

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

**Response to Post-Draft Environmental Impact Statement
Environmental Information Request Issued January 27, 2017**

General Project Description

1. On June 24, 2016, Mountain Valley filed its Plan of Development (POD) for crossing federal lands. In some cases, mitigation plans included in the POD were specific to federal lands. Does Mountain Valley intend to expand those plans to apply to the entire project area, including state, municipal, and privately-owned lands along the proposed pipeline route? If not, please provide a justification. The specific plans that should be expanded to cover the entire project area include:
 - a. Environmental Compliance Management Plan;
 - b. Restoration Plan;
 - c. Stormwater Pollution Prevention Plan;
 - d. Plant and Wildlife Conservation Measures Plan;
 - e. Hazardous Materials Management Plan;
 - f. Construction Emergency Preparedness and Response Plan;
 - g. Operation, Maintenance, and Emergency Response Plan;
 - h. Framework Flagging, Fencing, and Signage Plan; and
 - i. Off-Highway Vehicle Management Plan.

Response:

The plans included in the POD are specific to Forest Service lands. These plans include Forest Service-specific provisions and requirements for oversight, authority, variance process, reporting, specifications, and standards that are tied to the Forest Service's permitting authority and are not applicable across the entire Project. Therefore, Mountain Valley does not intend to expand these plans to apply to the entire Project area.

However, Mountain Valley does have certain plans that would apply along the entire length of the Project, including FERC's Upland Erosion Control, Revegetation, and Maintenance Plan (Plan) and Waterbody and Wetland Construction and Mitigation Procedures (Procedures) as modified. FERC's Plans and Procedures address the Project-wide plans for environmental inspections, restoration, hazard materials management, off-road vehicle control, and post-construction maintenance.

The Stormwater Pollution Prevention Plan (SWPPP) referenced in the POD has been developed as a requirement of the Virginia Stormwater Management Program General Permit for Discharges of Stormwater from Construction Activities and is applicable to all

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Project construction activities within Virginia. A similar SWPP for West Virginia has also been developed that applies to Project construction activities within West Virginia.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: February 17, 2017

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2. Document that Mountain Valley has submitted an updated SF-299 Right-of-Way Application to the U.S. Department of the Interior Bureau of Land Management (BLM) that *covers the current pipeline route* across federal lands.

Response:

Mountain Valley expects to submit the updated SF-299 Right-of-Way Application to the BLM by the end of February 2017. Mountain Valley intends to review the updated SF-299 with the FS prior to submitting the document. Mountain Valley will file a copy with FERC.

Respondent: Ricky Myers
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Phone Number: 724-873-3640
Date: February 17, 2017

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3. Address the issues raised in the following letters filed with the FERC during the draft environmental impact statement (EIS) comment period:
 - a. Accession number 20161107-0096 (U.S. Army Corps of Engineers [COE]);
 - b. Accession numbers 20161215-5124, 20161221-5281, 20161221-5281, and 20161223-5049 (BLM, U.S. Forest Service [FS], U.S. Geological Survey [USGS]);
 - c. Accession number 20161222-5394 (Commonwealth of Virginia);
 - d. Accession number 20161229-0033 (U.S. Environmental Protection Agency [EPA]);
 - e. Accession number 20160907-5211 and 20161028-5031 (re: emergency response services);
 - f. Accession number 20161222-5458 (Mr. Rubin's report);
 - g. Accession number 20161222-5459 (Roanoke County Hydrogeological Assessment);
 - h. Accession number 20161219-5056 (Johnson);
 - i. Accession number 20161222-5062 (Vance);
 - j. Accession number 20161222-5403 (Yellow Finch Lane);
 - k. Accession number 20161223-5090 (Four Corners Farm – re: shifting of alignment for Little Creek crossing);
 - l. Accession number 20161026-5020 (Bouldin); and
 - m. Accession numbers 20161222-5041 and 20161222-5118 (Besa).
 - n. Accession number 20160829-5096 and 20161223-5008 (Chasnoff) (request subsequently added by Commission Staff).

Response:

- a. See Attachment DR4 General 3a.
- b. See Attachment DR4 General 3b1 (response to USGS). Mountain Valley expects to file responses to the other agency letters by February 23, 2017.
- c. Mountain Valley expects to file a response by February 23, 2017.

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- d. Mountain Valley expects to file a response by February 23, 2017.
- e. See Attachment DR4 General 3e.
- f. See Attachment DR4 General 3f.
- g. See Attachment DR4 General 3g.
- h. See Attachment DR4 General 3h.
- i. See Attachment DR4 General 3i.
- j. See Attachment DR4 General 3j.
- k. See Attachment DR4 General 3k-1 for the response to Accession number 20161223-5090. Mountain Valley also created a map of the Teels Creek and Little Creek area showing the Historical Migration Zone from the Scour Analysis and is included as Attachment DR4 General 3k-2.
- l. See Attachment DR4 General 3l.
- m. See Attachment DR4 General 3m, which addresses both letters.
- n. See Attachment DR4 General 3n.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: February 17, 2017

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4. Address the comments provided by the following individuals during the FERC public sessions for the draft EIS:
 - a. November 2, 2016 – Rocky Mount, VA: Ginger Smithers; and
 - b. November 3, 2016 – Roanoke, VA: Martin Morrison.

Response:

- a. In the DEIS, Commission Staff recommended that Mountain Valley adopt a variation to move the pipeline farther away from the Sunshine Valley School. Subsequent to the DEIS, Mountain Valley incorporated the Sunshine Valley School Minor Route Variation into its October 2016 Proposed Route. The landowner's parcel is adjacent to the Sunshine Valley School. The landowner's requested route change would move the pipeline closer to the Sunshine Valley School, which would be contrary to Commission Staff's recommendation in the DEIS. In addition, Mountain Valley has attempted to meet on site with surveyors and other professionals to review concerns but have been denied access.
- b. Martin Morrison owns two properties that are crossed by Access Road MVP-MN-277.02 in the October 2016 Proposed Route. Parcel VA-RO-5786 was surveyed for cultural resources on October 22, 2016 and resulted in no significant findings. Mountain Valley has not conducted civil surveys on the properties. In addition, wetlands surveys have not yet been conducted, however, Mountain Valley will not fill in the referenced pond.

Respondent: Kevin Wagner
Position: Land Director
Phone Number: 304-627-6431
Date: February 9, 2017

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5. Based on Mountain Valley's October 14, 2016 filing with the FERC, identify any new yards or access roads that would be necessary to accommodate the proposed route changes. For each new yard indicate in tabular format the milepost (MP), county/state, acres, vegetation, current land use, and data on environmental resources (waterbodies, wetlands, special status species, cultural resources, etc.) derived from surveys. For any new access roads present similar data, and indicate if it would be a temporary or permanent road.

Response:

Mountain Valley's October 2016 Proposed Route included new access roads, but not new yards. On October 20, 2016, Mountain Valley filed revised DEIS tables, figures, and appendices to reflect the October 2016 Proposed Route. In Appendix E-1 of that filing, Mountain Valley indicated the new access roads in red. Mountain Valley included certain attributes of the new access roads in that table and accounted for other attributes, including environmental resources, in the remainder of the revised DEIS tables and figures.

Respondent: John Uhrin
Position: Construction Director
Phone Number: 724-873-3497
Date: February 17, 2017

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6. File the results of environmental surveys for all pipeline route changes filed with the FERC by Mountain Valley on October 14, 2016, unless the route modification falls within the previous environmental survey corridor, or the data was previously provided in the public docket.

Response:

The response to Cultural Resources, Question 8, includes the filing dates of all cultural resources reports filed with FERC to date. Mountain Valley will continue to file addendum reports with the FERC as they are completed.

Wetland reports will be included as part of Mountain Valley's COE permit applications. Mountain Valley submitted the COE permit applications to the Pittsburgh and Huntington Districts on February 17, 2017 and expects to submit to the Norfolk District by March 1, 2017.

As stated in Mountain Valley's response to Threatened and Endangered and Special Status Species, Question 4, outstanding reports for 2016/2017 species surveys as well as communications with the respective federal and state agencies have been included as Attachment DR4 RTE 4 (PRIVILEGED). As stated in the response to Threatened & Endangered, Question 4, DEIS section 4.7.1.1 and DEIS Recommendation 41 incorrectly lists the Ellett Valley Millipede as a federally listed species. The Ellett Valley Millipede is correctly identified on DEIS page 4-159 as a non-listed species of concern. As such, surveys for Ellett Valley millipedes have not been conducted.

Attachment DR4 General 6 includes wetland and RTE survey reports for the crossing on National Park Service lands as well as the wetland report for the Jefferson National Forest.

Respondent: Ricky Myers
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7. While the draft EIS recommended that prior to construction Mountain Valley should provide the results of all environmental surveys for areas that would be affected by cathodic protection, we are now requesting that these data be provided in response to this environmental information request (EIR).

Response:

The status of environmental surveys completed for cathodic protection ground beds are included in Attachment DR4 General 7. See response to General, Question 6, for status of surveys filed with FERC.

Respondent: Ricky Myers
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Water Resources

1. Clarify whether or not the October 2016 revised proposed pipeline route would cross any state-designated aquifers. If so, provide their MP locations, and outline measures that would avoid, minimize, or mitigation project impacts on those aquifer resources.

Response:

There are no state-designated aquifers in the Project area in the state of Virginia. In addition, no state-designated aquifers or groundwater management areas are present in West Virginia based on a search of related government websites. As documented in Section 4.3.1 of the draft EIS, there are no designated sole source aquifers in West Virginia and the nearest designated sole source aquifer in Virginia is located over 100 miles from the Project area.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 9, 2017

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Water Resources

2. Provide a table of septic systems within 150 feet of construction workspaces (by MP/county/state). Explain how Mountain Valley would avoid, minimize, or mitigate impacts from construction activities in close vicinity to existing septic systems.

Response:

During the land notification phase of the Project, Mountain Valley sent notices to landowners requesting certain information regarding their properties. Mountain Valley's land agents discussed with landowners whether septic systems would be located within the limit-of-disturbance. Attachment DR4 Water Resources 2 lists septic systems that landowners have identified to Mountain Valley that are within the limit-of-disturbance. In addition, Mountain Valley contacted all of the counties along the pipeline right-of-way to request mapping of any existing or planned septic systems along the Project corridor, but such information is not available in a public database.

Mountain Valley has worked with property owners to avoid and minimize any impacts to existing septic systems that are known. During construction activity, Mountain Valley will notify the property owners prior to entry of their property. At that time, Mountain Valley will inquire about any unknown obstructions in the pipeline right-of-way including any septic systems that were not previously identified. If there are septic systems or any portion of one, Mountain Valley will work with the property owner to locate the system and possibly do a minor pipeline shift within the existing right-of-way or identify other options. In addition, timber mats can be placed over the system to avoid damage to existing septic tile.

If during construction Mountain Valley damages an unidentified septic system, Mountain Valley will assess the situation, make all required notifications, and repair the system as appropriate.

Respondent: Kevin Wagner
Position: Land Director
Phone Number: 304-627-6431
Date: February 9, 2017

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Water Resources

3. While the draft EIS recommended that prior to construction Mountain Valley should provide the location of all water wells, springs, and swallets within 150 feet of construction workspaces (500 feet in karst), we are now requesting that these data be provided in response to this EIR. Revise table 4.3.1-2 of the draft EIS based on survey data conducted to date along the currently proposed pipeline route. For areas that have not been surveyed, use publically available sources such as the West Virginia Geological and Economic Survey's 1986 publication, the Springs of West Virginia. Volume V-6A 1986 (associated geographic information system [GIS] data are available at West Virginia GIS Technical Center), and Mercer, Monroe, and Summers Counties by David B. Reger, Assistant Geologist, West Virginia Geological Survey 1926. Provide a site-specific justification for any missing drinking water sources.

Response:

Attachment DR4 Water Resources 3 includes revised table 4.3.1-2 of the draft EIS that incorporates the latest field survey data collected for the October 2016 Proposed Route, and from review of other sources. All known publically available sources of information have been reviewed to identify springs and swallets; and water supplies in the area of the Project route.

The West Virginia Geological and Economic Survey's 1986 publication, the Springs of West Virginia, was also reviewed to update the table. It is noted that this publication is included in the draft EIS table references as a source of information: McColluch, 1986. However, the nearest spring mapped via this publication, as confirmed by the West Virginia GIS Technical Center (February 2017), is located more than 1,000 feet from the Project workspace. The West Virginia GIS Technical Center electronic GIS data available for direct public download only includes springs with 100 gallons per minute or more estimated production.

The publication "Mercer, Monroe, and Summers Counties by David B. Reger, Assistant Geologist, West Virginia Geological Survey 1926" was reviewed. This publication is a series of maps and does not contain information regarding spring or swallet locations.

Additional publications reviewed included: Aqueous geochemistry of springs along Peters Mountain in Monroe County, WV, Brian G. Richards Department of Geology and Geography, Morgantown, WV, 2006; and Dean, S. and B. Kulander, May 1992, Geological Investigation of Gap Mills Spring Area, Monroe County, West Virginia. No

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springs or swallets that were not previously identified (as reported in the draft EIS and per the latest route update), were identified from these publications.

It is important to note that the tables and discussion presented in the draft EIS regarding locations of water sources (springs, wells, intakes) and karst features (e.g., swallets for this discussion) are based primarily on desktop review of publically available data, and where property access was granted by the owner on direct field observation or civil survey. There is very limited, and in most areas no, publicly available data for private wells and springs in West Virginia and Virginia.

In order to provide a more robust assessment of water supplies along the entire proposed alignment, Mountain Valley is currently conducting direct property owner outreach for all parcels along the entire proposed alignment within 150 feet (at a minimum 500 feet in karst terrain) to request property-specific data directly from the property owner on location and characteristics of water sources, and to request permission to conduct pre-construction water quality and quantity sampling. Mountain Valley is also working directly with public water suppliers located within three miles of a waterbody crossing, or within a HUC-10 watershed traversed by the proposed alignment. These efforts are detailed in Mountain Valley's *Water Supply Identification and Testing Plan*.

With this information and direct outreach to the water supply owners, Mountain Valley can address their concerns on a site-specific, case-by-case basis in ways that will effectively minimize negative impacts to water supplies.

Respondent: Ricky Myers
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Water Resources

4. Provide by MP potential well yield ranges for the aquifers that would be crossed by the currently proposed pipeline route in West Virginia; based on publically available data, such as in the Ground-Water Hydrology of the Upper New River Basin, West Virginia (compiled by R.A. Shultz, U.S. Geological Survey 1984).

Response:

Mountain Valley revised Table 4.3.1-1 to include well yield ranges based on publicly available aquifer information from multiple sources which are listed in the table notes. The revised table is included as Attachment DR4 Water Resources 4. As stated in the table notes, well yields can vary greatly depending on local geologic conditions, well depth, casing interval, and other factors. For example, two wells located in the same general vicinity could be cased in different aquifer intervals and have substantially different yields.

Respondent: Ricky Myers
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Water Resources

5. In response to stakeholder comments, revise the *Water Resources Identification and Testing Plan* to include more details on the mechanism for determining compensation if a landowner's water source is impacted during construction and/or operation of the MVP.

Response:

Mountain Valley believes that the potential for impacts to private water supplies and springs is negligible. However, if a claim is made by a water supply owner, then a thorough investigation of the alleged impact will follow standard hydrologic investigative processes. This will include a review of the timing of the claim relative to the construction schedule, detailed interview with the landowner, mechanical evaluation of the water system, possible resampling and analysis of the supply, performance of a hydrogeologic assessment, and other pertinent evaluations. Because each water supply system and hydrogeologic setting is unique, the only means to establish a clear link between a water supply quality or quantity issue and Project activities is through a comprehensive evaluation.

If Mountain Valley determines that the impact was related to its pipeline construction, then the investigations described above will provide valuable information concerning the appropriate remedies. Restoration of a water supply could include:

- temporary supplied water until the water quality returns to baseline;
- connection to secondary on-site sources, if available; and/or
- temporary treatment to establish baseline quality (or better).

If the hydrogeologic assessment indicates that a long term solution is needed, Mountain Valley would provide the following as appropriate to restore water quality and quantity to pre-construction conditions:

- a permanent treatment system; or
- a new on-site source (new water well); or
- a combination of source replacement and treatment options.

Mountain Valley has revised the *Water Resources Identification and Testing Plan* to include this information. A copy of the revised plan is included as Attachment DR4 Water Resources 5.

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Respondent: Shawn Posey

Position: Senior Vice President – Engineering and Construction

Phone Number: 412-395-3931

Date: February 9, 2017

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Water Resources

6. Table 4.3.1-2 (Springs and Swallets Identified within 500 feet of the Mountain Valley Project Construction Work Area – updated October 2016) shows an unnamed spring located within the bounds of proposed access road MVP-SU198 at MP 161.3. Describe impacts that may occur to the spring as a result of the use and modifications to the access road, and the use of the additional temporary workspace at the confluence of MVP-SU198 and the pipeline right-of-way. Discuss the potential for alternatives that would avoid or reduce impacts on the spring (e.g., the use of access road MVP-SU199 instead of MVP-SU198).

Response:

As listed in Table 4.3.1-2, the unnamed spring located within the bounds of proposed access road MVP-SU198 at MP 161.3 is a hillside seep that flows through a culvert under an existing logging road.

There is the potential that the spring may be temporarily impacted by use of the access road as a result of sediment wash from the road. However, because it is an existing road, Mountain Valley does not expect that its use of the existing road as an access road would have any substantial incremental effect on the spring.

As part of the pre-construction testing at this spring, Mountain Valley will evaluate the local watershed and if deemed necessary may adjust the access road within the limits of the right-of-way, below the spring, to provide additional buffer and effectively avoid potential impacts.

Respondent: Ricky Myers
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Phone Number: 724-873-3640
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7. There are inconsistencies between revised table 4.3.1-2 and Appendix L (Karst Features Identified within 0.25 mile of the Mountain Valley Project – updated October 2016). For example, Appendix L shows springs within 0.25 mile of construction workspace at MP 192.0 and MP 202.7, but these are not shown in table 4.3.1-2. Update table 4.3.1-2 and Appendix L, as needed, to reflect all known springs and swallets within 500 feet of MVP construction workspaces.

Response:

Table 4.3.1-2 of the draft EIS was revised to include available information on springs located within 150 feet (500 feet in karst) of construction areas, and is provided as Attachment DR4 Water Resources 3. The spring referenced in Appendix L at MP 192.0 was added to Table 4.3.1-2. Two springs in the vicinity of MP 202.7 are not included in Table 4.3.1-2 because they are more than 300 feet from a construction workspace (and one is more than 0.25-mile) and are not in karst terrain.

Respondent: Ricky Myers
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Phone Number: 724-873-3640
Date: February 17, 2017

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Water Resources

8. Provide additional information about the Lafayette Church Property identified in table 4.3.1-3 as a site with potential for contaminated groundwater within 200 feet of the MVP pipeline, including the source of potential contamination, the pollutants of concern, the date on which the case was closed, and the circumstances that facilitated the closure (e.g., permit compliance, successful cleanup, etc.).

Response:

Based on a conversation with Robert Howard of the Virginia Department of Environmental Quality on February 2, 2017, the site involved the removal of a heating oil tank at a residence where some leakage of heating oil was evident. The opening of the case was reported on May 6, 2013, and the Lafayette Church Property site was closed on September 13, 2013. The state closes these types of sites per “risk-based” requirements and makes a determination of closure in cases where the contamination would not adversely affect potential receptors. Mr. Howard also stated that heating oil tanks at residences number in the tens of thousands in the state and that migration of heating oil into groundwater is much less likely than other types of petroleum products. Therefore, the potential that the Project might encounter contaminated soil or groundwater from this site is very unlikely.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 9, 2017

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Water Resources

9. The number of waterbodies that would be crossed by the MVP in table 4.3.2-2 (Number of Waterbody Crossings for the Mountain Valley Project and the Equitrans Project – updated October 2016) does not match the number of waterbody crossings in Appendix F-1 (Waterbodies Crossed by the MVP - updated October 2016). For example, table 4.3.2-2 shows that 781 minor waterbody crossings would be required, but Appendix F-1 shows 899. Revise the tables to show the correct number of waterbody crossings, by flow type and FERC size classification.

Response:

The October 2016 Table 4.3.2-2 and Appendix Table F-1 present different information. Table 4.3.2-2 lists each waterbody crossed by the Project. Table F-1 identifies in greater detail project components that affect each waterbody, and in numerous instances more than one project component affects the same waterbody at the same location. Therefore, the number of entries in Table F-1 cannot be used to count the number of waterbodies crossed by the Project.

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Water Resources

10. List the waterbody crossings, by MP/county, for which the West Virginia Department of Environmental Quality (WVDEQ) would require consultations under its Natural Streams Preservation Act, as indicated in table 1.5-1 (Major Environmental Permits, Licenses, Approvals, and Consultations Applicable to the Proposed Projects – updated October 2016). Provide anticipated dates for the start and completion of these consultations. In addition, provide the anticipated submittal date to the WVDEQ of a Section 402 Clean Water Act National Pollution Discharge Elimination System Hydrostatic Test Discharge Permit application.

