided information to the VDCR regarding Variation 250 on March 28, 2017. Mountain Valley will also be providing information to the DCR regarding Modified Variation 250.

Respondent: Ricky Myers
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Phone Number: 724-873-3640
Date: March 30, 2017

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Alternatives

4. Address the comment in accession number 20170315-5063 and develop and assess a potential reroute located west of, and avoiding, The Nature Conservancy easement. Provide all relevant additional details (tables and mapping) and narrative analyses regarding advantages and disadvantages of the new variation in comparison to the October 2016 proposed route.

Response:

As requested in the letter filed as accession number 20170315-5063, Mountain Valley has identified a route variation west of the proposed route that avoids The Nature Conservancy's (TNC) Poor Mountain Easements adjacent to the Scott property, as well as the Scott property, which shares a common property line with the TNC conservation easement. A map of the variation is included in Attachment DR5 Alternatives 4a, and a table comparing the variation to the corresponding segment of proposed route is included in Attachment DR5 Alternatives 4b.

Initially, Mountain Valley considered a reroute to the parcels directly southwest and adjacent to the parcels in question. This reroute would avoid the TNC easement parcels and Scott properties but would result in similar impacts to other conservation easements, particularly the Virginia Outdoors Foundation (VOF) MON-VOF-2564. Therefore, Mountain Valley identified a route further to the southwest that avoids the VOF easement, called here Alternative 682, and described below and in the attachments.

Alternative 682 would leave the proposed route at MP 239.3 where it would turn southwest and cross forested areas along new right-of-way for about 2.2 miles. About 1.5 miles of this section of the variation is just outside the northwest boundary of the VOF easement MON-VOF-2564. The variation would then turn southeast and continue generally southeast and east across mostly forested areas on new right-of-way for about 3.6 miles, before rejoining the proposed route at MP 244.5. In this section the variation would cross about 2.5 miles of two parcels with TNC conservation easements, and the last 0.8 mile the variation would cross a mix of forest, cleared land, and open pasture. Thus, even though Alternative 682 would avoid one TNC easement, it would impact another TNC easement.

Constructability Analysis:

Alternative 682 was designed to skirt the northwestern edge of the VOF easement while avoiding adverse terrain further to the northwest. Ultimately, this route was deemed not constructible due to approximately 10,600 feet of extreme side slope terrain and severe

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

rock outcroppings along the northwestern edge of the VOF easement. Areas northwest of the Alternative 682 were explored to avoid the side slope terrain but were ultimately avoided due to poor topography. Slopes in this area range from 70-90 percent and would result in numerous winch hill construction scenarios. This area would also increase environmental impacts due to the number of stream crossings that would be encountered.

The table included in Attachment DR5 Alternatives 4b offers additional environmental comparison of Alternative 682 compared to the corresponding segment of proposed route.

In summary, after review of multiple reroutes, Mountain Valley concludes that the currently proposed route is the safest, most constructible route and offers the least amount of environmental impact. The Alternative 682 would result in comparable or increased impacts to conservation easements, increased environmental impacts, and poor construction conditions.

However, Mountain Valley has responded to concerns previously identified by the Scott's in letters filed on the FERC docket (Accession Number 20160406-5119). Mountain Valley will continue to work with the landowner in this location and identify measures to address landowner concerns, including minor line shifts if appropriate.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: March 30, 2017

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Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Alternatives

5. Regarding Attachment DR4 Alternatives 10 (filed February 2017), address the stakeholder comment regarding proximity to wells for FERC ID No. 20161207-0035, the comment regarding bisection of the property for FERC ID No. 20161201-5118, and clarify the statement that: “Mountain Valley will limit its use of this access road to the minimum width necessary, which would result in no disturbance to the tree or flower bed” for FERC ID No. 20161017-0031.