Response:

The following waterbodies are protected under the Natural Streams Preservation Act of West Virginia: Greenbrier River from its confluence with Knapps Creek to its confluence with the New River; Anthony Creek from its headwaters to its confluence with the Greenbrier River; Cranberry River from its headwaters to its confluence with the Gauley River; Birch River from the Cora Brown bridge in Nicholas County to the confluence of the river with the Elk River; and New River from its confluence with the Gauley River to its confluence with the Greenbrier River. Of these waterbodies, only the Greenbrier River is crossed by the Project at MP 171.4 in Summers County.

A West Virginia Natural Streams Preservation Act application was submitted to the West Virginia Department of Environmental Protection (WVDEP) on January 27, 2017 for the Greenbrier River crossing. Consultations with the WVDEP on this issue began in Fall 2016 and will conclude after the scheduled public meetings in March 2017. It is anticipated that the Hydrostatic Test Discharge Permit Applications will be submitted to WVDEP in April 2017.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 9, 2017

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Water Resources

11. Resolve the following apparent discrepancies between the table 4.3.2-8 (Waterbodies Crossed by the Mountain Valley Project in Areas of Shallow Bedrock – updated October 2016) and revised Appendix F-1:
 - a. Appendix F-1 shows that waterbody S-A5a (UNT to Fallen Timber Run) would be crossed at MP 2.3, while table 4.3.2-8 shows the crossing at MP 2.2;
 - b. Table 4.3.2-8 shows crossings of Right Fork Holly Creek and Barbecue Run, while Appendix F-1 only shows crossings of unnamed tributaries of these waterbodies; and
 - c. Table F-1 shows several crossings of waterbodies that are presumably in areas of shallow bedrock based on the locations at which they would be crossed (e.g., Crooked Run [MP 63.0] and Little Knawl Creek [MP 70.0], Elliott Run [MP 74.8], Little Kanawha River [MP 74.8]), but they are not included in table 4.3.2-8.

Response:

- a. Table 4.3.2-8 has been revised to correct the MP of S-A5a to MP 2.3, and is provided as Attachment DR4 Water Resources 11a.
- b. Table 4.3.2-8 has been updated and corrected to resolve inconsistencies between Table 4.3.2-8 and Appendix F-1. The updated version of Appendix F-1 is provided as Attachment DR4 Water Resources 11b. Appendix F-1 shows a crossing of Right Fork Holly Creek and crossings of both Barbecue Run and an unnamed tributary of Barbecue Run.
- c. Although Crooked Run, Little Knawl Creek, and Elliot Run are listed in Appendix F-1 as waterbody crossings, these crossings are not listed in Table 4.3.2-8 because they are not crossed in an area of shallow bedrock. Little Kanawha River and an unnamed tributary of Elliot Run are listed in both tables.

Respondent: Ricky Myers
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Water Resources

12. There are several inconsistencies between information provided in table 4.3.2-11 (Proposed Waterbody Crossings in the Jefferson National Forest for the Mountain Valley Project - updated October 2016) and revised Appendix F-1. For example Appendix F-1 shows that UNT to Clendennin Creek would be crossed at MP 199.8, while table 4.3.2-11 shows the crossing at 197.8. Update the tables to reflect the correct waterbody IDs, number of crossings, and crossing locations.

Response:

The discrepancies are located along an access road area; and the inconsistencies are related to overlapping areas of the access road and the pipeline workspace. Table 4.3.2-11 has been revised to provide the correct MP locations and to match Appendix F-1. See Attachment DR4 Water Resources 12.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: February 17, 2017

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Water Resources

13. For the revised Vertical Scour and Lateral Channel Erosion Analyses (filed October 14, 2016), provide the following information:
- a. The channel slope value that was used to estimate a D50 value at each proposed intermediate waterbody crossing. In addition, provide the distance upstream and downstream that was used to determine the channel slope value at each crossing;
 - b. Additional details of the analysis performed to determine bedrock depths at the intermediate waterbody crossings. Specify the data inputs and sources used in a step-by-step manner (i.e. a flow chart);
 - c. Specify the exact methods and timing of how bedrock depths would be verified during construction, the approval flow to determine the depth of cover, and how this information would be reported to FERC;
 - d. Should Mountain Valley use an armoring layer at a waterbody crossing to mitigate for potential scour, provide the depth to which the armoring layer would be installed as well as distances up and downstream of the pipeline crossing;
 - e. In Appendix A, the proposed pipeline burial depth for the crossing of UNT to Bottom Creek at MP 240.8 is 1.7 feet. Indicate how MVP determined that this depth of cover complies with 49 CFR 192.327. Revise Appendix A, as appropriate, to reflect the correct pipeline burial depth; and
 - f. In Appendix A, the proposed pipeline burial depth is listed as, “3 (4 if Navigable Waterbody) for several waterbodies that are not identified in project documentation as being navigable waters under Section 10 of the Rivers and Harbors Act or as having been ‘studied for Section 10 status but official determinations have not yet been made.’ Clarify these apparent discrepancies.

Response Submitted February 9, 2017:

- a. Mountain Valley has provided a table as Attachment DR4 Water Resources 13a with the channel slope values that were used to estimate a D50 for each proposed intermediate waterbody crossing. Channel slope estimates were calculated using points approximately 1,000 feet upstream and downstream of each proposed pipeline crossing. These distances were used to filter

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noise (i.e., pool/riffle features, nick points, large boulders, etc.) in the longitudinal profile of the stream.

- b. The flow chart is provided as Attachment DR4 Water Resources 13b.
- c. Mountain Valley expects to submit a response by February 16, 2017.
- d. Mountain Valley expects to submit a response by February 16, 2017.
- e. The updated Vertical Scour and Lateral Channel Erosion Analyses with the correct burial depth is provided as Attachment DR4 Water Resources 13e.
- f. An updated Table 5-1 is included in the updated Vertical Scour and Lateral Channel Erosion Analyses in Attachment DR4 Water Resources 13e.

The updated “Mitigation ID A” states that waterbodies with estimated scour depths shallower than 2.25 feet will be installed per 49 CFR 192.327. If there is an instance in which the waterbody does not have an official determination of its navigability, it will be buried with a minimum 4-foot depth of cover. The previous listing of “3 (4 if Navigable Waterbody)” (which has been revised in the report to list “3 or 4”) for the proposed pipeline burial depth column of Appendix A does not indicate that all waterbodies with it are navigable.

For example, Jonnikin Creek (MP 284.8) has an estimated scour depth of 1.6 feet and is not a navigable waterbody. It will be buried at a 3-foot depth. The Elk River (MP 87.3) has an estimated scour depth of 0.1 feet and is navigable, and thus, will be buried at a 4-foot depth. Both would have “3 or 4” in their respective proposed pipeline burial depth column.

Supplemental Response Submitted February 16, 2017:

- c. Mountain Valley will determine the stream crossing’s planned mitigation measure as a first step. If the stream’s scour is to be mitigated by a planned depth of cover (as taken from the Vertical Scour and Lateral Channel Erosion Analyses) no additional reporting is required. However, if its scour is to be mitigated by bedrock depth, more steps are necessary.

Within the excavated trench, the pipeline contractor will perform one or more exploratory digs to determine bedrock depth in consultation with the on-site Geotechnical Inspector. The burial depth would comply with 49 CFR 192.327 requirements. Both the stream crossing bedrock depth and final depth of cover will be included in the construction status report filed with the Commission.

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- d. Mountain Valley will determine - on a case by case basis - the required armoring layer depth and the distances upstream/downstream of the pipeline crossing to which the armoring layer will be installed. Mountain Valley expects to determine these requirements by utilizing the U.S. Army Corp of Engineers method (as described in Engineering Manual No. 1110-2-1607) and the Federal Highway Administration method (as described in Hydraulic Engineering Circular No. 11) while additionally consulting with FERC.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: February 17, 2017

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14. Provide the location for crossings by the proposed pipeline (by MP/county/state) of all first-order streams. Explain the measures that Mountain Valley would implement to avoid, minimize, or mitigate project impacts at these stream crossing locations.

Response:

Attachment DR4 Water Resources 14 provides the locations of ephemeral/intermittent streams that originate within the designated 300-foot wetland survey corridor or limit of disturbance (LOD) and maintains first order status within the LOD. Mountain Valley avoided first-order streams to the extent practicable during the routing process. Streams will be restored to original contours and impacts will be minimized by utilizing the state-approved erosion and sediment control plans, the FERC Plan and Procedures, the state-approved stormwater management plans, and best management practices.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 9, 2017

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Water Resources

15. For table 4.3.2-12 (Mountain Valley Pipeline Locations Paralleling Waterbodies within 15 Feet – updated October 2016), address the following comments:
- a. Confirm whether or not route surveys were done along the proposed waterbody crossing MP 245.4 (UNT to Mill Creek). If surveys are complete, revise the site-specific justification to reflect the survey findings; and
 - b. The proposed project route parallels waterbody S-L35 (Riley Branch) near MP 124.8, but this is not reported in table 4.3.2-12. Clarify this apparent discrepancy.

Response:

- a. There are two waterbodies crossed near MP 245.4. Both of these waterbodies are an UNT to Mill Creek. S-Y8 is at MP 245.4 and S-Y9 is slightly to the north. Both were surveyed on July 14, 2015. The site-specific justification for inserting into table 4.3.2-12 is below:

State/ County	Waterbody Name	MP	Distance to Route (feet)	Acres Within 15 feet of Pipeline	Site Specific Justification
Virginia					
Roanoke	UNT/Mill Creek	245.4	10.7	0.002	Pipeline is routed to avoid impacts to inhabited residences.

- b. The identified waterbody, actually near MP 124.7, should have been included in table 4.3.2.12. The information for inserting this waterbody into table 4.3.2.12 is below:

State/ County	Waterbody Name	MP	Distance to Route (feet)	Acres Within 15 feet of Pipeline	Site Specific Justification
West Virginia					

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Nicholas	S-L35 (Riley Branch)	124.7	10	0.34	Pipeline is routed to follow contours in this location and to allow for perpendicular crossings of this same waterbody on either side of the identified segment.
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Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 9, 2017

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Water Resources

16. Table 4.1.1-9 (Flood Zone and Class of Pipe Crossed by the Mountain Valley Project –updated October 2016) shows a crossing of Rocky Creek at MP 287.2. However, Appendix F-1 does not include a crossing of Rocky Creek (only unnamed tributaries of Rocky Creek are listed). Clarify the apparent discrepancy.

Response:

Table 4.1.1-9 has been updated to reflect that the Project does not cross Rocky Creek itself, only its tributaries. See Attachment DR4 Water Resources 16.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: February 17, 2017

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Water Resources

17. Address the following apparent discrepancies between the revised Appendix F-1 and the October 2016 alignment sheets:
- a. The waterbody crossed at MP 1.3 is named S-J66 (unnamed tributary [UNT] to North Fork Fishing Creek) in Appendix F-1 but appears as both S-J66 and S-A4 in the revised alignment sheets (see Attachment C_01_MVP Wetzel County Alignment Sheets-1 and Attachment C_01_MVP Access Road Detail Sheets_Aerial-1, respectively); and
 - b. Appendix F-1 shows waterbody S-L35 as being crossed one time for a total of 4.2 feet. However, the October 2016 alignment sheets depict several crossings of this waterbody, which would presumably result in a greater total crossing length.

Response:

- a. The stream name S-A4 is a remnant of an earlier naming convention and this segment of stream is now combined with waterbody S-J66. The waterbody location as shown on the alignment sheet is correct.
- b. Appendix F-1 is correct and waterbody S-L35 is crossed one time by the pipeline centerline. The pipeline crossing length is correct as reported in the table. The other impacts to waterbody S-L35 are for other Project disturbance areas, not the actual pipeline crossing.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: February 17, 2017

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Water Resources

18. There are inconsistencies between revised Appendix F-1 and the Open Water land use impacts shown in table 4.8.1-1 (Land Use Types Affected by Construction and Operation of the Mountain Valley Project and the Equitrans Expansion Project – updated October 2016). For example, table 4.8.1-1 shows there would be 0.0 acre of construction impacts to Open Water due to access roads, while Appendix F-1 shows there would be 0.7 acres of temporary impacts to waterbodies due to access roads. Clarify this apparent discrepancy, and update the table(s) to reflect accurate acreages of impacts to waterbodies.

Response:

Appendix F-1 and table 4.8.1-1 are based on different data sources and are used for different purposes. In table 4.8.1-1 “open water” is a land use category from the National Land Cover Database, which does not coincide with the mapped or field delineated water resources listed in Appendix F-1.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: February 17, 2017

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Water Resources

19. Revise Appendix F tables to provide the length of pipeline crossing for all waterbodies. Provide a site-specific reason for any missing information.

Response:

The pipeline crossing lengths are accurately reported in Appendix F-1. There are instances where waterbodies would be impacted by the construction workspace but where the pipeline itself would not actually cross the waterbody. In these instances, there is no pipeline crossing length indicated in Appendix F, but appropriate acreage impacts are included.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: February 17, 2017

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Water Resources

20. Since the draft EIS was issued, Mountain Valley revised Appendix F to indicate that temporary fill would be used in waterbodies. Provide site-specific plans, including details regarding materials to be used and installation and removal methods for the use of temporary fill in waterbodies. Include a detailed analysis of all reasonable alternatives to the use of temporary fill in waterbodies. Indicate if a modification to the permit application with the COE is needed.

Response:

As defined by the COE, “temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. After construction, temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations.” Temporary fill does not include soil.

Temporary fill will be placed as necessary within streams that cannot be easily spanned and may need either instream supports or culvert placement. Crossing details for the placement of fill within waterbodies is included as Attachment DR4 Water Resources 20. Stream crossings will be completed in the following manner:

1. All material, including spill kits, E&S BMPs (such as turbidity curtains, timber mats, compost filter socks, belted silt fences, etc.), pipes, water pumps, secondary containment units, and fittings shall be placed on site before starting the installation;
2. Install temporary equipment bridge, bypass hose, flume, pump, or cofferdam as described in stream crossing details around the work area;
3. Dewater work area utilizing pump water filter bags. Where possible, excavation will be from the top of the stream bank. Stockpile stream bed material separately from other soils to be used during stream restoration;
4. Install trench plugs, pipe, and backfill;
5. Stabilize channel excavation and stream banks prior to redirecting stream flow. Stockpiled stream bed material will be the last material restored in the stream channel; and
6. Remove bypass hose, flume, pump, and temporary dam as needed.

Stream crossing applications, which would include temporary fill, have been submitted to state and federal agencies with jurisdiction over these resources. There will be no long term impacts for the use of temporary fill as a result of the use of Best Management

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Practices and restoring waterbody contours to pre-existing conditions. No revisions to the state or federal permits due to temporary fill are anticipated.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 9, 2017

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Water Resources

21. In response to comments on the draft EIS, provide a discussion of flash floods in the project area during the Summer of 2016. Identify by MP/county/state areas along the currently proposed pipeline route that may be susceptible to flash flooding in the case of heavy rainfall events. Outline measures that Mountain Valley would implement to avoid, minimize, or mitigate impacts from flash floods; especially in areas of steep slopes during construction.

Response:

Although the June 2016 event was a thousand-year event, Mountain Valley has plans in place in the event of flash floods. The following outline details the measures that Mountain Valley will implement to avoid, minimize, or mitigate impacts from flash floods. Mountain Valley plans to monitor the National Weather Service for advanced warning of such an occurrence. In the event that a significant rain event is predicted, Mountain Valley will take the following precautions regarding personnel:

- all personnel would be notified through communication via cell phones and/or radio;
- all personnel would be evacuated to safe locations; and
- all personnel will be accounted for post-muster.

To the maximum extent practicable, Mountain Valley will take the following precautions:

- construction equipment will be moved out of the 100 year flood plains;
- construction materials will be moved out of the 100 year flood plains;
- all environmental controls will be checked and stabilized as necessary; and
- all environmental controls will be monitored during the rain event.

In addition, Mountain Valley's construction procedures include provisions to install each stream crossing as quickly as possible utilizing dedicated crews, which would mitigate the effects of construction in flood-prone areas.

As part of Mountain Valley's Erosion and Sedimentation Plans, which were submitted to the Commission on February 26, 2016, a provision is included for installing trench breakers and water bars along the pipeline. These devices are meant to inhibit water flowing along the pipeline and right of way and are placed at closer spacing in steeper terrain.

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In order to protect the pipeline post installation, Mountain Valley has performed a scour analysis for the potential of both vertical and lateral stream scour. The review included a stream-by-stream analysis to mitigate future impacts to the facility during flood events.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 9, 2017

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Water Resources

22. In response to comments received on the draft EIS, clearly identify each inter-basin transfer of water that may or would occur associated with the withdrawal and discharge of hydrostatic test water. Describe potential impacts on aquatic resources resulting from the inter-basin transfer of water. Outline measures that Mountain Valley would implement during hydrostatic testing to avoid, minimize, or mitigate such impacts. Provide the status of any required agency coordination and permitting for hydrostatic testing not previously documented in this docket.

Response:

Mountain Valley has revised DEIS Table 4.3.2-10 to reflect the current withdrawal and discharge information. The revised table is included as Attachment DR4 Water Resources 22. The majority of withdrawals are from Municipal sources and not basins. Mountain Valley does not expect any inter-basin transfers of water associated with hydrostatic testing. In the event inter-basin transfers are necessary, Mountain Valley will adhere to the sampling, testing, and discharge requirements associated with West Virginia and Virginia's regulations.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: February 9, 2017

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Water Resources

23. As previously requested by the COE, provide site-specific details regarding the three open-cut wet waterbody crossings (Gauley River, Elk River, and Greenbrier River). Include details regarding specific equipment to be used, placement of the equipment (on the waterbody bank or inside the waterbody), construction methods, blasting, possible use of a temporary instream work platform (such as temporary placement of riprap), disposition of spoil (stored within or relayed to outside the waterbody), seasonal timing, expected duration of instream construction, measures used to minimize mobilization of sediment and turbidity to areas downstream of the work area, and details regarding methods to return the waterbody to pre-construction elevations.

Response:

Mountain Valley has revised the crossing method at these three crossings to be open-cut dry. See also the response to Fisheries, Question 1.

Respondent: John Uhrin
Position: Construction Director
Phone Number: 724-873-3497
Date: February 9, 2017

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Water Resources

24. As previously requested by the COE, provide additional information regarding the extent and characteristics of streams and wetlands at the site located at 37.673207 Latitude, -80.729775 Longitude.

Response:

Stream L4 is at this specific location. The surveys from this area are documented in the Aquatic Resource Reports that will be filed with the COE as part of the Nationwide Permit.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 9, 2017

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Water Resources

25. Provide the anticipated submittal date for updated COE permit applications.

Response:

Mountain Valley anticipates submitting the COE permit applications to the Pittsburgh and Huntington Districts by February 17, 2017 and to the Norfolk District by March 1, 2017.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 9, 2017

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Water Resources

26. Provide the sedimentation analysis requested by the FS in its letter dated December 20, 2016.

Response:

Mountain Valley expects to submit the sedimentation analysis to the FS by the end of February 2017. Mountain Valley intends to review the analysis with the FS prior to submitting the document. Mountain Valley will file a copy with FERC.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 17, 2017

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Wetlands

1. Table 4.3.3-2 currently shows that there are no operational (permanent) impacts to wetlands by access roads, which is inconsistent with the 0.8 acres of permanent wetland impacts by access roads currently indicated in Appendix G-1. Resolve the apparent discrepancy and update tables accordingly.

Response:

The column headings and footnotes in Table 4.3.3-2 have been updated to reflect total temporary and permanent impacts. In Table 4.3.3-2 and Appendix G-1, temporary impacts include impacts to palustrine emergent (PEM) wetlands located in temporary workspaces and within the pipeline easement/ROW temporary and permanent limits of disturbance. Permanent impacts include impacts to PEM wetlands located within the permanent limits of disturbance for aboveground facilities and access roads. Permanent impacts include impacts to palustrine scrub/shrub (PSS) and palustrine forested (PFO) wetlands located within the pipeline easements temporary and permanent limits of disturbance. Appendix G-1 identified 0.8 (0.78, rounded) acres of permanent wetland impacts by access roads as separate column from the permanent impacts (7.11 acres) for wetlands located in other permanent limits of disturbance for a sum of 7.89 acres, which matches the total in Table 4.3.3-2 of Total Permanent Impacts to Wetlands (acres) column. A new column (Summary Table Category) was added to Appendix G-1 to identify the category in Table 4.3.3-2 of each project component.

See Attachments DR4 Wetlands 1a (Table 4.3.3-2) and 1b (Appendix G-1).

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 17, 2017

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Wetlands

2. Clarify the following on Appendix G-1:
 - a. Footnote #6 refers only to PEM wetlands being temporarily impacted, which is not consistent with what is indicated within that column (for example, W-A20-PFO with 0.0187 acres of construction impact only);
 - b. Footnote #7 refers only to PSS and PFO wetlands being permanently impacted and permanent impacts being only due to conversion, which is not consistent with what is indicated within that column (for example, PEM wetland W-A1a has 0.0003 acres of operational impact within the permanent pipeline right-of-way).
 - c. Footnote #6 on Appendix G-1 states that construction impacts include those within the permanent right-of-way; there are several instances where operational impacts are larger than construction impacts, which should not be the case if construction impacts include the permanent right-of-way as indicated by the footnotes (for example, W-A27-PEM – should be 0.0497 acres of PEM wetland impacts during construction, 0.0337 acres of which would be permanently impacted during pipeline operation; therefore, the 0.0337 acres of operation impact in the permanent pipeline right-of-way should be included as a construction impact as well; another example, W-K25 – should be 0.055 acres of PEM wetland impacts during construction, 0.0312 acres of which would be permanently impacted during pipeline operation; therefore, the 0.0312 acres of operation impact in the permanent pipeline right-of-way should be included as a construction impact as well). Revise the table to present “Construction Impacts” as combined construction and operational impacts.
 - d. Define ‘span’ as a crossing method in Appendix G-1.

Response:

- a. Footnote 6 in Appendix G-1 has been revised to state “Temporary impacts include impacts to PEM wetlands located in temporary workspaces as well as within the pipeline easement’s temporary and permanent limits of disturbance.” The column identifying temporary impacts has been revised from “Construction” to “Temporary”. A revised Table G-1 is provided as Attachment DR4 Wetlands 1b.

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- b. Footnote 7 in Appendix G-1 has been revised to “Permanent Impacts include impacts to PEM wetlands located within the permanent limit of disturbance for aboveground facilities and access roads. Permanent impacts include impacts to PSS and PFO wetlands located within the pipeline easement’s temporary and permanent limits of disturbance.” A revised Table G-1 is included as Attachment DR4 Wetlands 1b.
- c. The Appendix Table G-1 column headers have been revised to include “Temporary” and “Permanent” to more accurately label the impacts calculated. A revised Table G-1 is included as Attachment DR4 Wetlands 1b.
- d. Span means the resource would be spanned with timber mats, portable bridge, or similar structure to allow access by construction equipment without directly impacting the resource. A footnote defining “span” has been added to the revised Appendix G-1 table.

Respondent: Ricky Myers
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Phone Number: 724-873-3640
Date: February 17, 2017

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Wetlands

3. Footnote 'c' on table 4.3.3-2 states that "construction impacts include those within the operational footprint," inconsistent as in Table G-1 as outlined in the above comment #3(c).

Response:

Footnote 'c' on table 4.3.3-2 has been updated to Footnote 'd'. Footnote 'c' and 'd' have been clarified to describe the wetland impact calculations to be consistent with Appendix G-1. See Attachment DR4 Wetlands 1a.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: February 17, 2017

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Wetlands

4. There is an apparent discrepancy between table 4.4.2-1 and table 4.3.3-2. Understanding that wetland numbers in table 4.4.2-1 are derived from a database, there still seems to be a large disparity between the stated 42.4 acres of wetland construction impacts and 14.3 acres of wetland operational impacts, which includes the 0.8 acres of operational impacts from access roads, and table 4.3.3-2 which states 24.41 acres of wetland construction impacts and 12.14 acres of wetland operational impacts, which does not include the 0.8 acres of operational impacts from access roads. Resolve the apparent discrepancy or provide an explanation for the discrepancy.

Response:

The two tables present different datasets. Table 4.4.2-1 data was derived from publically available online resources (National Land Cover Dataset). National datasets provide a basis for vegetation and ecological communities and are not intended to provide precise acreage calculations on a project-specific level. Table 4.3.3-2 summaries data that was collected in the field. These two datasets cannot be rectified.

The 0.8 acres of operational impacts has been included in the permanent impacts column on Table 4.3.3-2 (see the response to Wetlands, Question 1).

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: February 17, 2017

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Wetlands

5. Provide information concerning hydrological resources requested by the FS in its letter dated December 20, 2016.

Response:

Mountain Valley expects to file a response by February 23, 2017.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 17, 2017

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Fisheries

1. While the draft EIS recommended that prior to construction Mountain Valley should provide the results of quantitative modeling for turbidity and sedimentation associated with wet open-cut crossings of the Elk River, Gauley River, and Greenbrier River, in response to comments, including from the EPA, Mountain Valley should now provide the analyses in response to this EIR. The analysis should include the duration, extent, and magnitude of turbidity levels and assess the potential impacts on resident biota. In addition, assess whether a dry open-cut crossings would be feasible at the Elk, Gauley, and Greenbrier Rivers, including the possible use of coffer dams to allow construction on one-half of the waterbody crossing at a time.

Response:

Mountain Valley has revised the proposed crossing method for the Elk River, Gauley River, and Greenbrier River to be open-cut dry. Because the dry-ditch crossing technique significantly reduces the amount of sedimentation and turbidity, a quantitative analysis is not necessary.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 9, 2017

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Fisheries

2. In response to comments on the draft EIS (see accession number 20161222-5487), would Mountain Valley agree to pursue natural streambank restoration in Virginia in coordination with VDGIF and VDEQ similar to Mountain Valley's existing commitment for such restoration in West Virginia in coordination with WVDEQ? Further, indicate whether Mountain Valley would be willing to implement the subject seasonal restrictions upon hydrostatic test water discharges into the two designated trout streams.

Response:

Mountain Valley will restore stream channels disturbed during construction to preconstruction contours and conditions as required by the state and federal permits. Mountain Valley will continue to work with the WVDEP, VADEQ, and other agencies during permit review to incorporate their proposed stream and wetland monitoring and enhanced restoration practices.

All hydrostatic test water discharges will be conducted in upland areas with no discharge occurring directly to any waterbody, wetland, or other sensitive resources including designated trout waters. As such, impacts from hydrostatic test discharges are not anticipated and seasonal restrictions should not apply.

Respondent: John Uhrin
Position: Construction Director
Phone Number: 724-873-3497
Date: February 17, 2017

**Mountain Valley Pipeline, LLC
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Vegetation

1. Provide a list of commercially gathered (non-timber) forest products, such as ginseng and mushrooms, and other plants used for local medicinal purposes in the project area, as mentioned by Mary Scott in her December 20, 2016 letter to the FERC (accession number 20161220-5024), and identify the locations of these plants along the MVP pipeline route (by MP). Indicate the measures that Mountain Valley would implement to avoid, reduce, or mitigate impacts to these plants.

Response:

Based on a review of publicly-available information, commercially gathered (non-timber) forest products in the Project area include bloodroot, stoneroot, American ginseng, goldenseal, black cohosh, blue cohosh, pawpaw, ramps (wild leeks), chicken of the woods, morels, oyster mushrooms, and chanterelles. Mountain Valley does not include commercially gathered forest products in its surveys. As such, the locations of any such plants by MP are not available. Mountain Valley will work with individual landowners to assess any impacts on gathered products on that landowner's property.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: February 17, 2017

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Vegetation

2. In response to comments on the draft EIS, suggesting that two years of monitoring for invasive species would not be sufficient, indicate whether Mountain Valley would agree to increase the duration of invasive plant species monitoring within the maintained right-of-way and temporary workspaces after initiation of service.

Response:

Mountain Valley has committed to conducting non-native invasive species monitoring and management for at least two growing seasons and in accordance with applicable Federal and State recommendations. Should a more proven and practical monitoring plan be required, Mountain Valley will abide by the invasive species monitoring requirements following Project in-service.

Respondent: Shawn Posey

Position: Senior Vice President – Engineering and Construction

Phone Number: 412-395-3931

Date: February 17, 2017

**Mountain Valley Pipeline, LLC
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Vegetation

3. Provide the results of surveys (or a schedule for filing reports) for the following rare plants in Virginia as requested by the Virginia Department of Conservation and Recreation (VADCR):
 - Chestnut lip fern (Ellison Quad);
 - Piedmont fameflower (Boone's Mill Quad); and
 - Weak bluegrass and Prairie dropseed (Penhook Quad).

Response:

The four species mentioned are identified by the VADCR in a letter dated April 6, 2015 as potentially occurring in conservation sites adjacent to the proposed Project. This includes the Elliston Glades Conservation Site, Grassy Hill Conservation Site, and Jacks Creek Conservation Site. The Project avoids all four of these conservation sites; therefore, no surveys were conducted for these areas. The species were not observed during other plant surveys in Virginia.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 9, 2017

**Mountain Valley Pipeline, LLC
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Vegetation

4. A number of commentors, including the Commonwealth of Virginia, requested mitigation for direct, indirect, fragmentation, and edge effects resulting from forest clearing. Discuss measures that Mountain Valley could adopt that would minimize or mitigate for forest impacts.

Response:

Mountain Valley is currently working with state agencies in developing a more detailed evaluation of the Project for specific impacts of forest clearing. The evaluation being reviewed, specifically with the Commonwealth of Virginia, will better quantify the impacts to ecological values resulting from direct and indirect impacts, and determine any losses of ecological values. The evaluation data will be used for discussions with state agencies to come to an agreement on mitigation measures to minimize and offset any losses of ecological resources. Mountain Valley will continue to consult with state and federal agencies on mitigation measures.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: February 17, 2017

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Vegetation

5. Provide the protocol Mountain Valley would follow in circumstances where unforeseen additional tree clearing during construction may be required between April 1 and July 31.

Response:

In the event unforeseen additional tree clearing is needed during construction between April 1 and July 31, Mountain Valley will coordinate directly with the FWS to determine the best course of action.

Respondent: John Uhrin
Position: Construction Director
Phone Number: 724-873-3497
Date: February 9, 2017

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Wildlife

1. Attachment A of Mountain Valley's October 27, 2016 filing states that tree clearing during the migratory bird nesting season may apply to areas in addition to those identified in the draft EIS (e.g., between MPs 23.2 and 25.9, MPs 71.3 and 73.4, MPs 108.3 and 115.6, and MPs 297.0 and 301.0). However, the updated Migratory Bird Conservation Plan filed on October 20, 2016 indicates that tree clearing during the migratory bird nesting season may be limited to the single area between MP 103.4 and 104.4. Resolve the apparent discrepancy and identify the specific areas Mountain Valley intends to clear trees within the migratory bird nesting season. Also provide a detailed explanation and rationale, beyond citing schedule requirements, for why tree clearing in these areas cannot be conducted outside of the migratory bird nesting season. Revise the Migratory Bird Conservation Plan, as necessary, to address comments from EPA and Virginia Department of Environmental Quality (see accession numbers (20161221-5087 and 20161222-5394)).

Response:

Mountain Valley is updating the Migratory Bird Conservation Plan. Along with updating this plan, Mountain Valley is preparing a tree clearing schedule that minimizes impacts to numerous sensitive species and habitats, which includes consideration of multiple time of year restrictions. Specific consideration is being given to loggerhead shrike and other ground nesting birds in hay fields and scrub-shrub areas, forest dwelling migratory birds, nine different time of year restrictions for aquatic species, and bat winter and summer habitat.

These species and habitats are located throughout the Project area, and while some time of year restrictions are complementary, others are in conflict. At this time, Mountain Valley is proposing to use multiple clearing and construction crews in order to expedite these activities into as short of a period of time as possible. However, collectively, when all of the time of year restrictions are overlapped for all of the species and habitats considered, and given the topography of the Project, it is unlikely that Mountain Valley will be able to clear the entire Project between 16 November and 31 March. Mountain Valley is continuing to refine the clearing and construction schedule to minimize impacts to special status species and their habitats during their most vulnerable timeframes. Impacts that may occur during the migratory bird nesting season will be discussed in the updated Migratory Bird Conservation Plan, which will also include avoidance, minimization, and restoration measures. The updated plan will also address comments from EPA, Virginia Department of Environmental Quality and other consulting agencies.

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Mountain Valley plans to submit the updated Migratory Bird Conservation Plan in March 2017.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: February 17, 2017

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Threatened and Endangered and Special Status Species

1. File a public version of the Biological Evaluation for the Jefferson National Forest (JNF). Include an updated discussion, and any correspondence with the FS not previously filed, outlining the location and mitigation measures proposed for the population of Rock Skullcap identified during plant surveys in the JNF.

Response:

Mountain Valley expects to file an updated Biological Evaluation by the end of February 2017. Mountain Valley intends to review the Biological Evaluation with the FS prior to submitting the document. Mountain Valley will file public and privileged versions with FERC.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: February 17, 2017

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Threatened and Endangered and Special Status Species

2. Provide an assessment as to whether Locally Rare Species and Management Indicator Species would be expected to increase, decrease, or be unaffected by the MVP, based on anticipated changes to habitat resulting from the project.

Response:

National Forests (in this case Jefferson National Forest [JNF]) identifies species under various designations based on their current status, distribution, and management goals. Sensitive species are designated by the Regional Forester as species with range-wide viability concerns. Locally rare species are designated by each Forest due to concerns about their viability, specifically on Forest property. Management Indicator Species (MIS) are identified to assist with Forest planning as forest management activities may have an impact on species populations.

Two Forest sensitive species were identified during surveys on JNF: rock skullcap (*Scutellaria saxatilis*) and American barberry (*Berberis canadensis*). One population of rock skullcap is located along the proposed alignment and Pocahontas Road. This population spans approximately 3.58 acres; however, only an approximate 1.94 acres are within the construction right-of-way (ROW) as the proposed alignment was shifted in this area to avoid the majority of the population. Additionally, the construction footprint of the pipeline ROW in this area was reduced to 75 feet to minimize impacts to this species. The population identified will be decreased in this area. A second population of rock skullcap was identified on an abandoned alternative and will not be impacted by the proposed alignment. Four locations of American barberry were also observed but they are along an abandoned alternative and will not be impacted by the proposed alignment.

No locally rare plant or avian species were identified during surveys along the proposed alignment on JNF; however, an Allegheny woodrat (*Neotoma magister*) midden was identified on a crossing route variation in Giles County, Virginia. No individuals were observed and no signs of the species were identified along the proposed alignment. Most locally rare species will be unaffected by the Project as any potential impacts would be temporary. Additionally, some locally rare species (such as the Olympia marble) may increase due to the creation of suitable habitat (openings and rights-of-way).

There are thirteen MIS listed for the JNF. Biologist observations were documented during survey efforts on the JNF. Numerous sightings and calls were documented for the pileated woodpecker (*Hylatomus pileatus*), ovenbird (*Seiurus aurocapilla*), chestnut-sided warbler (*Setophaga pensylvanica*), Acadian flycatcher (*Empidonax virescens*), hooded warbler (*Setophaga citrina*), scarlet tanager (*Piranga olivacea*), pine warbler

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(*Setophaga pinus*), eastern towhee (*Pipilo erythrophthalmus*), and eastern wild turkey (*Meleagris gallopavo*). Additionally, numerous sightings (and signs – scat/tracks) of white-tailed deer (*Odocoileus virginianus*) and black bear (*Ursus americanus*) were recorded. The remaining two MIS (wild trout and Peaks of Otter salamander [*Plethodon hubrichti*]) were not observed.

Activities associated with the construction of the pipeline may result in the creation of foraging or nesting areas that could benefit MIS such as the white-tailed deer and eastern wild turkey. Locally rare species and MIS that may be negatively affected by the Project within the JNF include the pileated woodpecker and rock skullcap; however, these negative impacts are expected to be temporary.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 9, 2017

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Threatened and Endangered and Special Status Species

3. Provide information regarding the effects of the MVP on little brown bats and tri-colored bats, and document communications with the Virginia Department of Game and Inland Fisheries (VDGIF) about impacts on those species and the development of measures to avoid, reduce, or mitigate those impacts.

Response:

Correspondence with VDGIF is provided as Attachment DR4 RTE 3 and Mountain Valley will continue to coordinate with VDGIF regarding avoidance and minimization strategies for all state listed species, including the tri-colored and little brown bats.

According to VDGIF's online *Little Brown Bat and Tri-colored Bat Winter Habitat and Roosts Application* (accessed January 27, 2017), the Project does not cross within 0.5 mile of any known little brown or tri-colored bat hibernaculum. However, the Project does cross within the larger 5-mile protective buffer associated with Tawney's Cave, a cave known to host both federal and state listed bat species. Mountain Valley will adhere to FWS's time-of-year restriction for tree clearing, which is from April 1 – November 15, within 5 miles of Tawney's Cave, unless continued discussions with USFWS results in an alternative restriction.

In the event that little brown or tri-colored roosts are identified within the Project right-of-way, Mountain Valley will adhere to the following conservation measure recommended by the VDGIF to avoid take of individuals:

Between June 1 and July 31, implement a 150-foot radius buffer zone with the following restrictions: no tree removal, prescribed fire, or land disturbance within the buffer zone. This will protect the known roost tree(s) and foraging habitat close to the roost tree during the maternity season. Tree removal and prescribed fire are permitted outside these dates.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 9, 2017

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Threatened and Endangered and Special Status Species

4. File any outstanding 2016/2017 species survey reports, including, but not limited to, survey reports for bog turtles, bald and golden eagles, and Ellett Valley millipedes in the vicinity of the MVP. Document communications with the VDGIF and the U.S. Fish and Wildlife Service (FWS) regarding those surveys, and file the agencies review of the reports.

Response:

Outstanding reports for 2016/2017 species surveys as well as communications with the respective federal and state agencies are included as Attachment DR4 RTE 4 (PRIVILEGED).

The DEIS incorrectly lists the Ellett Valley Millipede as a “federally listed species” subject to Endangered Species Act Section 7 consultation in section 4.7.1.1 and Recommendation 41. The Ellett Valley Millipede is correctly identified on DEIS page 4-159 as a non-listed “species of concern.”

The discussion of the requirements applicable to the Ellett Valley Millipede in DEIS section 4.7.1.1 on pages 4-158 to 4-159 and 4-188, and Recommendation 41, should be clarified and updated. This species is listed by Virginia as “threatened” under state regulation (4 VAC 15-20-130.D) but has no federal Endangered Species Act listing. There is no applicable state or federal consultation or field survey requirement. However, Mountain Valley has engaged in ongoing consultation with VDGIF, VDCR, and other authorities regarding this species and its potential occurrence in Slussers Chapel Cave and Old Mill Cave. In response to concerns expressed about potential impacts to these cave systems, including possible Ellett Valley Millipede habitat, Mountain Valley has revised its route through the area to avoid any potential impact to the caves. Surveys for Ellett Valley millipedes have not been conducted.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 9, 2017

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Threatened and Endangered and Special Status Species

5. In response to comments on the draft DEIS, indicate whether the MVP would affect the candy darter or diamond 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 documented in the docket.

Response:

Diamond Darter. Mountain Valley is avoiding the distributional range of the diamond darter. Diamond darter (*Crystallaria cincotta*) populations have been reduced in their historical range and are only known to occur in the lower Elk River (Kanawha County) in proximity to its confluence with the Kanawha River in West Virginia. The Project traverses the Elk River upstream and outside of the range of known occurrences of diamond darter. The population of the species occurs more than 180 stream kilometers (112 mi) downstream of the Project and 150 stream kilometers (93 mi) downstream of Sutton Lake. Sutton Lake is a 1,520-acre reservoir on the Elk River that exists between the Project and the species range. The presence of the reservoir inhibits colonization or any potential migration into the vicinity of the Project area. The U.S. Fish and Wildlife Service (USFWS) and West Virginia Department of Natural Resources (WVDNR) completed a Project review for potential impacts to all federally listed species. The diamond darter is a federally endangered species and was not identified during the initial Project review by USFWS or WVDNR or continued coordination with these agencies as a species that could be potentially impacted by the Project.

Candy Darter. The distributional range of the candy darter (*Etheostoma osburni*) includes the New River drainage in both West Virginia and Virginia (Chipps et al. 1993, Jenkins and Burkhead 1994). In West Virginia, the species is distributed widely throughout the Greenbrier, Bluestone, and Gauley river systems and known from Fayette, Greenbrier, Nicholas, Pocahontas, Mercer, Summers, Monroe, and Webster counties (Stauffer et al. 1995, Welsh et al. 2006). In Virginia, the species is historically known from Bland, Giles, Pulaski, and Wythe counties in Virginia and from Reed, Big Walker, Little Stony, and Sinking creeks, along with Spruce and Pine runs, though no recent records exist (Burkhead and Jenkins 1991). Mountain Valley crosses streams in both states potentially supporting candy darter including the Gauley and Greenbrier rivers in West Virginia and Stony Creek in Giles County, Virginia. In Virginia, Mountain Valley's proposed crossing of Stony Creek is downstream of the gypsum plant in Kimbalton and downstream of the known candy darter population. A 1994 study indicated that the species was uncommon in Stony Creek but found above the gypsum plant in Kimbalton

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and therefore upstream of the MVP crossing (Jenkins and Burkhead 1994). Extensive surveys in 1995 in Stony Creek demonstrated that the species was distributed throughout the upper portion of Stony Creek upstream of the gypsum plant at Kimbalton (Leftwich et al. 1996). Additionally, as stated by the U.S. Forest Service George Washington & Jefferson National Forests (2002), candy darters “are commonly found in Big Stony Creek, perhaps solely above the gypsum plant at Kimbalton.” (Big Stony Creek and Stony Creek are synonymous.) Lastly, Mountain Valley’s consultations with VDGIF confirmed that literature reports that candy darters in Stony Creek are (generally) more common upstream than downstream.