Response:

- 20161207-0035 - Mountain Valley sent a letter to the submitter of the comment on March 7, 2017 requesting authorization for access to determine the location of, and test, any wells on the property. Testing would be conducted in accordance with Mountain Valley’s Water Resources Identification and Testing Plan protocol. No response has been received from the landowners. In accordance with the Water Resources Identification and Testing Plan, if no response is received within approximately 30 days of submittal, a second request will be sent to give the property owner an additional opportunity to consider the baseline sampling offer.
- 20161201-5118 - The proposed route follows contours that are most conducive to pipeline construction and increase safety. Mountain Valley evaluated the possibility of shifting the route on the submitter’s property, but the terrain in the nearby area is unsuitable for pipeline construction because of side slopes to the east and west.
- 20161017-0031 - Mountain Valley confirms there will be no impact to the flower bed. In addition, Mountain Valley anticipates very little impact to the “tree,” limited to possible limb trimming on this particular section on the access road.

Respondent: Ricky Myers
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**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Alternatives

6. Further update table 3.5.3-1 (Attachment DEIS Recommendation-16, filed December 22, 2016) as provided by Mountain Valley in its February 2017 (response to EIR Question Alternatives No. 9) with conclusions wherever possible and/or new information (such as for accession numbers 20150316-5023 and 20150609-5107), for pending minor route variations and/or stakeholder-identified issues. Where survey access has been denied (such as accession number 20160406-5119), perform an analyses of alternative routing using available desktop data in an attempt to address landowner concerns. As applicable, consider and discuss mitigation measures unrelated to routing, or explain in detail why no rerouting or mitigation is warranted. Indicate if any of the identified issues have been resolved with the landowner.

Response:

See Attachment DR5 Alternatives 6.

Respondent: John Uhrin
Position: Construction Director
Phone Number: 724-873-3497
Date: March 30, 2017

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Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Alternatives

7. Provide an analysis (similar in the format to table 3.5.3-1 from the draft EIS) for both newly reported and updates to previously submitted landowner or land manager requested minor route variations or related concerns as supplemented in the docket, including but not limited to the following accession numbers:
 - a. 20161024-5011;
 - b. 20161027-5132;
 - c. 20161207-0011;
 - d. 20161212-5040;
 - e. 20161212-5044;
 - f. 20161212-5046;
 - g. 20161212-5234;
 - h. 20161213-5021;
 - i. 20161213-0057;
 - j. 20161216-5043;
 - k. 20161220-0051;
 - l. 20161220-0010;
 - m. 20161223-0033;
 - n. 20161221-5574;
 - o. 20161026-5020/20150420-5197 (reference the same topic);
 - p. 20161110-5022;
 - q. 20161222-5538;
 - r. 20161222-5006;

**Mountain Valley Pipeline, LLC
Mountain Valley Pipeline Project
Docket No. CP16-10-000**

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

- s. 20161228-0073;
- t. 20161222-5090;
- u. 20161221-5103 (regarding the Falls Ridge Nature Conservancy Preserve);
- v. Glen Frith (Franklin County High School , Nov. 2, 2016 public comment session);
- w. James Chandler (Roanoke, Virginia Sheraton, Nov. 2, 2016 public comment session);
- x. Vicki Pierson (Lewis County High School, Nov. 1, 2016 public comment session); and
- y. Ginger Smithers (emails to FERC staff dated February 21-23, 2017, recently placed in the docket).
- z. 20170324-5140 (request subsequently added).

If Mountain Valley cannot make the route adjustments requested by these landowners, explain why.

Response:

See Attachment DR5 Alternatives 7.

Respondent: John Uhrin
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**Response to Post-Draft Environmental Impact Statement
Environmental Information Request #2 Issued March 20, 2017**

Reliability and Safety

1. In response to comments, for each of the 37 fire stations within 1 mile of the MVP facilities, provide the number of full-time staff, volunteer staff, and a list of available equipment. Also provide maps showing the preferred routes used by these fire stations for accessing remote areas of the project.

Response:

The number of full-time staff, volunteer staff, and available equipment are depicted in Attachment DR5 Reliability and Safety 1. As a point of clarification, the 37 fire stations are within five miles, not one mile as indicated in the request. To date, Mountain Valley has received responses for 24 of the 37 locations.

Preferred routes for accessing the Project are at the discretion of the local fire departments, which are more knowledgeable of their respective areas.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: March 30, 2017