The biggest threat to the candy darter from Project development and operations include sedimentation and temporary destabilization/removal of localized substrates during instream construction. Mountain Valley plans to cross these streams using dry-ditch (in contrast to wet-ditch) construction methods to minimize potential downstream sedimentation impacts. Additionally, the implementation of erosion and sediment control measures and adherence to time of year restrictions are expected to minimize any temporary effects to the candy darter from sedimentation. In addition, Mountain Valley has agreed to accommodate the Virginia Department of Game and Inland Fisheries’ request to conduct fish removals at all perennial stream crossings in Virginia, immediately prior to instream dewatering.

Copies of communications with applicable resource agencies are provided as Attachment DR4 RTE 5.

Literature Cited:

Burkhead, N. M. and R. E. Jenkins. 1991. Fishes. Pages 321-409 in Virginia’s Endangered Species (K. Terwilliger, coordinator). McDonald and Woodward Publishing Company, Blacksburg, Virginia.

Chipps, S. R., W. B. Perry, and S. A. Perry. 1993. Status and distribution of *Phenacobius teretulus*, *Etheostoma osburni*, and “*Rhinichthys bowersi*” in the Monongahela National Forest, West Virginia. *Virginia Journal of Science* 44:47-58.

Jenkins, R. E. and N. M. Burkhead. 1994. The freshwater fishes of Virginia. American Fisheries Society, Bethesda, Maryland.

Leftwich, K. N., C. A. Dolloff, and M. K. Underwood. 1996. The Candy Darter (*Etheostoma osburni*) in Stony Creek, George Washington - Jefferson National Forest, Virginia: trout predation, distribution, and habitat associations. U.S. Department of Agriculture, Forest Service, Center for Aquatic Technology Transfer, Department of Fisheries and Wildlife Sciences, Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

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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.

U.S. Forest Service George Washington & Jefferson National Forests. 2002. AEP 765kv Transmission Line, American Electric Power Transmission Line Construction, Jacksons Ferry, Virginia to Oceana, West Virginia. Supplemental Draft Environmental Impact Statement, Volume 3. Pg. 3.9-11

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: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 17, 2017

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Threatened and Endangered and Special Status Species

6. Document that informal consultations have been completed between Mountain Valley and the FWS regarding threatened and endangered species. File copies of the FWS review of Mountain Valley's draft Biological Assessment, not previously placed into the public docket.

Response:

Documentation of informal consultations between Mountain Valley and the U.S. Fish and Wildlife Service, including their review of the Mountain Valley draft Biological Assessment, is included in Attachment DR4 RTE 6.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 9, 2017

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Cultural Resources

1. Refresh outreach with Indian tribes by documenting recent communications between Mountain Valley and tribes listed on table 4.10.4-2 in the draft EIS and recording their responses to the project. In particular, document conversations with the Tribal Historic Preservation Office of the Seneca Nation of New York, which indicated to the FERC staff that they would like to review copies of cultural resources reports.

Response:

A revised Table 4.10.4-1 is included as Attachment DR4 Cultural Resources 1.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: February 17, 2017

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Cultural Resources

2. Document that post-application (after October 2015) Mountain Valley contacted local governments, Certified Local Governments, and local historical or archaeological organizations in West Virginia as requested by the West Virginia State Historic Preservation Office (SHPO), and file copies of correspondence with those local governments and organizations not previously in the public record.

Response:

Mountain Valley has conducted outreach efforts with local governments in West Virginia following the October 2015 application filing. A table of correspondence with local officials is included as Attachment DR4 Cultural Resources 2a. Mountain Valley also sent letters on three occasions to the Summers County Certified Local Government. Two letters were filed on the docket with Mountain Valley's July 12, 2016 Responses to Data Requests issued June 28, 2016. The third letter to Summers County Certified Local Government is included as Attachment DR4 Cultural Resources 2b. Mountain Valley sent Project updates to all of the local governments listed in Attachment DR4 Cultural Resources 2a. Copies of the Project updates are provided in Attachment DR4 Cultural Resources 2c.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: February 17, 2017

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Cultural Resources

3. Update cultural resources data up to January 2017 in tabular format. This should include:
 - a. Miles of proposed pipeline route inventoried by Mountain Valley by county by the end of January 2017 for each county (and percent);
 - b. Number of shovel probes excavated by Mountain Valley's consultants in each county (positive/negative) during surveys (excluding site-specific evaluative testing);
 - c. Inventories completed by Mountain Valley by the end of January 2017 at all proposed ATWS, aboveground facilities, staging areas, yards, cathodic protection beds, and new or to-be-improved access roads (listed by county);
 - d. A list of all pipeline route segments, aboveground facilities, and ancillary work areas where inventories have not yet been completed (include an anticipated completion date);
 - e. All archaeological sites identified by the end of January 2017 within the direct area of potential effect (APE – 150 feet from centerline), listed by county/state, site number, cultural type, recorder company, date of recordation, MP, distance (in feet) from centerline, and evaluation; and
 - f. All historic architectural sites identified by the end of January 2017 within the direct APE, listed by county/state, site number, cultural type, recorder company, date of recordation, MP, distance (in feet) from centerline, and evaluation.

Response:

Updates to cultural resources data up to January 2017 are provided in several new attachments as described below.

- a. Attachment DR4 Cultural Resources 3a summarizes the miles of proposed pipeline route surveyed for cultural resources by County.
- b. Attachment DR4 Cultural Resources 3b summarizes the number of Phase I shovel tests conducted by county (positive/negative) during surveys.
- c. Attachment DR4 Cultural Resources 3c presents by county cultural resources surveys completed by the end of January 2017 at all proposed

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ATWS, aboveground facilities, staging areas, yards, cathodic protection beds, and new or to-be-improved access roads.

- d. Attachment DR4 Cultural Resources 3d presents all pipeline route segments, aboveground facilities, and ancillary work areas where cultural resources surveys have not yet been completed.
- e. Attachment DR4 Cultural Resources 3e (PRIVILEGED) presents a list of all archaeological sites identified by the end of January 2017 within the direct APE.
- f. Attachment DR4 Cultural Resources 3f presents all historic architectural sites identified by the end of January 2017 within the direct APE.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 17, 2017

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Cultural Resources

4. Revise the “Master List of Identified Historic Resources,” filed on October 27, 2016, to include all sites recorded through January 2017, and add columns for 1) MP location; 2) distance (in feet) to the pipeline centerline; and 3) assessment of project effects.

Response:

A Master List of Identified Historic Resources for the Mountain Valley Pipeline Project is attached as Attachment DR4 Cultural Resources 4.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 17, 2017

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Cultural Resources

5. Clarify how many previously recorded (prior to the initiation of the FERC’s environment review of the MVP in October 2014) archaeological sites and historic architectural structures were relocated by Mountain Valley’s cultural resources consultants within the direct APE during surveys conducted between 2014 and 2017. Provide a list of all the previously recorded resources relocated by Mountain Valley’s consultants by MP, county/state, site number, cultural type, recorder and date of recordation, distance (in feet) from pipeline, and SHPO evaluation.

Response:

The requested information is summarized in the table below.

Archaeological Sites and Historic Architectural Structures Re-Located by Mountain Valley’s Cultural Resources Consultants within the Direct Effects APE							
a/							
MP	County	Site Number	Cultural Type	Original ly Reco rded in State Files	Relocate d by MVP Con sulta nt (Date)	Distanc e (ft) From Centerl ine	SHPO Evaluation
West Virginia							
174.2	Summers	46SU78	Prehistor ic site	12/11/1 980	SEARC H (1/6/201 6)	0	Recommen ding not eligible – SHPO pending
171.6	Summers	46SU14 7	Prehistor ic site	4/5/198 1	SEARC H (1/6/201 6)	0	T(2)Unevalu ated T(1) Not Eligible
167.0	Summers	46SU15 3	Prehistor ic site	4/17/19 81	SEARC H (1/6/201 6)	0	Not Eligible

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Archaeological Sites and Historic Architectural Structures Re-Located by Mountain Valley's Cultural Resources Consultants within the Direct Effects APE							
<u>a/</u>							
MP	County	Site Number	Cultural Type	Original ly Record ed in State Files	Relocate d by MVP Consulta nt (Date)	Distanc e (ft) From Centerl ine	SHPO Evaluation
162.9	Summers	46SU526	Prehistor ic site	No Data	SEARC H (1/6/2016)	3,100	Not Eligible
114.7	Nicholas	NI-0025-0064	Historic residence	1/29/2002	Tetra Tech (10/2/2015)	100	Not Eligible
66.9	Braxton	NR 98001430	Turnpike	2/15/1998	Tetra Tech (9/15/2015)	0	Listed <u>a/</u>
59.8	Lewis	LE-0021-002	Historic residence	6/12/2000	Tetra Tech (7/6/2015)	1,330	Not Eligible
53.1	Lewis	NR 85001583	Church and cemetery	2/4/1985	Tetra Tech (7/6/2015)	95	Listed <u>a/</u>
11.2	Harrison	HS-0495-006	Historic residence	6/16/2002	Tetra Tech (6/15/2015)	160	Not Eligible

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Archaeological Sites and Historic Architectural Structures Re-Located by Mountain Valley's Cultural Resources Consultants within the Direct Effects APE							
<u>a/</u>							
MP	County	Site Number	Cultural Type	Original ly Recorded in State Files	Relocate d by MVP Consulta nt (Date)	Distanc e (ft) From Centerl ine	SHPO Evaluation
0.7	Wetzel	46WZ79	Historic site	1/19/2011.	Tetra Tech (6/18/2015)	0	Not eligible
Virginia							
298.7	Pittsylvania	071-5311	Historic residence	July 2011	New South (June 2015)	895	Not eligible
298.4	Pittsylvania	118-5286	Historic District	Nov. 2007	New South (June 2015)	0	Not eligible
259.0	Franklin	44FR0191	Prehistor ic site	1987	Tetra Tech (5/31/2016)	0	Recommend ed not eligible--- SHPO Pending
255.7	Franklin	033-0389	Historic farmstea d	1995	New South (June 2016)	0	Eligible <u>a/</u>
246.3	Franklin and Roanoke	080-5161	Historic district	Aug. 2007	New South (June 2015)	0	Eligible <u>a/</u>

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<u>a/</u>							
MP	County	Site Number	Cultural Type	Original ly Record ed in State Files	Relocate d by MVP Consulta nt (Date)	Distanc e (ft) From Centerl ine	SHPO Evaluation
235.4	Montgomery	44MY0054	Prehistoric site	4/11/1979	SEARCH (9/21/2106)	0	Not evaluated Avoided
221.9	Montgomery	060-0333	Historic residence	April 1986	New South (June 2016)	50	Not Eligible
226.3 — 228.4	Montgomery	060-0574	Rural Historic District	1998	New South (June 2016)	0	Listed <u>a/</u>
210.8 — 217.0	Giles	035-0412	Rural Historic District	2000	New South (Feb. 2016)	0	Listed <u>a/</u>
211.0	Giles	035-0005	Covered bridge	No Data	New South (Feb. 2016)	300	Eligible <u>a/</u>
206.7 — 207.4	Giles	035-0018	Historic farm	1996	New South (Feb. 2016)	0	Eligible <u>a/</u>

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Archaeological Sites and Historic Architectural Structures Re-Located by Mountain Valley’s Cultural Resources Consultants within the Direct Effects APE <u>a/</u>							
MP	County	Site Number	Cultural Type	Original ly Record ed in State Files	Relocate d by MVP Consulta nt (Date)	Distanc e (ft) From Centerl ine	SHPO Evaluation
196.3 5	Giles	021- 5012	Appalach ian Trail	2006	New South (Feb. 2016)	0	Eligible <u>b/</u>
<p>Notes:</p> <p>a/ Shading indicates resources addressed in <i>Criteria of Effects Report for the Mountain Valley Pipeline Project, Wetzel, Harrison, Doddridge, Lewis, Braxton, Webster, Nicholas, Greenbrier, Fayette, Summers, and Monroe Counties, West Virginia</i> (Tetra Tech February 2017) or <i>Mountain Valley Pipeline Criteria of Effects – Tasks 1-4 Assessment Reports for Virginia</i> (Tetra Tech February 2017).</p> <p>b/ The Appalachian National Scenic Trail is under the jurisdiction of the U.S. Forest Service (USFS). As per USFS request, Tetra Tech, on behalf of Mountain Valley, performed a Visual Impact Analysis (VIA) which assessed the potential visual impacts of the Project using the visual inventory and assessment methodology developed by the USFS. See <i>Mountain Valley Pipeline Project Appalachian National Scenic Trail Visual Impact Analysis</i> (Tetra Tech 2017).</p>							

Respondent: Megan Neylon
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6. Document that relevant cultural resources reports (for the appropriate counties) were sent by Mountain Valley to all entities that signed confidentiality agreements and requested copies of reports. In particular, document that reports were sent to the following local governments or historical organizations (including citation of the report sent, and date of submittal to each organization for each report):
 - a. Roanoke Valley Preservation Foundation; and
 - b. Roanoke County Board of Supervisors.

Response:

Mountain Valley has provided copies of privileged and confidential cultural resources reports to the entities that have signed confidentiality agreements. Table 6-1 included in Attachment DR4 Cultural Resources 6 lists the counties, report titles, entities to which various confidential reports have been sent, and the dates the reports were sent. Table 6-2 included in Attachment DR4 Cultural Resources 6 lists future reports that will be prepared and anticipated dates future reports will be sent. Mountain Valley will continue to send all confidential reports, as appropriate, to these entities as they are filed with the Commission.

The tables included in Attachment DR4 Cultural Resources 6 highlights reports previously sent to and anticipated to be sent to:

- a. Roanoke Valley Preservation Foundation; and
- b. Roanoke County Board of Supervisors.

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7. Mountain Valley should provide Tunis McElwain and Maury Johnson, individuals who requested copies of cultural resources survey reports in letters dated December 1 and 5, 2016, with an opportunity to sign a confidentiality agreement. If they sign the agreement, document that Mountain Valley sent them copies of the cultural resources survey reports for Webster and Monroe Counties, West Virginia, respectively.

Response:

Mountain Valley has contacted both requesters regarding signing a confidentiality agreement. Copies of the emails are included in Attachment DR4 Cultural Resources 7. Mountain Valley has not received a response from either requester.

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8. File copies of reviews by the respective SHPOs of the following cultural resource investigation 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;
 - b. Clement et al. July 2016, Mountain Valley Pipeline Project, Phase II Archaeological Investigations, Site 46WB407, 46WB414, 46WB416, 46WB433, Webster County, West Virginia;
 - c. Espino et al. November 2016. Addendum I to Volume I, Cultural Resources Survey, Mountain Valley Pipeline Project, Wetzel, Harrison, Doddridge, and Lewis Counties, West Virginia;
 - d. Freedman et al. November 2016. Addendum I to Volume II, Cultural Resources Survey, Mountain Valley Pipeline Project, Braxton and Webster Counties, West Virginia;
 - e. Freedman et al. December 2016. Addendum I to Volume IV, Cultural Resources Survey, Mountain Valley Pipeline Project, Summers and Monroe Counties, West Virginia;
 - f. Reeve et al. November 2016. Mountain Valley Pipeline Project, Phase I Archaeological Investigations, Craig Creek to Brush Mountain Route Survey in Jefferson National Forest, Monroe County, West Virginia, and Giles County, Virginia;
 - g. Reeve et al, November 2016, Mountain Valley Pipeline Project, Phase I Archaeological Investigations in Blue Ridge Parkway, Roanoke and Franklin Counties, Virginia;
 - h. 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;
 - i. 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;

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- j. Reeve et al. December 2016. Mountain Valley Pipeline Project, Phase IB Archaeological Survey Report Addendum 1, Franklin County, Virginia; and
- k. Espino et al. January 2017. Addendum 1 to Volume III, Cultural Resources Survey, Mountain Valley Pipeline Project, Nicholas, Greenbrier, and Fayette Counties, West Virginia.

Response:

- a. Comments filed with FERC (7/18/2016).
- b. Comments filed with FERC (10/27/2016).
- c. Comments filed with FERC (12/22/2016).
- d. Comments filed with FERC (12/22/2016).
- e. Comments received from WVDCH 1/17/2017 (See Attachment DR4 Cultural Resources 8a).
- f. No comments from USFS received to date but will file any response received with FERC upon receipt.
- g. No comments from NPS received to date but will file any response received with FERC upon receipt.
- h. No comments received from VDHR to date but will file any response received with FERC upon receipt.
- i. No comments received from VDHR to date but will file any response received with FERC upon receipt.
- j. No comments received from VDHR to date but will file any response received with FERC upon receipt.
- k. Comments received from WVDCH 2/8/2017 (See Attachment DR4 Cultural Resources 8a).

Attachment DR4 Cultural 8b provides a summary to date of Mountain Valley Cultural Resources Report Submissions and SHPO or Agency Comments. Additional reports are provided as Attachments DR4 Cultural Resources 8c, 8d, 8e, 8f, and 8g (ALL PRIVILEGED).

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9. File the comments of the FS archaeologist on:
 - a. The FS78 Variation route survey report (Reeve et al. September 2016), filed with the FERC on October 27, 2016, and submitted to the JNF on October 10, 2016;
 - b. Craig Creek to Brush Mountain Route Survey in Jefferson National Forest, (Reeve et al. November 2016), and
 - c. The ARPA permit for Phase II testing of sites within the JNF submitted by Search on October 19, 2016 (copy of cover letter filed with the FERC on October 27, 2016). Also, provide the results of the testing, or a schedule for filing that report, together with reviews by the FS and SHPO.

Response:

- a. Mountain Valley has not yet received comments from the FS on the referenced report. When comments are received from the FS, Mountain Valley will file them with the Commission.
- b. Mountain Valley has not yet received comments from the FS on the referenced report. When comments are received from the FS, Mountain Valley will file them with the Commission.
- c. The referenced permit was approved by the FS on January 11, 2017. The signed permit is included as Attachment DR4 Cultural Resources 9c. Phase II fieldwork was initiated in January 2017 and is ongoing. A report is anticipated in March 2017. The report will be provided to the FS and will be filed with the Commission.

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10. File the comments of the National Park Service (NPS) on the Archaeological Investigation of the Blue Ridge Parkway Crossing (Reeve et al. August 2016).

Response:

Mountain Valley has received two comment letters from the NPS on the referenced report and the revision to that report. These letters are included as Attachments DR4 Cultural Resources 10a and 10b.

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11. File the results of Phase II archaeological testing at unevaluated sites along the proposed MVP pipeline route, or a schedule for when the reports would be filed, including for site 46BX114 in Braxton County, sites 46NI1846 and 1847 in Nicholas County, sites 46GB493, 498, 499, 500, 503, 504, 505, and 536 in Greenbrier County, sites 46SU78, 147, 239, 717, 722, and 724 in Summers County, and sites 46ME281 283, 284, 285, and 307 in Monroe County, West Virginia, and sites 44GS226, 227, 229, 230, 231, 232, 235, 236, and 237 in Giles County, site 44RN383 in Roanoke County, and sites 44FR360, 363, 365, 366, 370, 373, and 376 in Franklin County, Virginia, and file the reviews of the reports by the SHPOs.

Response:

A summary of the results of Phase II archaeological testing at the sites specified above as well as submission dates are included in Attachment DR4 Cultural Resources 11a. Please note that the following site numbers from the request were mistyped and have been corrected in Attachment DR4 Cultural Resources 11a: 46NI1846 corrected to 46NI846, 46NI1847 corrected to 46NI847, and 46GB536 corrected to 46GB533. In addition, one site, Site 46NI827 in Nicholas County, West Virginia, not listed in the question, has been included in the table because Phase II archaeological testing was conducted at that site. The results for Braxton County are included as Attachment DR4 Cultural Resources 11b, Giles County as Attachment DR4 Cultural Resources 11c, Franklin County as Attachment DR4 Cultural Resources 11d, Blue Ridge Parkway (Roanoke and Franklin Counties) as Attachment DR4 Cultural Resources 11e, Nicholas and Greenbrier Counties as Attachment DR4 Cultural Resources 11f, and Giles County as Attachment DR4 Cultural Resources 11g (ALL PRIVILEGED).

The eligibility recommendations for Site 46SU147 were considered in the Geomorphological Evaluation of the South Bank of the Greenbrier River Crossing. The Geomorphological Evaluation can be found in Appendix G of Mountain Valley Pipeline Project, Cultural Resources Survey Addendum 1 to Volume IV, Report prepared for Mountain Valley Pipeline LLC. Prepared by SEARCH, Inc (2016). WVDCH concurred with the recommendations of eligibility and avoidance for Site 46SU147 in a letter dated January 17, 2017. WVDCH's letter is included as Attachment DR4 Cultural Resources 8a.

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12. File the results of archival research or other Phase II evaluative investigations at historic architectural standing structures identified along the proposed MVP pipeline route in Virginia as recommended by Mountain Valley's consultants, or file plans to avoid those sites, or a schedule for submitting the research reports or avoidance plans, including for the Berean Baptist Church (35-34) and Warthen House (35-5106) and the proposed Big Stony Creek Rural Historic District (35-5127) in Giles County; Little Hope Primitive Baptist Church (80-580), Unnamed 1900 House (80-488), Elijah Henry House (80-5297) and the WDBJ Television-WSLQ Radio Transmitting Facility (8-5675) in Roanoke County; Norfolk & Southern Railroad (60-5170, 5171, and 5172) in Montgomery County; historic sites 33-5304, 33-5325, 33-5329, 33-5398, and 33-5400 in Franklin County, and file reviews of the reports or plans by the SHPO.

Response:

In a meeting with the VDHR, held January 12, 2016, Mountain Valley agreed to treat all of the potentially NRHP-eligible resources as eligible for purposes of applying Criteria of Effects and in complying with Section 106 of the National Historic Preservation Act. This approach eliminated the need for Phase II architectural surveys which would not be feasible without full access to the subject properties. As such, additional research, which would have been completed as part of the Phase II assessment, was not conducted for the Berean Baptist Church (35-34), Warthen House (35-5106), Big Stony Creek Rural Historic District (35-5127); Little Hope Primitive Baptist Church (80-580), Unnamed 1900 House (80-488), Elijah Henry House (80-5297), WDBJ Television-WSLQ Radio Transmitting Facility (8-5675), Norfolk & Southern Railroad (60-5170, 5171, and 5172), or historic sites 33-5304, 33-5325, 33-5329, 33-5398, and 33-5400.

As per the Methods for Historic Architecture Criteria of Effects Assessment for Virginia (Methods), developed in consultation with and approved by VDHR October 19, 2016, any resources recommended for Phase II study, including the resources listed above, were incorporated into the Master List of Identified Historic Resources for the Criteria of Effects Assessment (Master List). The Master List is included as Attachment DR4 Cultural Resources 4.

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13. File plans to avoid the Sam's Run Historic District (starting at Site 188) in Wetzel County, the Wiseman Residence (Historic Site 4) in Summers County, and Tilley Farmstead (Historic Site 233) in Monroe County, West Virginia; and avoidance plans for sites 46SU725, 739, and 740 in Summers County, West Virginia, and file the SHPO's review of the plans.

Response:

Attachment DR4 Cultural Resources 13 provides an aerial-based map book depicting the avoidance of the Sam's Run Historic District (Historic Site 188) in Wetzel County, the Wiseman Residence (Historic Site 4) in Summers County, and Tilley Farmstead (Historic Site 233) in Monroe County, West Virginia.

The avoidance plans for sites 46SU725, 739, and 740 in Summers County, West Virginia were provided in Addendum I to Volume IV Cultural Resources Survey, Mountain Valley Pipeline Project, Summers and Monroe Counties (Freedman et. al. December 2016). The report was filed with FERC on December 22, 2016 (Accession # 20161222-5442). Comments were received from the West Virginia Division of Culture and History on January 17, 2017 (see Attachment DR4 Cultural Resources 13).

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14. File Treatment Plans or Avoidance Plans for sites 46HS101 in Harrison County and 46LE77 in Lewis County, West Virginia, and the Road Trace at Adlai Jones Farm (35-412-466) in Giles County, and Flora Farm (33-389) in Franklin County, Virginia; and file the SHPOs' review of those plans.

Response:

Sites 46HS101 and 46LE77 were both recommended eligible for listing in the National Register of Historic Places in the report entitled Mountain Valley Pipeline Project, Phase II Archaeological Investigations, Sites 46DO94, 46HS100, 46HS101, 46HS104, 46HS109, 46HS125, and 46LE77, Doddridge, Harrison, and Lewis Counties, West Virginia (Espino et. al June 2016). In both cases the West Virginia Division of Culture and History (WVDCH) concurred that there would be no adverse effect because the Phase II investigations were extensive enough to recover the significant information. The WVDCH comments were filed with FERC July 18, 2016. Since there will be no adverse effects, no Treatment or Avoidance plans are required.

The Adlie Jones Farm (035-0412-0010) road trace (035-0412-0466) was recommended for Phase II study in the report entitled Phase I Reconnaissance Architectural Survey for the Mountain Valley Pipeline, Craig and Giles Counties, Virginia and the Virginia Department of Historic Resources (VDHR) concurred with those recommendations by letter dated May 25, 2016. The results of subsequent research, which included a review of historic USGS quadrangle maps and aerial photographs, did not confirm the presence of a historic-era road in this location. Instead, the research indicated that the alleged road trace is a tractor path or unimproved driveway providing access to the eastern portion of the property. The results of this research were provided to VDHR via email February 1, 2017 along with the recommendation that the Criteria of Effects assessment focus only on the Adlie Jones Farm (035-0412-0010) as a whole and not on the road trace (035-0412-0466), since it does not meet the requirements to be considered individually NRHP-eligible. As such, there is no adverse effect to the road trace and an avoidance plan is not required. This email correspondence is provided as Attachment DR4 Cultural Resources 14a.

An aerial map book depicting avoidance of the Flora Farmstead (033-0389) is included as Attachment DR4 Cultural Resources 14b.

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15. Address the letter from Stephen and Anne Bernard dated September 14, 2016 (accession number 20160919-0013) regarding archaeological site 44FR191. This site was not listed in Appendix 4F of Mountain Valley's application to the FERC and was not described in the Phase 1B archaeological survey of Franklin County, Virginia (Reeve, et al., September 2015). Explain in what filings with the FERC, Mountain Valley has documented that site 44FR191 is within the APE, has been evaluated for eligibility to the National Register of Historic Places (NRHP) with concurrence from the SHPO, document that a testing plan was presented for review, and if testing was conducted at this site file the results and SHPO review.

Response:

Mountain Valley reported in *Mountain Valley Pipeline Project Phase IB Archaeological Survey Report, Addendum I, Franklin County, Virginia* (Tetra Tech 2016) that site 44FR0191, previously recorded in SHPO's V-CRIS database, was within the Mountain Valley Pipeline APE and was potentially eligible for the NRHP. As of February 2, 2017, SHPO has not provided comments.

Phase II evaluation was conducted from August 29 to September 7, 2016. Results of the Phase II evaluation are reported in *Mountain Valley Pipeline Project Phase II Evaluations of Eighteen Sites, Franklin County, Virginia* included as Attachment DR4 Cultural Resources 11d (PRIVILEGED). SHPO has not yet commented on the Phase II report.

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16. Address the letter from Alan O'Hara filed December 12, 2016 (accession number 20161207-0049). Mr. O'Hara claims there are archaeological sites on his land. Indicate if archaeological sites on Mr. O'Hara's land were identified by Mountain Valley's contractor, and provide the reference for where those sites were discussed in cultural resource survey reports previously filed with the FERC. If archaeological sites were not recorded on Mr. O'Hara's property, explain why.

Response:

Mr. Alan O'Hara's property is not within the APE for the Project. The SHPO's V-CRIS database shows no previously identified archaeological sites on Mr. O'Hara's property.

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17. Address the letter from Zane Lawhorn, filed December 20, 2016 (accession number 20161220-5062), with regards to an historic road on the Oak Hill Farm in Monroe County, West Virginia, which he claims would be crossed by the MVP pipeline route. Indicate if this historic road was identified by Mountain Valley's contractor, and provide the reference for where the site was discussed in cultural resource survey reports previously filed with the FERC. If this historic road was not recorded, explain why. Provide the distance (in feet) from the historic road to the boundaries of MVP work areas.

Response:

Mr. Lawhorn indicates in his letter filed December 20, 2016 that the Oak Hill Farm was owned by ancestors of James Gore. The Gore tracts are crossed by Project from MP 188.3-189.2 in Monroe County West Virginia. To date permission has not been granted to survey the Gore tracts. Therefore, no historical structures including the road have been recorded. Mountain Valley will file information with FERC after surveys are completed.

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18. Address the letter from Maury Johnson, dated December 5, 2016 (accession number 20161205-5227), with regards to archaeological sites on his land in Monroe County, West Virginia. Indicate if archaeological sites on Mr. Johnson's land were identified by Mountain Valley's contractor, and provide the reference for where those sites were discussed in cultural resource survey reports previously filed with the FERC. If archaeological sites were not recorded on Mr. Johnson's property, explain why.

Response:

Mountain Valley conducted Phase IB archaeological survey on Maury Johnson's property on October 7, 2015. The survey resulted in the identification of three isolated finds: 46ME295, 46ME293, and 46ME294. Isolated finds by definition are not eligible for inclusion in the NRHP. The results of the Phase I survey were submitted to WVDCH in a report entitled *Mountain Valley Pipeline Project Cultural Resources Survey, Volume IV, Summers and Monroe Counties, West Virginia* (SEARCH February 2016). WVDCH provided concurrence April 4, 2016. WVDCH comments were filed with FERC April 21, 2016.

Respondent: Megan Neylon
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19. Address the letter from Dale Angle, dated December 16, 2016, with regards to archaeological sites on his land in Franklin County, Virginia. Indicate if archaeological sites on Mr. Angle's land were identified by Mountain Valley's contractor, and provide the reference for where those sites were discussed in cultural resource survey reports previously filed with the FERC. If archaeological sites were not recorded on Mr. Angle's property, explain why.

Response:

Attachment DR4 Cultural Resources 19 (PRIVILEGED) provides excerpts, tables, and maps from reports that detail the archaeological investigations on the Angle property and in Franklin County.

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20. Landowners have mentioned that they reside in historic houses located in proximity to the pipeline. Indicate the distance (in feet) between the proposed pipeline and the following houses:
- a. House of Virginia McWharter at 497 Blue Grass Trail, Newport, Virginia built in 1875 (known as Willow Springs);
 - b. House of Mr. Berkley in Pence Springs, West Virginia, on Kenney's Knob, built in 1825;
 - c. House of Rebecca Dameron on Bent Mountain, built in 1865 (see letter filed November 22, 2016);
 - d. Samuel Gwinn Plantation at Old Brick Manor Farm, near Lowell, West Virginia, dating to 1868 (mentioned by David and Jeanne Schumauss in their November 17, 2016 letter);
 - e. Old home sites owned by Tunis McElwain in Webster County, West Virginia; and
 - f. House of Stephen Bernard, built in 1880, in Boone's Mill, Virginia.

Document if these historic houses were recorded and evaluated by Mountain Valley's cultural resources contractor, and provide the site number and report citation. If not recorded, explain why.

Response:

- a. The house of Virginia McWharter is located approximately 1,820 feet from the pipeline centerline and approximately 305 feet from the nearest access road. The Virginia Department of Historic Resources (VDHR) identification number for this structure is 035-0412-0061. This resource was included in the document entitled *Addendum to the Phase I Reconnaissance Architectural Survey for the Mountain Valley Pipeline, Craig and Giles Counties, Virginia: Supplemental Information* (New South Associates 2016).
- b. Insufficient information was provided to find the location of Mr. Berkley's house on Kenney's Knob in Pence Springs, West Virginia, or to measure its distance from the pipeline. Kenney's Knob, the highest point in Summers County, lies approximately 5,000 feet from the pipeline centerline, which is outside the indirect Area of Potential Effect (APE).

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- c. The house of Rebecca Dameron on Bent Mountain is located approximately 1,940 feet from the pipeline centerline, approximately 515 feet from the nearest access road, and approximately 422 feet from the nearest Additional Temporary Workspace (ATWS). The structure had been recorded within V-CRIS as inventory number 080-0487 and is included in New South Associate's report entitled *Phase I Reconnaissance Architectural Survey for the Mountain Valley Pipeline, Roanoke County, Virginia* (New South Associates 2016).
- d. The Samuel Gwinn Plantation at Old Brick Manor Farm, near Lowell, West Virginia, is located approximately 6,691 feet from the current pipeline route. The structure is no longer within the current Project indirect APE.
- e. The McElwain properties referred to in the letter filed by Tunis McElwain (Accession # 20161201-5118) are crossed by the MVP route between MP 97.7 and 98.1 just south of Amos Run and WV Route 28. No historic structures were identified within the direct APE on these properties. As such, the McElwain properties are not identified in the applicable reports.
- f. The house of Stephen Bernard in Boone's Mill, Virginia is located approximately 170 feet from the pipeline centerline and approximately 60 feet from the nearest ATWS. The structure was assigned the identification number 033-5398 by VDHR and New South Associates included the structure in the report entitled *Addendum: Phase I Reconnaissance Architectural Survey for the Mountain Valley Pipeline, Pittsylvania and Franklin County, Virginia* (New South Associates 2016).

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21. Address the Tom King report filed by Matthew Fellerhoff on August 30, 2016 (accession number 20160830-5133). In particular, provide details about the Coles-Terry Rural Historic District in Roanoke County, Virginia, and indicate the distance (in feet) between resources in the District and the pipeline. Provide an assessment of project effects for the Coles-Terry Rural Historic District, including on the rural historic landscape and built environment, and file the SHPO’s review of that assessment.

Response:

The boundaries of Coles-Terry Rural Historic District and the Bent Mountain Rural Historic District overlap, and some resources serve as contributing resources to both districts. Distances between resources within the Coles-Terry Rural Historic District and the pipeline centerline are provided in Table 21 below. A map depicting these resources in relation to the Coles-Terry Rural Historic District, the Bent Mountain Rural Historic District, and the Project is provided as Attachment DR4 Cultural Resources 21a.

Table 21. Resources within the Coles-Terry Rural Historic District				
VDHR ID	Resource Name	Location	Historic District	Distance from Mountain Valley Centerline
Pending - Fire Tower	Fire tower	Honeysuckle Road, Bent Mountain	Coles-Terry Rural	4,142
080-0490	Janet Wynot House, Terry Place, Terry-Coles Cemetery	8701 Poor Mountain Road , Terry Place , Terry-Coles Cemetery	Bent Mountain Rural and Coles-Terry Rural	2,372
Pending - Baker House	Baker House	Poor Mountain Road, Bent Mountain	Bent Mountain Rural and Coles-Terry Rural	3,015

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Pending - Coles Terry's House	Coles Terry's House / Orchard and Barn	Poor Mountain Road, Bent Mountain	Bent Mountain Rural and Coles- Terry Rural	820
080- 5679	Grace Terry Moncure Farm	8701 Poor Mountain Rd, Bent Mountain	Bent Mountain Rural and Coles- Terry Rural	508

Mountain Valley’s Criteria of Effects Assessment for the Bent Mountain Rural Historic District and the Coles-Terry Rural Historic District is ongoing. As requested by the Virginia Department of Historic Resources, Mountain Valley has taken a stepped approach to the tasks necessary to evaluate effect to resources in Virginia. Reports summarizing tasks one, two, and three are provided as Attachment DR4 Cultural Resources 21b and 21c. Mountain Valley submitted Task one to the Virginia Department of Historic Resources on January 9, 2017. Comments on that report were received from the Virginia Department of Historic Resources February 9, 2017 and is included at Attachment DR4 Cultural Resources 21d. Task 4, the final step in the effects analysis, will be provided following receipt of comments from Virginia Department of Historic Resources on the Tasks 2 and 3 Report.

Mr. King asserts that, in the case with Mountain Valley, “effects are judged with reference to specific places within the districts, not with reference to the districts themselves.” However, Mountain Valley’s approach to the Criteria of Effects Assessment, as it relates to these historic districts, involved a systematic analysis of potential direct and indirect project effects to not only the historic built environment, but to also the surrounding historic landscape. In accordance with 36 CFR 800.5(a)(1), this analysis assessed potential effects to the integrity of the historic districts’ setting and accounted for potential effects to elements including cultural character and land use.

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22. Address the comments of the Greater Newport Rural Historic District Committee (GNRHDC) filed with the FERC on October 24, 2016 (accession number 20161024-5068). In particular, focus on table 1 of the GNRHDC letter, listing the resources, their evaluation, and distance in feet to the boundary of work spaces. Given that the October 14, 2016 filing with the FERC by Mountain Valley changed the proposed pipeline route within the Greater Newport Rural Historic District in Giles County, Virginia, provide a table that lists all cultural resources within the indirect APE (0.5 mile from the pipeline) in the Historic District, and their distance (in feet) from the edge of the construction right-of-way and the centerline of the newly proposed route. Also, address the comments of the GNRHDC on the draft EIS, filed December 21, 2016 (accession number 20161221-5365). Provide an assessment of project effects for the Greater Newport Rural Historic District, including on the rural historic landscape and built environment, and file the SHPO's review of that assessment.

Response:

The comments of the Greater Newport Rural Historic District Committee (GNRHDC) in its October 24, 2016 and December 21, 2016 filings with FERC, as well as the information requested above, are addressed in: *Identification of Historic Architectural Resources for the Mountain Valley Pipeline in Virginia: Supplemental Information* (Tetra Tech February 2017) which is provided as Attachment DR4 Cultural Resources 22. It should be noted that GNRHDC's comments submitted December 21, 2016 are a reiteration of its October 24, 2016 filing.

Mountain Valley's Effects Assessment for the Greater Newport Rural Historic District is ongoing. As requested by the Virginia Department of Historic Resources, Mountain Valley has taken a stepped approach to the tasks necessary to evaluate effect to resources in Virginia. Reports summarizing tasks one, two, and three are provided as Attachment DR4 Cultural Resources 21b and 21c. Mountain Valley submitted Task 1 to the Virginia Department of Historic Resources on January 9, 2017. Comments on that report were received from the Virginia Department of Historic Resources February 9, 2017 and is included at Attachment DR4 Cultural Resources 21d. Task 4, the final step in the effects analysis, will be provided following receipt of comments from Virginia Department of Historic Resources on the Tasks 2 and 3 Report. Mountain Valley's approach to the Criteria of Effects Assessment, as it relates to historic districts, involved a systematic analysis of potential direct and indirect project effects to not only the historic built environment, but to also the surrounding historic landscape. In accordance with 36 CFR

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800.5(a)(1), this analysis assessed potential effects to the integrity of the historic districts' setting and accounted for potential effects to elements including cultural character and land use.

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23. Address the letter of Donald Wayne Jones dated December 19, 2016 (accession number 20161219-5105) concerning the Adlai Jones Farm in Giles County, Virginia, and provide a table that lists the historic sites mentioned in his letter, and the distance (in feet) to workspaces and centerline, for:
- a. 1880s ditch;
 - b. Adlai Jones house purchased in 1923;
 - c. William Arkennedy Jones barn;
 - d. Adlai and Everett Jones house dating to 1926;
 - e. Uncle Bub Jones house;
 - f. Denny Jones corn crib;
 - g. Denny Jones house foundation;
 - h. John Jones rock wall fence;
 - i. Camper dwelling at Road Trace;
 - j. Camper dwelling at Billy Spring;
 - k. Slave quarters at Leffell farm;
 - l. Dude Smith dwelling; and
 - m. Fisher cemetery.

Response:

Table 23-1 (included below) provides the distance in feet, from the centerline and from the construction limits of disturbance or nearest workspace, to the resources listed in Mr. Jones' letter.

It should be noted that resources listed as unknown in Table 23-1 could potentially be components of previously recorded historic resources, the Adlai Jones Farm (035-0412-0010), and the Leffel Mansion (035-0412-0011), that were identified in the Mountain Valley Pipeline Phase I Reconnaissance Architectural Report for Craig and Giles Counties (New South Associates 2016). However, the precise locations of some resources listed in Mr. Jones' letter could not be obtained from the public right-of-way during the Phase I architectural survey and were not identified in the direct APE during Phase I archaeological survey. VDHR provided their concurrence regarding the

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recommendations for the Adlai Jones Farm (035-0412-0010) and the Leffel Mansion (035-0412-0011) by letter dated May 25, 2016. Both are primary contributing resources to the Greater Newport Rural Historic District. As such they were included in the “Master List” and are being accounted for in the Criteria of Effects Assessment (see Master List included as Attachment DR4 Cultural Resources 4).

Table 23-1

Distance from Project to Historic Sites Mentioned in Letter of Donald Wayne Jones, Dated December 19, 2016 (Accession Number 20161219-5105)

Item	VDHR ID	Distance from Centerline (feet)	Distance from Construction Limits of Disturbance or Nearest Workspace (feet)
b. Adlai (Adlie) Jones house purchased in 1923	035-0412-0010 <u>a/</u>	363.71	276.13
c. William Arkennedy Jones barn	unknown	unknown	unknown
d. Adlai (Adlie) and Everett Jones house dating to 1926	035-0412-0010 <u>a/</u>	1,791.20	1,703.47
e. Uncle Bub Jones House	022-5040	302.27	264.77
f. Denny Jones corn crib	unknown	unknown	unknown
g. Denny Jones house foundation	022-5040	310.40	272.75
h. John Jones rock wall fence	022-5040	192.35	154.85
i. Camper dwelling at road trace	035-0412--0014	2,711.56	2,155.46
j. Camper dwelling at Billy Spring	unknown	unknown	unknown
k. Slave quarters at Lafelle (Leffel) Farm	035-0412-0011 <u>b/</u>	unknown	unknown
l. Dude Smith dwelling	N/A	unknown	unknown
m. Fisher Cemetery	022-5039	264.95	227.45

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Table 23-1

Distance from Project to Historic Sites Mentioned in Letter of Donald Wayne Jones, Dated December 19, 2016 (Accession Number 20161219-5105)

Unknown = precise locations could not be obtained from the public right-of-way during the Phase I architectural survey.
a/ contained within the tax parcel (VA-GI-200.043) for the previously recorded Adlie Jones Farm.
b/ contained within the tax parcel (VA-GI-200.042) for the previously recorded Leffel Mansion.

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24. Address the J.D. Pezzoni report filed by the Water and Power Law Group on May 9, 2016 (accession number 20160509-5155) that requested a finding of project effects for specific resources within the Greater Newport Rural Historic District and the Newport Historic District in Giles County, Virginia. Using the revised pipeline route filed October 14, 2016, recalculate the distance (in feet) between the MVP pipeline and workspace area boundaries and the historic resources listed in the Pezzoni report.

Response:

The distance (in feet) between the MVP pipeline and workspace area boundaries and the historic resources listed in the Pezzoni report are provided within Attachment DR4 Cultural Resources 22. Findings of project effects for specific resources within the Greater Newport Rural Historic District and the Newport Historic District in Giles County, Virginia is ongoing. As requested by the Virginia Department of Historic Resources, Mountain Valley has taken a stepped approach to the tasks necessary to evaluate effect to resources in Virginia. Reports summarizing tasks one, two, and three are provided as Attachment DR4 Cultural Resources 21b and 21c. Mountain Valley submitted Task 1 to the Virginia Department of Historic Resources on January 9, 2017. Comments on that report were received from the Virginia Department of Historic Resources February 9, 2017 and is included at Attachment DR4 Cultural Resources 21d. Task 4, the final step in the effects analysis, will be provided following receipt of comments from Virginia Department of Historic Resources on the Tasks 2 and 3.

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25. Clarify the MP location and distance (in feet) of the revised proposed pipeline route filed October 14, 2016 to the exterior boundary of the Newport Historic District in Giles County, Virginia (from edge of the construction right-of-way and centerline). Illustrate the relationship of the pipeline to the Historic District boundary on a copy of a 7.5-minute USGS topographic quadrangle map. Document the distance, in feet, from workspaces to any resources in the indirect APE (0.5-mile from centerline) within the Newport Historic District. Provide an assessment of project effects for the Newport Historic District, including on the rural historic landscape and built environment, and file the SHPO's review of that assessment.

Response:

Attachment DR4 Cultural Resources 25a provides the distance in feet from workspaces to any resources in the indirect APE (0.5-mile from centerline) within the Newport Historic District. This relationship is depicted in Attachment DR4 Cultural Resources 25b on a copy of a USGS 7.5' Quadrangle map.

Mountain Valley's Criteria of Effects Assessment for the Newport Historic District is ongoing. As requested by the Virginia Department of Historic Resources, Mountain Valley has taken a stepped approach to the tasks necessary to evaluate effect to resources in Virginia. Reports summarizing tasks one, two, and three are provided as Attachment DR4 Cultural Resources 21b and 21c. Mountain Valley submitted Task 1 to the Virginia Department of Historic Resources on January 9, 2017. Comments on that report were received from the Virginia Department of Historic Resources February 9, 2017 and is included at Attachment DR4 Cultural Resources 21d. Task 4, the final step in the effects analysis, will be provided following receipt of comments from Virginia Department of Historic Resources on the Tasks 2 and 3 Report.

Mountain Valley's approach to the Criteria of Effects Assessment, as it relates to these historic districts, involved a systematic analysis of potential direct and indirect Project effects to not only the historic built environment, but to also the surrounding historic landscape. In accordance with 36 CFR 800.5(a)(1), this analysis assessed potential effects to the integrity of the historic districts' setting and accounted for potential effects to elements including cultural character and land use.

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26. Given that the October 14, 2016 proposed route along the adopted Mount Tabor Sinkhole Plain Variation would change the crossing of the North Fork Valley Rural Historic District, in Montgomery County, Virginia, provide a table that lists all cultural resources within the indirect APE in the Historic District, and their distance (in feet) from the edge of workspaces and the centerline. Also, provide the MPs for the segment of pipeline route that would cross through the North Fork Valley Rural Historic District, and illustrate the relationship of the pipeline to the Historic District boundary and contributing elements of the Historic District in the indirect APE on a copy of a 7.5-minute USGS topographic quadrangle map. Provide an assessment of project effects for the North Fork Valley Rural Historic District, including on the rural historic landscape and built environment, and file the SHPO's review of that assessment.

Response:

Attachment DR4 Cultural Resources 26a provides the distance in feet from all resources in the North Fork Valley Rural Historic District in Montgomery County, Virginia to the temporary pipeline construction right-of-way, any construction workspaces, and centerline). This relationship is depicted in Attachment DR4 Cultural Resources 26b on a copy of a USGS 7.5' Quadrangle map.

Mountain Valley's Criteria of Effects Assessment for the North Fork Valley Rural Historic District is ongoing. As requested by the Virginia Department of Historic Resources, Mountain Valley has taken a stepped approach to the tasks necessary to evaluate effect to resources in Virginia. Reports summarizing tasks one, two, and three are provided as Attachment DR4 Cultural Resources 21b and 21c. Mountain Valley submitted Task 1 to the Virginia Department of Historic Resources on January 9, 2017. Comments on that report were received from the Virginia Department of Historic Resources February 9, 2017 and is included at Attachment DR4 Cultural Resources 21d. Task 4, the final step in the effects analysis, will be provided following receipt of comments from Virginia Department of Historic Resources on the Tasks 2 and 3 Report.

Mountain Valley's approach to the Criteria of Effects Assessment, as it relates to these historic districts involved a systematic analysis of potential direct and indirect project effects to not only the historic built environment, but to also the surrounding historic landscape. In accordance with 36 CFR 800.5(a)(1), this analysis assessed potential effects to the integrity of the historic districts' setting and accounted for potential effects to elements including cultural character and land use.

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Mountain Valley's approach to the Criteria of Effects Assessment, as it relates to these historic districts involved a systematic analysis of potential direct and indirect project effects to not only the historic built environment, but to also the surrounding historic landscape. In accordance with 36 CFR 800.5(a)(1), this analysis assessed potential effects to the integrity of the historic districts' setting and accounted for potential effects to elements including cultural character and land use.

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27. Address the December 19, 2016 letter from Preserve Bent Mountain (accession number 20161220-5042) that requested a study of “cultural attachment” for the Bent Mountain and Poor Mountain communities in Roanoke County, Virginia. Also provide the results of additional research about the Bent Mountain Rural Historic District, as recommended by New South Associates (Turco, March 2016), and concurred with by the Virginia SHPO. Provide an assessment of project effects for the Bent Mountain Rural Historic District, including on the rural historic landscape and built environment, and file the SHPO’s review of that assessment.

Response:

The documented rural historic districts within the Mountain Valley Area of Potential Effect (APE) have already either been listed in the National Register of Historic Places (NRHP) or deemed eligible for reasons other than “cultural attachment,” which is not a concept recognized under the National Historic Preservation Act (NHPA). The concept of cultural attachment is a concern for residents of rural areas within the Mountain Valley APE including the Bent Mountain (Bent Mountain Rural Historic District) and Poor Mountain (Coles-Terry Rural Historic District) communities. However, within the confines of Section 106 of the NHPA, there are no guidelines for identifying and evaluating cultural attachment, nor are there criteria for which to assess the potential effects Mountain Valley may have on cultural attachment in these areas. As noted in The Proposed Mountain Valley Pipeline Jefferson National Forest Cultural Attachment Report (Applied Cultural Ecology 2016), the concept of cultural attachment has been noted as “lacking in the tangible substantive elements that lend itself to evaluation under Section 106 of the National Historic Preservation Act or under the National Environmental Policy Act.” Nevertheless, cultural attachment continues to be raised as a concern of stakeholders.

While there are not established criteria for assessing potential effects to cultural attachment, 36 CFR 800.5(a)(1) provides clear criteria of adverse effects for assessing effects to “historic properties,” which applies to the documented rural historic districts within the Mountain Valley APE. These prescribed criteria account for “any change, beneficial or adverse, in the quality of the cultural character” and “changes (direct or indirect) in patterns of land use” that qualifies the property under the National Register criteria. Thus, the assessment of effects for the Bent Mountain Rural Historic District and the Coles-Terry Rural Historic District, in accordance with 36 CFR 800.5(a)(1)

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would, in effect, accomplish the same objective as a study of cultural attachment in the Bent Mountain and Poor Mountain communities.

Mr. Tom King's analysis "Traditional Cultural Places in Appalachian Virginia and the Mountain Valley Pipeline" (Accession 20160830-5133), asserts that, in the case of Mountain Valley, "effects are judged with reference to specific places within the districts, not with reference to the districts themselves." However, Mountain Valley's approach to the assessment of effects, as it relates to these historic districts, was two-fold and involved a systematic analysis of potential direct and indirect Project effects to not only the historic built environment, but also to the surrounding historic landscape. Mountain Valley's approach to the assessment of effects took into consideration the fact that visual character can be the most compelling evidence of a landscape's historic qualities and that visual character conveys the essential elements of feeling and association that link an area to its past. This landscape-based approach to assessing Project effects is applicable regardless of a historic property's status as a rural historic landscape or a Traditional Cultural Property or Place.

In a meeting with the Virginia Department of Historic Resources, held January 12, 2016, Mountain Valley agreed to assess the effects of the project on all of the potentially NRHP-eligible resources to comply with Section 106 of the NHPA. As a result of the Phase I surveys, both Bent Mountain Rural Historic District and the Coles-Terry Rural Historic District are potentially NRHP-eligible. As such, there is no need to conduct Phase II architectural surveys on individual resources within each District. Mountain Valley's Criteria of Effects Assessment for the Bent Mountain Rural Historic District and the Coles-Terry Rural Historic District is ongoing. As requested by the Virginia Department of Historic Resources, Mountain Valley has taken a stepped approach to the tasks necessary to evaluate effect to resources in Virginia. Reports summarizing tasks one, two, and three are provided as Attachment DR4 Cultural Resources 21b and 21c. Mountain Valley submitted Task 1 to the Virginia Department of Historic Resources on January 9, 2017. Comments on that report were received from the Virginia Department of Historic Resources February 9, 2017 and is included at Attachment DR4 Cultural Resources 21d. Task 4, the final step in the effects analysis, will be provided following receipt of comments from Virginia Department of Historic Resources on the Tasks 2 and 3 Report. Mountain Valley will file any recommendations from VDHR with FERC upon completion of the consultation.

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28. Given that the October 14, 2016 filing with the FERC by Mountain Valley changed the proposed pipeline route between about MPs 246.1 and 246.6 within the Blue Ridge Parkway Historic District in Roanoke and Franklin Counties, Virginia, provide a table that lists all cultural resources within the indirect APE (0.5 mile from the pipeline) in the Historic District, and their distance (in feet) from the edge of the construction right-of-way and the centerline of the newly proposed route. Provide an assessment of project effects for the Blue Ridge Historic District, including on the rural historic landscape and built environment, and file the NPS review of that assessment.

Response:

A table that lists all cultural resources within the indirect APE (0.5 mile from the pipeline) in the Blue Ridge Parkway Historic District and their distance (in feet) from the edge of the construction right-of-way and the centerline is provided as Attachment DR4 Cultural Resources 28a. A map of these resources is included as Attachment DR4 Cultural Resources 28b (PRIVILEGED).

The Project crosses the Blue Ridge Parkway Historic District in Roanoke and Franklin Counties, Virginia at approximate MP 246.4 for approximately 2,640 feet. It should be noted that the Blue Ridge Parkway National Park encompasses the Blue Ridge Parkway Historic District within the Project APE. As such, the Blue Ridge Parkway Historic District, within the Project APE, is under the jurisdiction of the National Park Service (NPS). Mountain Valley continues to consult with the NPS with regards to the crossing location, potential impacts, effects assessment, and mitigation strategies for the Blue Ridge Parkway National Park and the Blue Ridge Parkway Historic District.

As per NPS request, Mountain Valley performed a Visual Impact Assessment (VIA) which assessed the potential visual impacts of the Project to the Blue Ridge Parkway National Park using the visual inventory and assessment methodology developed by the NPS (Tetra Tech 2017). See Attachment DR4 Alternatives 7c.

Mountain Valley will provide NPS reviews of all impact/effects assessments regarding the Blue Ridge Parkway Historic District to VDHR and file with FERC.

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29. If a SHPO makes a finding of adverse effect for any Historic District, file a District-specific treatment plan, and the SHPO's review of the plan.

Response:

In report *Criteria of Effects Report for the Mountain Valley Pipeline Project, Wetzel, Harrison, Doddridge, Lewis, Braxton, Webster, Nicholas, Greenbrier, Fayette, Summers, and Monroe Counties, West Virginia* (Tetra Tech, February 2017) Attachment DR4 Cultural Resources 29. Mountain Valley does not recommend that the Project will result in adverse effects to any historic districts in West Virginia. Evaluations of the eight historic districts in VA is ongoing. As requested by the Virginia Department of Historic Resources, Mountain Valley has taken a stepped approach to the tasks necessary to evaluate effect to resources in Virginia. Reports summarizing tasks one, two, and three are provided as Attachment DR4 Cultural Resources 21b and 21c. Mountain Valley submitted Task 1 to the Virginia Department of Historic Resources on January 9, 2017. Comments on that report were received from the Virginia Department of Historic Resources February 9, 2017 and is included at Attachment DR4 Cultural Resources 21d. Task 4, the final step in the effects analysis, will be provided following receipt of comments from Virginia Department of Historic Resources on the Tasks 2 and 3 Report. Should a finding of adverse effect for any historic district be made, Mountain Valley will develop a district-specific treatment plan and will submit each plan to the respective SHPO for review.

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30. Address the comments of Georgia Haverty filed with the FERC on November 10, 2016 (accession number 20161110-5022). Document whether or not the Doe Creek Farm (VADHR File No. 35-18) was recorded and evaluated as an historic site by Mountain Valley's cultural resources contractor. If so, provide the report citation. If not, explain why. Indicate the distance (in feet) from Site 35-18 to MVP work area boundaries.

Response:

The Doe Creek Farm/Hoge's Orchard crosses the MVP corridor between MP 206.71 and 207.35.

Mountain Valley's cultural resources contractor recorded and evaluated Doe Creek Farm (DHR No. 035-0018) in *Phase I Reconnaissance Architectural Survey for the Mountain Valley Pipeline, Craig and Giles Counties, Virginia* (New South February 2016). The Doe Creek Farm was recommended not eligible for listing in NRHP. The VDHR concurred in a letter dated March 25, 2016.

At the request of the landowner VDHR has reconsidered their previous determination. The NRHP nomination will be considered for NRHP listing at a meeting of the Virginia Board of Historic Resources and the Virginia State Review Board in March 2017.

In anticipation of the Virginia Board of Historic Resources listing The Doe Creek Farm/Hoge's Orchard as a potentially eligible resource, it was included in the "Master List" for the MVP *Criteria of Effects Assessment* and identified as a potentially eligible resource under Criteria A and C. See Attachment DR4 Cultural Resources 4.

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31. Revise Phase IB Archaeological Survey Report Addendum 1, and Phase II Archaeological Evaluations, Sites 44CG0253, 44CG0254, 44GC0255, Craig County, Virginia (Reeve et al., December 2016) to include:
- a. Dates of the investigations;
 - b. Site number and site form for the rock shelter;
 - c. Site forms for the historic architectural sites (022-5039; 022-5042, 022-5043, and 022-5044);
 - d. Avoidance plans for the rock shelter and the four historic architectural sites (022-5039; 022-5042, 022-5043, and 022-5044); and
 - e. Copies of 7-5-minute USGS topographic quadrangle maps that illustrate the location of: 1) all areas covered by cultural resources inventories; and 2) all cultural resources identified within the survey areas.

Response:

- a. Phase IB investigation at site 44CG0253 took place on March 30, 2016. Phase II evaluation at the site was performed from September 20 to 21, 2016.

Phase IB investigation at site 44CG254 took place on March 30, 2016. Phase II evaluation took place from September 13 to 17, 2016.

Phase IB investigation took place at site 44CG255 on July 5, 2016 and August 4, 2016. Phase II evaluation at the site took place on October 3, 2016.
- b. A site form was not developed and an archaeological site number was not assigned to the rock shelter because it was not established that the site contained archaeological cultural resources and may not actually be an archaeological site. The rock shelter had been observed by the archaeology team in the field as a geological feature and noted as an area potentially sensitive for cultural resources. Mountain Valley determined that it could modify the route so that the rock shelter would be avoided (see avoidance plan included as Attachment DR4 Cultural Resources 31b (PRIVILEGED)). The rock shelter will not be affected by the Project.

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- c. Site forms for historic architectural sites 022-5039; 022-5042, 022-5043, and 022-5044 are included as Attachment DR4 Cultural Resources 31c (PRIVILEGED).
- d. An avoidance plan for the rock shelter is included as Attachment DR4 Cultural Resources 31b. Avoidance plans for the historic architectural sites 022-5039; 022-5042, 022-5043, and 022-5044 are included as Attachment DR4 Cultural Resources 31d (PRIVILEGED).
- e. Attachment DR4 Cultural Resources 31e (PRIVILEGED) contains a mapbook that displays all areas covered by cultural resources inventories and all cultural resources identified within the survey area.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 17, 2017

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Cultural Resources

32. Revise Phase IB Archaeological Survey Report Addendum 1, Franklin County, Virginia (Reeve et al., December 2016) to include:
- a. Dates of the investigations;
 - b. Site numbers and site forms for the 12 historic architectural sites;
 - c. Avoidance plans for prehistoric sites 44FR387, 392, 394, and 407; and
 - d. Copies of 7-5-minute USGS topographic quadrangle maps that illustrate the location of: 1) all areas covered by cultural resources inventories; and 2) all cultural resources identified within the survey areas.

Response:

- a. Archaeological investigations in Franklin County within areas reported in *Phase IB Archaeological Survey Report Addendum 1, Franklin County, Virginia* (Reeve et al., December 2016) were performed intermittently during the period from December 2015 to November 2016.
- b. Site numbers for the 12 historic architectural sites noted in Reeve et al. 2016 are as follows: 033-5307 (cemetery); 033-5376 (cemetery); 033-5377 (20th century farm); 033-5378 (spring house); 033-5383 (20th century storage structure); 033-5403 (cemetery); 033-5408 (cinder block structure); 033-5409 (abandoned residence); 033-5410 (well house); 033-5315 (Holland Cemetery); 033-5412 (historic structures); 033-5413 (house and shed). Site forms for these sites are included within Attachment DR4 Cultural Resources 32b (PRIVILEGED).
- c. Avoidance plans for prehistoric sites 44FR0387, 44FR0392, 44FR0394, and 44FR0407 are included within Attachment DR4 Cultural Resources 32c (PRIVILEGED).
- d. A mapbook that displays the locations of all areas covered by cultural resources inventories and all cultural resources identified within the survey area for the area reported in *Phase IB Archaeological Survey Report Addendum 1, Franklin County, Virginia* (Reeve et al., December 2016) is included within Attachment DR4 Cultural Resources 32d (PRIVILEGED).

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Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 17, 2017

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Cultural Resources

33. Revise Addendum 1 to Volume III, Cultural Resources Survey, Mountain Valley Pipeline Project, Nicholas, Greenbrier, and Fayette Counties, West Virginia (Espino et al. January 2017) to include:
- a. Dates of the investigations;
 - b. Areas surveyed, by MP, including length and acres;
 - c. Avoidance plan for cemetery in Nicholas County; and
 - d. Copies of 7-5-minute USGS topographic quadrangle maps that illustrate the location of: 1) all areas covered by cultural resources inventories; and 2) all cultural resources identified within the survey areas.

Response:

Mountain Valley has updated the referenced addendum as requested. The updated portions of the revised report are included as Attachment DR4 Cultural Resources 33a, 33b, and 33c (PRIVILEGED).

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 9, 2017

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Geology

1. Address the letter filed with the FERC by Coronado Coal on November 14, 2016 (accession number 20161114-5272). In particular, document recent communications with Coronado Coal towards reaching an agreement to cross their coal reserves and compensate for impacts. Specify (by MPs/county/state) where the proposed pipeline route would cross the Pocahontas No. 6 & No 7 coal seams, and the acres of coal reserves that may be impacted by project construction and operation at those locations.

Response:

Pocahontas No. 6 and No. 7 Coal Seam Crossings			
MP	County	State	Description
135.1	Greenbrier	WV	Enter Poca 7
139.15	Greenbrier	WV	Leave Poca 7
135	Greenbrier	WV	Enter Poca 6
135.7	Greenbrier	WV	Leave Poca 6

On November 23, 2016, a Coal Subsidence Agreement was provided to Coronado. The terms of this agreement would compensate Coronado at the time of mining for any coal that is left in-place to support the surface in the area of the proposed pipeline in both the Pocahontas 6 and 7 seams. Mountain Valley received a response from Coronado on December 13, 2016 concerning the agreement. Negotiations are ongoing.

Coronado does not have any active permits or permit applications for these coal seams, so any mining that could affect the pipeline is entirely speculative. Mountain Valley has estimated the reserve impacts to be 53,404 tons in the Pocahontas 6 and 514,547 tons in the Pocahontas 7, but actual impacts will not be able to be determined until a final mine plan is decided and the coal is or can be physically mined.

Respondent: Kevin Wagner
Position: Land Director
Phone Number: 304-627-6431
Date: February 9, 2017

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Geology

2. Several discrepancies were observed in table 4.1.1-14 (Summary of Shallow Bedrock along the Mountain Valley Project filed on October 20, 2016). Provide a revised table or clarify the following:
 - a. The totals presented for West Virginia, Virginia, and Project Total in table 4.1.1-14 do not match the sums of the column;
 - b. The totaled distance values for both county, state, and project total in Appendix M (Shallow Bedrock along the Mountain Valley Project) do not match the county, state, and project totals presented in table 4.1.1-14; and
 - c. According to the revised Vertical Scour and Lateral Channel Erosion Analysis (filed on October 14, 2016) it is estimated that shallow bedrock (bedrock within 7 feet of the ground surface) would occur at several waterbody locations. The crossing MPs identified in the scour analysis occur outside of the shallow depth to bedrock identified in Appendix M. Provide a revised table 4.1.1-14 and Appendix M that include potential shallow depth to bedrock as identified in the scour analysis.

Response:

- a. Table 4.1.1-14 has been revised to reflect the data in Appendix M:

TABLE 4.1.1-14 (REVISED February 2017) Summary of Shallow Bedrock along the Mountain Valley Project (February 2017 Update)	
State/County	Miles of Shallow Bedrock
West Virginia	88.8179.8
Wetzel	11.88.8
Harrison	20.1 22.2
Doddridge	8.34.6
Lewis	24 25.6
Braxton	5.5 13.1
Nicholas	4.6 21.4

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TABLE 4.1.1-14 (REVISED February 2017) Summary of Shallow Bedrock along the Mountain Valley Project (February 2017 Update)	
State/County	Miles of Shallow Bedrock
Greenbrier	4.1 20.2
Summers	4 15.1
Monroe	9.4 19.9
Virginia	29.9 29.4
Giles	3.6 6.7
Craig	0.4 0.6
Montgomery	11.9 13.0
Roanoke	3.2 3.1
Franklin	3.2 12.1
Pittsylvania	10.8 0.6
Mountain Valley Project Total	118.0 216.0
Source: USDA, 2015	
Note: Columns may not total correctly due to difference cause by rounding.	

- b. Table 4.1.1-14 has been revised to correctly reflect the data in Appendix M. See the response to sub-part (a).
- c. Table 4.1.1-14 and Appendix M and the associated text acknowledge the limitations of the shallow bedrock data as obtained from the USDA. This data is only intended to provide a general indication of where shallow bedrock might be encountered. The more detailed studies in the vicinity of waterbody crossing locations or any other locations required prior to Project construction is not inconsistent with the generalized information presented in the table. The waterbody crossing areas require more detailed depth to bedrock data due to scour concerns. Therefore, these concerns

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have been appropriately addressed in relation to the waterbody crossings in related sections of the draft EIS.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: February 9, 2017

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Geology

3. Table 4.1.2-2 (Steep Slopes along the MVP Pipeline Route on the JNF) appears to have an error as the start MP 197.5 is greater than the end MP 197.4. Resolve this apparent discrepancy.

Response:

The correct end MP is 197.8.

Respondent: Ricky Myers
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Phone Number: 724-873-3640
Date: February 9, 2017

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Geology

4. Provide updated crossing distances (miles/counties) for the Millboro Shale, Needmore Shale, and Ashe formation.

Response:

The updated bedrock geology crossing distances have been updated for Table 4.1.1-3, included as Attachment DR4 Geology 4a and in the more detailed Table 6-A-1, included as Attachment DR4 Geology 4b. The updates include crossing distances, county information, and MP start/end information for these geologic formations.

Respondent: Ricky Myers
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Geology

5. Provide an updated distance for the closest uranium deposit in proximity to the MVP.

Response:

The current location of the Proposed Route does not change the previously reported information regarding the closest uranium deposit. The two uranium deposits at Coles Hill in Pittsylvania County are still the closest uranium deposits located 3.8 miles from the Project.

Respondent: Ricky Myers
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Geology

6. Provide updated MPs for the area of the Giles County Seismic Zone where peak horizontal ground acceleration would be on the order of 0.14 force of gravity.

Response:

For the October 2016 Proposed Route, the area between approximate MP 192 and MP 210 is mapped as a portion of the Giles County Seismic Zone associated with peak horizontal ground acceleration greater than 0.14 force of gravity.

Respondent: Ricky Myers
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Date: February 9, 2017

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Geology

7. Provide updated MPs for the slopes identified to exceed the 1,580 feet length for triggered slope displacement hazards.

Response:

The only parallel slope in the Giles County Seismic Zone greater than 1,580 feet in length is located between MP 162.3 and MP 162.9 of the October 2016 Proposed Route.

Respondent: Ricky Myers
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Phone Number: 724-873-3640
Date: February 9, 2017

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8. Address the issues raised by the Indian Creek Watershed Association on December 21, 2016 (accession number 20161221-5434) and the attached report entitled “Hydrogeological Assessment of the Proposed Mountain Valley Pipeline Routes Through Subwatersheds with Tributaries to Indian Creek, Monroe County, WV” by Pamela Dodds.

Response:

See Attachment DR4 Geology 8.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
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Geology

9. In response to comments on the draft EIS, provide a discussion of potential impacts due to the occurrence of a seismic event and landslide at the same time and place. Outline measures that Mountain Valley would implement to avoid, minimize, or mitigate impacts on steep slopes resulting from earthquakes and landslides.

Response:

Seismic hazards along Mountain Valley's proposed route are addressed in Resource Report 6 of Mountain Valley's October 2015 application to FERC. Ground shaking alone does not pose a serious threat to below-grade welded steel pipelines, thus the concern in the event of a simultaneous earthquake and landslide is the effect of the landslide on the pipeline.

Slopes greater than 20° (36 percent) and currently exhibiting a static slope stability factor of safety less than 1.08 are at risk for triggered slope displacement due to a seismic event. The low static slope stability factor of safety that would raise potential concerns for earthquake-triggered displacement is also indicative of slopes that can experience displacement from other causes.

Mountain Valley's construction techniques and landslide mitigation techniques, as presented in the Landslide Mitigation Plan (LMP), are industry-proven techniques to mitigate landslide risk both parallel and perpendicular to pipelines in rugged terrain. On steep slopes, Mountain Valley plans to install surface and subsurface drains, trench breakers, and other best management practices (BMPs) as prescribed in the LMP and as deemed necessary by Mountain Valley's geotechnical inspectors during construction. By installing pipeline to these BMPs and compacting the pipeline backfill, it is likely that native slopes having relatively low slope stability factors of safety will have an increased slope stability factor of safety in the immediate vicinity of the pipeline.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: February 17, 2017

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Geology

10. Provide the cross section results of the electrical resistivity study and analysis conducted along the Mount Tabor Variation.

Response:

See Attachment DR4 Geology 10.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
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Geology

11. Mountain Valley indicated LIDAR data was not publically available for karst areas in proximity to the MVP. Provide an updated fracture trace analysis utilizing the publically available LIDAR data identified in public comments made by Mode Johnson (accession number 20161222-5305) and Pamela Ferrante (accession number 20161220-5368).

Response:

Mountain Valley used remote sensing Light Detecting and Ranging (LiDAR) data and other data sources listed below, to complete a fracture trace analysis of the Mount Tabor area in the vicinity of the proposed Mountain Valley Pipeline (see Attachment DR4 Geology 11). Sinkhole alignments were also identified as part of the fracture trace analysis.

A fracture trace comprises a linear landform feature observed through inspection of aerial photographs or images and/or remotely sensed digital data. An apparent fracture trace typically refers to a linear landform feature less than one mile in length, while a lineament is generally a linear feature greater than one mile in length. These linear landform features may be observed as changes in vegetative growth, sharp changes in stream channel direction, or alignment of stream valley or drainage patterns that may be indicative of enhanced weathering of bedrock at the Earth's surface where it intersects a fracture, joint, fault, major bedding plane, etc.

A fracture trace analysis is one of a variety of tools that may be employed to identify karst feature distribution and potential influences on groundwater flow rate and direction. Potential geologic origins of fracture traces and lineaments are discussed in Lattman (1958) and Lattman and Parizek (1964), and further in Diadoto (1999).

The sinkhole alignments in this analysis were identified from observed linear distributions of mapped sinkholes. It is noted that sinkhole alignments may have little correlation to subsurface fractures and vice versa. Rather, a sinkhole alignment may represent a location where a more soluble section of bedrock is exposed at the surface with either side being less soluble (structure controlled). Additionally, a confining unit, such as shale, may influence adjacent sinkhole development along strike. Conversely, a fracture zone in less soluble carbonates may not develop sinkholes.

Mountain Valley provided fracture and sinkhole alignment observations across this portion of Montgomery County that includes the initial October 2015 proposed route, as well as the currently proposed October 2016 Proposed Route. The Mountain Valley

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Karst Specialist Team identified linear features in the Mount Tabor area in Sheets 27 through 32 of the Karst Hazards Assessment.

The figure included in Attachment DR4 Geology 11 illustrates representations of fracture traces and lineaments interpreted from the following data sources:

- MVP 2015 project LiDAR;
- Blacksburg 2010 LiDAR (west edge);
- Montgomery Co. 2005 LiDAR;
- VGIN 2007-2015 digital terrain models;
- Virginia Sinkhole data, Va.DMME;
- McDonalds Mill 7.5' geologic quadrangle; and
- Several smaller lineaments were noted in the field during the Karst Hazards Assessment that do not readily appear in aerials and LiDAR.

Based on comparison of the current fracture trace analysis conducted using the additional LiDAR data (Montgomery County 2005) to the linear features identified during the Karst Hazards Assessment, there is no substantial difference in features identified. More importantly, the updated fracture trace analysis does not change the overall understanding of karst hydrology in the Mount Tabor sinkhole plain, which for purposes of this study is defined as the area south and east of the Pulaski thrust fault, north of the Mount Tabor fault, and west of the Mill Creek (see Attachment DR4 Geology 11, blue highlighted karst features for an approximate depiction of the sinkhole plain).

A comprehensive and effective evaluation of a proposed natural gas pipeline alignment includes multivariate analysis of direct and remotely collected data. LiDAR is a valuable resource for desktop evaluation of karst topography and Mountain Valley utilized LiDAR to evaluate routing in karst areas. However, field evaluation coupled with a wide variety of resources as presented in the Karst Hazards Assessment is an even more critical component for understanding the local karst hydrogeology.

Mountain Valley proposed an adjustment to the October 2015 proposed alignment to avoid the Mount Tabor sinkhole plain, resulting in the current October 2016 Proposed Route. The fracture trace analysis presented here supports the October 2016 Proposed Route as the preferred alignment.

The Karst Hazards Assessment demonstrated that Mountain Valley expects negligible risks both to karst features and from karst features to the pipeline that cannot be addressed through minor alignment adjustments and mitigation measures. The fracture trace analysis completed by Mountain Valley supports the Karst Hazards Assessment conclusions for the proposed alignment.

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Literature Cited:

Diodato, D.M., 1999. Fracture Trace Mapping of the Eldridge-Wilde Well Field, Pinellas County, Florida. U. S. Geological Survey, Open-File Report 99-235, U.S. Department of the Interior, Reston, Virginia.

Lattman, L.H., 1958, Technique of mapping geologic fracture traces and lineaments on aerial photographs, Photogrammetric Eng., v. 24, p. 568.

Lattman, L.H., and R.R. Parizek, 1964, Relationship between fracture traces and the occurrence of ground water in carbonate rocks: Journal of Hydrology, v. 2, p. 73.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: February 17, 2017

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Geology

12. Provide the protocol Mountain Valley would follow in circumstances where unforeseen mine pools are encountered. File an unanticipated mine pool mitigation plan, and document its development in communication with applicable resource agencies.

Response:

See *Unanticipated Mine Pool Mitigation Plan* included as Attachment DR4 Geology 12.

Respondent: John Uhrin
Position: Construction Director
Phone Number: 724-873-3497
Date: February 17, 2017

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Geology

13. File a final Blasting Plan. Document that the plan was developed in communications with applicable resource agencies.

Response:

Mountain Valley has updated and finalized the General Blasting Plan in accordance with comments received from Virginia Department of Game and Inland Fisheries, Virginia Department of Mines, Minerals, and Energy (Accession 20161222-5394), and the United States Forest Service (Accession 20161223-5049). The final General Blasting Plan is included as Attachment DR4 Geology 13.

Respondent: John Uhrin
Position: Construction Director
Phone Number: 724-873-3497
Date: February 9, 2017

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Geology

14. Between MPs 196.9 and 197.4 the pipeline route descends steep slopes where National Forest System (NFS) lands are part of the temporary construction right-of-way. Revise table 4.1.2-2 from the draft EIS to include those steep slopes.

Response:

Information on steep slopes crossed by the pipeline between MPs 196.9 and 197.4 was included in the revised draft EIS table 4.1.2-2 filed with FERC on October 27, 2016.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 17, 2017

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Geology

15. In response to the FS request dated December 20, 2016 for site-specific designs at high-hazard locations, Mountain Valley did not include data to show the effectiveness of its proposed measures. Document communications with the FS on this issue, and provide the requested information.

Response:

Mountain Valley has proposed site-specific stabilization measures in its Landslide Mitigation Plan and its report for the U.S. Forest Service, *Site-Specific Design of Stabilization Measures in Selected High-Hazard Portions of the Route of the Proposed Mountain Valley Pipeline Project in the Jefferson National Forest*. Data on the effectiveness of these measures and techniques are provided in Attachment DR4 Geology 15.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: February 17, 2017

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Soils

1. Updated Appendices N-1 and N-2 filed on October 20, 2016 have several instances of MPs with no Map Unit ID or soil name to accompany the entry (e.g., MP 65.4 has no soil name but impacts are listed). Clarify this apparent discrepancy and include an explanation that specifies why no map unit or soils series are identified for blank entries.

Response:

Appendix N-1 and N-2 have been updated to include all map units and soil names and are included as Attachment DR4 Soils 1a and 1b, respectively.

Respondent: Megan Neylon
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Date: February 9, 2017

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Soils

2. The total presented for stony/rocky soils (50.5 acres) in Appendix N-2 (Soils and Soil Limitation Crossed by the Mountain Valley Project in Virginia in Acres filed October 20, 2016) differs greatly from the summed value of that column (120 acres) resolve the apparent discrepancy.

Response:

A revised Appendix N-2, included as Attachment DR4 Soils 1b, has been updated to address the discrepancy for stony/rocky soils.

Respondent: Megan Neylon
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Phone Number: 724-873-3645
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Soils

3. The prime farmlands and stony/rocky soil columns in Appendix N-4 (Soils and Soils Limitations at the Mountain Valley Project Access Roads in Acres filed October 20, 2016) contains blank cells with no symbol stating no impact. Clarify these apparent discrepancies.

Response:

A revised Appendix N-4, included as Attachment DR4 Soils 3, has been updated to address the blank cells after further review of the updated SSURGO data.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 9, 2017

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Soils

4. The total presented for shallow depth to water table (0 acres) in Appendix N-7 (Soils and Soil Limitations Crossed by the MVP Contractor Yards in Acres filed October 20, 2016) does not match the summed value of that column (4.1 acres). Resolve the apparent discrepancy.

Response:

A revised Appendix N-7, included as Attachment DR4 Soils 4 has been updated to resolve the discrepancy with shallow depth to water table.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 9, 2017

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Soils

5. Multiple discrepancies exist between the values presented in table 4.2.1-1 (Soil Limitations along the Mountain Valley Project [in acres] filed October 20, 2016) and Appendices N-1 through N-8. Specifically errors were found between the totals reported in the tables for the following facilities and categories:
- a. Pipeline Right-of-Way: prime farmland; compaction potential; water erosion potential; revegetation potential; poor drainage; and stony/rocky soils;
 - b. Compressor Stations: stony/rocky soils (temporary and permanent impacts);
 - c. Meter Stations: Compaction Potential (permanent impacts); and
 - d. Construction Yards: water erosion potential (temporary impacts).

Provide revised tables that resolve these apparent discrepancies.

Response:

Appendices N-1 through N-8 have been reviewed and Table 4.2.1-1 has been updated to reflect changes from updated SSURGO. However, the data reported in Attachments N-1 and N-2 reflect the area the pipeline crosses (50 feet). This area will be restored and no permanent impacts are expected. The temporary impact area of the pipeline is 125 feet in width and is reported in Table 4.2.2-1. A revised table, also including changes made in October 2016, with references and a note describing the above has been included as Attachment DR4 Soils 5.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 9, 2017

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Soils

6. See Table 4.2.1-1 in the draft EIS, page 4-56. Include a similar table in the JNF section 4.2.1.5.

Response:

A table similar to Table 4.2.1-1 for the JNF has been included as Attachment DR4 Soils 6.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 9, 2017

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Soils

7. See the draft EIS, page 4-64, Section 4.2.2. Provide a discussion of access roads to construction activities including effects to soil resources from construction and/or improvement of access roads, as occurs in other resource areas of the document.

Response:

Construction or improvements of access roads will affect approximately 905 acres. This activity will result in vegetation clearance that could potentially increase erosion and allow for soil compaction. After pipeline installation, approximately 688 acres of temporary roads will be returned to their previous condition and use. Mitigation measures such as those in the FERC Plan and the Project-specific Erosion and Sediment Control Plan, which include measures for the installation of erosion control devices, topsoil segregation, soil de-compaction, and revegetation, will mitigate potential impacts resulting from the temporary use of access roads.

Respondent: John Uhrin
Position: Construction Director
Phone Number: 724-873-3497
Date: February 9, 2017

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Land Use, Transportation, Recreation, and Visual Resources

1. According to a filing with the FERC on October 14, 2016, Mountain Valley sent copies of its revised Traffic and Transportation Management Plan to various state and local government agencies via letters dated October 12, 2016. File copies of agency reviews of the revised plan, such as letters from the Virginia Department of Transportation, and Mountain Valley's responses to those comments.

Response:

Mountain Valley sent the initial cover letter to the Virginia Department of Transportation and the counties that are within the Project development area. These letters are included as Attachment DR4 Land Use 1a along with Mountain Valley's acknowledgement of the comments from the agencies through February 2, 2017. Mountain Valley has incorporated the comments received from the Virginia parties that have responded and have sent a revised Traffic and Transportation Management Plan which is also included as Attachment DR4 Land Use 1b.

Respondent: John Uhrin
Position: Construction Director
Phone Number: 724-873-3497
Date: February 9, 2017

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Land Use, Transportation, Recreation, and Visual Resources

2. In response to comments on the draft EIS (see accession number 20161222-5415), indicate whether Mountain Valley, when crossing railroads, would commit to adhering to applicable Federal Railroad Administration safety-related requirements, and other procedures requested by companies that own or operate the railroads or rights-of-way being crossed.

Response:

Mountain Valley will adhere to the applicable Federal Railroad Administration safety-related requirements when crossing railroad property or rights-of-way.

Respondent: Kevin Wagner
Position: Land Director
Phone Number: 304-627-6431
Date: February 9, 2017

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Land Use, Transportation, Recreation, and Visual Resources

3. File an analysis of recreational use of the Gauley River in West Virginia, including for white-water rafting, such as the number of river users and season of use. Explain how Mountain Valley would reduce or mitigate impacts on recreational users of the Gauley River during its construction across the river at about MP 118.6.

Response:

The Gauley River is used for recreational purposes, including organized white-water rafting. The Summersville Dam, which is the closest point on the Gauley River for organized white-water rafting, is located approximately 10 miles downstream of MP 124; therefore, no impacts to white-water rafting are expected on the Gauley River.

The pipeline route would cross the Gauley River near MP 118.9 in West Virginia using the open-cut dry ditch method. This section of the Gauley River from Cherry River (Curtin Bridge) to Persinger Creek in Nicholas County, West Virginia was identified as a “known kayaking area” by Joseph Herbstritt (Accession # 20160909-5158); however, there is limited publicly available information regarding the accessibility and/or popularity of rafting along this section of the river (American Whitewater 2017). By using the open-cut dry crossing method, Mountain Valley will utilize coffer dams, which will limit construction to half of the waterbody at a time and hence will maintain water access through the pipeline crossing area for recreational users.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 9, 2017

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4. Indicate if the MVP pipeline route would cross Lowell Road in the vicinity of MP 173 in Summers County, West Virginia. Determine if Lowell Road has been officially designated as a “West Virginia Backway,” as claimed by David and Jeanne Schmauss in their November 17, 2016 letter to the FERC (accession number 20161125-0016).

Response:

The pipeline route would cross Lowell Road (County Road 15) near MP 171.9 in Summers County, West Virginia.

Previously, Mountain Valley reviewed publicly available datasets, including West Virginia State Scenic Byways (WV Department of Transportation), National Scenic Byway Program All Byways and Scenic Byways (US Census Bureau, US National Scenic Byway Program) as well as West Virginia Managed Lands, West Virginia State Parks (WV Division of Natural Resources) and the Protected Areas Database (USGS Gap Analysis Program). None of these datasets identified Lowell Road as a “West Virginia Backway;” however, according to the *West Virginia Byways & Backways* guide, State Road 3 and County Roads 12, 15 and 17 on the northern/western side of the Greenbrier River are part of the state-designated Lower Greenbrier River Byway and the Lowell Backway (West Virginia n.d.).

Literature Cited:

West Virginia. n.d. West Virginia Byways and Backways. Available online at: <http://documentslide.com/documents/wv-byways-and-backways-guide.html>. Accessed on January 31, 2017.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 9, 2017

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5. Utilizing the most correct route of the Appalachian National Scenic Trail (ANST, Forest Trail #1) is critical to visual analyses. Provide current ANST centerline data that is available from the Appalachian Trail Conservancy (ATC), which must be utilized to meet the FS criteria. Obtain FS approval on the data and any updated maps and figures before filing the data with FERC.

Response:

Mountain Valley downloaded the latest file for the Appalachian National Scenic Trail from the ATC website on January 30, 2017. Several small changes to the dataset had occurred since the previous version obtained from the ATC website; however, no changes occurred at the proposed crossing location. On February 6, 2017, Mountain Valley provided the latest data to the FS and requested confirmation of the data. On February 10, 2017, the FS responded to Mountain Valley's email and stated that the FS could not confirm the data until after February 27, 2017. A copy of the FS's response email is included as Attachment DR4 Land Use 5. Mountain Valley will file the data with FERC after the FS provides confirmation.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 17, 2017

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6. Address the letter from the ATC, filed December 8, 2016 (accession number 20161208-5043), and the letter from the FS filed December 12, 2016. In particular, provide updated visual impact analyses of the ANST, using both “leaf-on” and “leaf-off” simulations of the pipeline route at the crossing location, and from other Key Observation Points (KOP) at highly visited nearby locations along the ANST, including Angels Rest, Dragon Tooth, Kelly Knob, and “middle ground” and background views within the JNF.

Response:

Visual analysis has been conducted, including from the Appalachian National Scenic Trail, using both “leaf-on” and “leaf-off” simulations of the pipeline route at the crossing location, and from other Key Observation Points (KOP) at highly visited nearby locations along the Appalachian National Scenic Trail. These KOPs include Angels Rest, Dragon Tooth, Kelly Knob, Rice Field, and Wind Rock Overlook. This analysis included foreground, middle ground, and background views within the JNF.

The analysis is included in the Appalachian National Scenic Trail Visual Impact Assessment (see Attachment DR4 Land Use 6) and concludes that construction and operation of the Project will have minor, but not significant, visual impacts to the ANST, including from managed vistas. To ensure compliance with Scenic Integrity Objectives (SIOs) in the JNF, Mountain Valley will implement various mitigation measures and best management practices (BMPs), which Mountain Valley developed in consultation with USFS, to lower potential visual impacts from the Project identified during the analysis. Mitigation measures include feathering the ROW, crossing the ANST at a right angle, using conventional bore and leaving an approximately 300’ vegetative buffer between the ROW and the ANST, and conforming to natural lines in the landscape. With minor visual impacts coupled with implementation of these mitigation measures, the Project will not result in any significant visual impacts to visual resources on the JNF or popular ANST KOPs.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 17, 2017

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7. Attachment A of Mountain Valley’s December 22, 2016 filing restates coordination with the ATC and local chapters that occurred before the release of the draft EIS and states that Mountain Valley provided information from July to the NPS in early December 2016. Document communications with the NPS, FS, ATC, and local clubs that occurred after the release of the draft EIS on September 16, 2016 regarding visual simulations and KOP related to the ANST, that are not already in the public record for this proceeding. Address:
- a. The December 22, 2016 comments of the NPS (Accession No. 20161223-5049) that “The NPS, ATC, and local trail clubs have not been consulted on the change that was adopted in July 2016, prior to release of the DEIS. This plan was just recently submitted to the NPS and we will need more time to review this information beyond the DEIS comment period and review process;”
 - b. The December 14, 2016 comments of the ATC (Accession No. 20161215-0009) that as of the date of that filing “no coordination with the ATC or local ATC clubs has occurred;” and
 - c. The December 20, 2016 comment of the Roanoke Appalachian Trail Club (Accession No. 20161220-5163) that “MVP has made no contact nor any attempt at coordination with RATC, and it would now be too late for any meaningful contact,” and that “The only visual impact photo supplied by FERC or the applicant is not even located at the proposed ANST crossing (because both locations we saw flagged were primarily in clearings), was taken when the leaves were on, and makes no attempt to satisfy criteria provided by the USFS in the March 9, 2016 comments on the original MVP Resource Reports.”

Response:

Mountain Valley met with FS on October 19, 2016 to discuss the visual impact analysis (“VIA”) and additional Key Observation Points (“KOPs”) for the VIA for the Proposed Route through the Jefferson National Forest and the crossing of the Appalachian National Scenic Trail (“ANST”) within the Jefferson National Forest (“JNF”). On December 13, 2016 Mountain Valley met with representatives from the FS on a conference call to confirm and agree upon KOPs for the JNF. There were no representatives from the ATC or RATC present during the October 19th meeting or the December 13th call. Based on discussions with the FS and the KOPs provided by the FS, it was Mountain Valley’s

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understanding that the FS was in contact with the ATC and RATC and that the FS identified KOPs that were of particular interest to the ATC and RATC.

- a. The “July route” referenced in the NPS comments is the revised route adopted by Mountain Valley in a June 24, 2016 filing with FERC that was developed after consultation with representatives from FS, the Appalachian Trail Conservancy (“ATC”) and the Roanoke Appalachian Trail Club (“RATC”) between April and June of 2016. The series of meetings and consultations leading up to the proposed ANST crossing is described in the following paragraph.

On April 28, 2016, Mountain Valley met in the field at various locations along the ANST with representatives from the ATC, the RATC, and FS. (Accession Number 20160513-5256). During this field visit, Mountain Valley listened to concerns expressed by these stakeholders and discussed various options to address their concerns. After this meeting, on May 8, 2016, the President of the RATC contacted a Mountain Valley representative via email to inquire about the boring methodology for the ANST crossing. As a result of the April 2016 field meeting, Mountain Valley modified the proposed alignment and bore pits previously identified for a conventional bore under the Appalachian National Scenic Trail. Updated figures, alignment sheets, and a discussion of Modification FS78 were filed publicly to the FERC docket on June 24, 2016. At that time, Mountain Valley incorporated FS78 into the route. On June 28, 2016, FS visited the revised ANST crossing and based on their observations the FS recommended that Mountain Valley avoid crossing a headwater drainage area. (Accession Number 20160816-5254). Mountain Valley adopted the FS recommendations by reducing the right-of-way width to avoid the headwater area. (Accession Number 20161020-5175). On July 22, 2016, representatives from the FS, ATC, RATC and the FERC visited the proposed location of the ANST crossing. After this meeting the FS reported to the FERC that the FS staff was satisfied with the proposed crossing. (Accession Number 20160805-5165). Updated figures and alignment sheets were again filed publicly on the FERC docket on October 13, 2016, more than 60 days prior to the end of the DEIS comment period, which provided sufficient time for review and comment.

- b. Mountain Valley has both directly and indirectly consulted with the ATC and the local ATC clubs during the development of the route and the ANST crossing. See the response to Land Use, Question 7a.

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- c. As described in the response to Land Use, Question 7a, Mountain Valley has made contact with the RATC on several occasions and the RATC has participated in meetings with Mountain Valley as well as with meetings with the FS to discuss the ANST crossing. To obtain the KOPs for the leaf-off analysis, Mountain Valley primarily consulted with the FS because it was Mountain Valley's understanding that the FS obtained KOPs from the ATC and the RATC.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 17, 2017

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Land Use, Transportation, Recreation, and Visual Resources

8. Attachment B of Mountain Valley’s December 22, 2016 filing states that “Mountain Valley has consistently been conducting visual simulations at KOP’s defined by the Forest Service over months of coordination.” Indicate:
- a. The dates of these visual simulations;
 - b. Whether the KOP were limited to those defined by the FS; and
 - c. The “dozens of points already reviewed” related to the ANST.

Response:

- a. Mountain Valley initiated consultation with the FS to identify KOPs July 2015, collected “leaf-on” data in the field on August 6, 2015, and completed the “leaf on” visual simulations in October 2015. In February 2016, Mountain Valley submitted additional visual simulations for the Mountain Shadow Trail (WV) at the request of the FS as well as other locations along the Project but outside the FS. On June 16, 2016, Mountain Valley presented to the FS a series of revised viewshed simulations of the ANST crossing and Angels Rest. On October 19, 2016, Mountain Valley met with FS to discuss the need for additional KOPs to complete the visual impact analysis. (Accession Number 20161212-5205). Once the leaves were off the trees in the fall of 2016, Mountain Valley collected “leaf off” data in the field on November 30, 2016 and December 2, 4, and 5, 2016. The FS provided this additional information on KOPs during a December 13, 2016 telephone conference with Mountain Valley. With this additional information on KOPs, Mountain Valley collected “leaf-off” data in the field on December 19 and 20, 2016. Mountain Valley submitted additional simulations for the ANST on December 22, 2016. Mountain Valley collected additional field data on January 21, 2017. Mountain Valley is finalizing the complete Visual Impact Analysis for the Jefferson National Forest and will submit the final VIA in February 2017.
- b. On December 13, 2016, Mountain Valley and the FS participated in a conference call to obtain clarification and identify additional “leaf off” KOPs on the October 2016 proposed route through the Jefferson National Forest and the crossing of the ANST. All FS KOPs suggested were incorporated into the FS Visual Impact Assessment (VIA). Based on discussions with the FS and the KOPs provided by the FS, it was Mountain

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Valley's understanding that the FS was in contact with the ATC and RATC and that the FS identified KOPs that were of particular interest to the ATC and RATC.

- c. The KOPs for which Mountain Valley previously provided simulations to the FS include Sugar Camp Farm Trailhead, Craig Creek Road, Brush Mountain, Peters Mountain Wilderness, Mountain's Shadow Trail, and the Appalachian National Scenic Trail crossing location. These simulations were prepared with "leaf-on" conditions. Additional visual analysis has been conducted, including from the Appalachian National Scenic Trail, providing "leaf-off" simulations of the pipeline route at the crossing location and from other KOPs at highly visited nearby locations along the Appalachian National Scenic Trail, including Angels Rest, Dragon's Tooth, Kelly's Knob, Rice Field, and Wind Rock. This analysis included foreground, middle ground, and background views within the Jefferson National Forest (JNF).

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
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Date: February 17, 2017

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Land Use, Transportation, Recreation, and Visual Resources

9. Per the letter dated December 12, 2016 from the FS, update the “seen area” analysis using the currently proposed pipeline route, and perform leaf-off surveys to field verify potential impacts on scenery (including but not limited to views of Sinking Creek and Brush Mountains from State Route 42 and residences along Craig Creek; and roads, trails and communities in valleys on either side of Peters Mountain). Mountain Valley should field verify travelways on NFS lands, including roads and trails, photographing the locations. The narrative analysis should discuss the lengths along those travelways, duration of view, and angle and aspect of view where the pipeline corridor would be visible along those travelways, in order to assess whether the JNF Scenic Integrity Objectives (SIO) would be met. Document communication with the FS and BLM before completion of the updated seen area analysis to ensure that meets agency requirements.

Response:

A visual analysis was prepared from various points along the Appalachian National Scenic Trail, providing “leaf-off” simulations of the pipeline route at the crossing location and from other KOPs at highly visited nearby locations along the Appalachian National Scenic Trail, including Angels Rest, Dragon’s Tooth, Kelly’s Knob, Rice Field, and Wind Rock. This analysis included foreground, middle ground, and background views within the JNF. In addition, viewshed analyses (i.e., maps identifying the seen area) were prepared for each of these KOPs and are included in the FS Visual Impact Analysis (VIA). Mountain Valley met with FS representatives on a conference call on December 13, 2017. During this meeting, KOPs and seen areas were confirmed and direction was provided for completion of the visual analysis for Craig Creek Road.

The overall viewshed analysis for FS lands is included in Attachment DR4 Land Use 9a. This provides bare-earth visibility from along the pipeline corridor for the entire route through JNF. For the pipeline route between Brush Mountain and Peters Mountain, this analysis indicated that there would be large swaths of visibility ranging from 5.0 to almost 7.0 miles from the pipeline. However, it should be noted that the viewshed analysis was prepared using bare-earth conditions, and thus the visibility of the pipeline right-of-way is highly exaggerated due to the assumed absence of surrounding screening vegetation. A series of viewshed analyses was also prepared for each of the KOPs identified for other areas of concern in the JNF including Sugar Run Mountain, Sinking Creek Mountain, the Audie Murphy Monument, Sawtooth Ridge, and the Appalachian

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National Scenic Trail crossing on Peters Mountain. The VIA for FS lands discusses compliance with SIOs on FS property.

A viewshed analysis was conducted along Craig Creek Road. As with the other viewshed analyses, it should be noted that this analysis was conducted with bare-earth conditions, which significantly exaggerates the potential of visibility due to the assumed lack of any screening vegetation between the roadway and pipeline right-of-way. Simulations were also prepared for potentially visible areas along Craig Creek Road. The viewshed analysis for Craig Creek Road was prepared for areas between the first point of visibility and end of visibility while driving along the road, as determined during the December 2016 fieldwork. This analysis showed that there would be approximately 1.8 miles of potential visibility along that particular stretch of roadway (Attachment DR4 Land Use 9b). Even with leaf-off conditions, there is little visibility from Craig Creek Road of the pipeline right-of-way on Sinking Creek Mountain and Brush Mountain. Factoring in the existing vegetation along the roadway, there are few areas where the right-of-way would be visible from the roadway. None of these areas of visibility are on the JNF or from the residences along Craig Creek Road. Due to this lack of visibility of the right-of-way, there would be no visual impacts to users of Craig Creek Road on FS-managed lands or the residences along the road.

A bare-earth viewshed analysis was performed for a seven-mile stretch of State Route 42 starting southwest of the pipeline crossing of State Route 42 and crossing the Appalachian National Scenic Trail close to the community of Huffman (see Attachment DR4 Land Use 9c). The viewshed analysis indicated that almost the entire stretch of roadway would have visibility of the right-of-way as it travels through the Sinking Creek valley before turning southwest and crossing Sinking Creek Mountain. While the bare-earth viewshed highly exaggerates the visibility of the right-of-way because it assumes no screening vegetation, the existing vegetation in the valley would likely screen most views along State Route 42. It is anticipated that the dominant vegetation in the Sinking Creek valley would screen views and result in limited visual impact with the exception of the crossing of Sinking Creek Mountain.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 17, 2017

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10. File an analysis of the locations and acres of the pipeline route visible on the JNF from the ANST where the Scenic Integrity Objective (SIO) would be changed from High or Moderate to a lower SIO as a result of proposed Plan Amendment 1 to reallocate 186 acres to prescription area 5C.

Response:

Mountain Valley expects to file a response by February 23, 2017.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 17, 2017

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Land Use, Transportation, Recreation, and Visual Resources

11. Address the letter dated December 19, 2016 from the Virginia Outdoors Foundation (VOF, accession number 20161219-5102). In particular, provide an analysis of project impacts from a proposed access road across VOF Parcel #102-00-01-02-0000; and a copy of a 7.5-minute USGS topographic quadrangle map showing the access road in relationship to the VOF parcel and Honeysuckle Road.

Response:

The application originally submitted for the crossing of VOF Parcel #102-00-01-02-0000 was to utilize an existing private dirt road off of Cove Hollow Trail/Honeysuckle Road for a temporary access road. However, after conducting wetland and waterbody surveys in the surrounding environment, Mountain Valley determined that the section of right-of-way between approximate MP 237.6 and MP 239.7 would be inaccessible from other access points without significant stream or wetland encroachment (see the map provided in Attachment DR4 Land Use 11). Therefore, to avoid these environmental concerns, the access road will need to be retained for permanent access instead of temporary as originally proposed.

The proposed pipeline right-of-way does not cross the VOF property easement. Instead, only the proposed permanent access road MVP-RO-279.01 crosses the VOF property easement. Therefore, impacts would be limited to disturbance for improvement and subsequent use of the access road. The existing road on the VOF parcel is currently approximately 10 feet wide and 675 linear feet, which equates to 0.15 acres of existing road. Mountain Valley proposes up to a 40-foot-wide workspace, which would include the width of the existing road, so a 30-foot wide incremental impact, to allow for equipment access. The workspace would equate to an incremental impact of 0.47 acres on the VOF parcel.

The existing private road would require upgrades such as grading, moderate widening, trimming of vegetation, and stabilization with stone. Access would generally be with light to medium duty vehicles and equipment during operations, however, larger equipment will be used during construction. Frequency of use will vary and will be based on what is required to maintain compliance along with the safety and integrity of the pipeline. At a minimum, annual access should be assumed. Examples of maintenance activities would include One Call response as required by law, monitoring of infrastructure related to cathodic protection as required, mowing of the right-of-way (three year cycle anticipated), and road maintenance as required to ensure compliance with the easement agreement. Mountain Valley will install a gate upon request.

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Mountain Valley continues to coordinate with the VOF regarding the proposed access road, and plans to pursue a permanent easement option through the Conversion of Open Space application process pursuant to Virginia Code Section 10.1-1704. Additionally, as mentioned in the VOF letter, naming convention for the tax map parcel number and state road have been updated accordingly.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: February 17, 2017

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Land Use, Transportation, Recreation, and Visual Resources

12. Acreage impacts from access roads provided in the updated land use impact tables filed on October 20, 2016 (DEIS table 2.3-1 and DEIS table 4.8.1-1) are not consistent with the total acreage impacts calculated from the updated access road table (DEIS Appendix E-1) also filed on October 20, 2016. Many of the access roads in the updated Appendix E-1 still contain “TBD” for information such as status, existing surface type, proposed modifications, and anticipated acres of improvements. Additionally, due to formatting or other reasons many of the updates provided in the updated Appendix E-1 are not visible. Provide an updated access road table with the missing information and provide revised tables for access roads and/or land use that consistently report the acreage impacts from access roads. For access roads that have not yet been surveyed, use a desktop analysis to estimate acreage impacts and potential need for upgrades. Ensure the table is formatted to show all updates.

Response:

A revised Appendix E-1 is provided as Attachment DR4 Land Use 12. All acreages within the Appendix are applicable to draft EIS tables 2.3-1 and 4.8.1-1.

Respondent: John Uhrin
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Date: February 17, 2017

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13. Several tables from the October 2016 submittal included updated acreage numbers but had project total or subtotal rows or columns that were not updated. Ensure all tables contain updated subtotals and totals to reflect the new acreages impacted, including, but not limited to, tables: 2.3-1, 4.3.3-1, 4.4.2-1, and 4.8.1-1.

Response:

Tables 2.3-1, 4.3.3-1, 4.4.2-1, and 4.8.1-1 have been revised to reflect updated subtotals and totals and are provided as Attachment DR4 Land Use 13. Mountain Valley reviewed all other tables and did not find errors in the totals or subtotals.

Respondent: Megan Neylon
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14. Clarify the following issues with the residential site specific plans and table 8-C:
- a. Drawing number RSS-H600-138 shows a structure labelled as a “House” within 44.6 feet of work space as well as three other structures but the drawing number is not listed in table 8-C. Update table 8-C to include a reference to this drawing number and these structures; and
 - b. Residential site specific plans are included for structures labelled “Building” in drawing numbers RSS-H600-030 and RSS-H600-085. Clarify whether these structures are residences.

Response:

- a. Drawing number RSS-H600-138 filed on April 21, 2016 identified several structures within 50 feet of the construction workspace for access road MVP-MN-264. As indicated in Appendix E-1 (Access Roads for the Mountain Valley Pipeline) filed on October 20, 2016 for the October 2016 Proposed Route, access road MVP-MN-264 has been removed from the Project; therefore, the structures identified on drawing RSS-H600-138 are no longer within 50 feet of the construction workspace for the Project.
- b. The structure identified as a “Building” in drawing RSS-H600-030 is a shed, not a residence. In drawing RSS-H600-085 the “Building” shown is a residence. This drawing has been updated to reflect that clarification, and is included as Attachment DR4 Land Use 14b.

Respondent: Kevin Wagner
Position: Land Director
Phone Number: 304-627-6431
Date: February 9, 2017

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Land Use, Transportation, Recreation, and Visual Resources

15. Provide a discussion of visual impacts associated with the crossings of the Lower Greenbrier River Byway (MP 171.3) and the Lowell Backway (MP 171.9). Include measures that would be implemented by Mountain Valley to avoid, minimize, or mitigate impacts on those by-way crossing locations.

Response:

Mountain Valley is applying for typical road crossing permits at these two locations. For the Lower Greenbrier River Byway, MP 171.3 – WV 3 (in Summers County, WV), Mountain Valley has requested a conventional bore construction method. For the Lowell Backway, MP 171.9 – County Road 15 Lowell Rd (in Summers County, WV), Mountain Valley is requesting an open-cut construction method.

A viewshed analysis with vegetation heights was performed from the crossing of the Lower Greenbrier River Byway in the vicinity of MP 171.3 (Attachment DR4 Land Use 15a). The crossing would be at a perpendicular angle to shorten view duration and would parallel an existing transmission right-of-way. The viewshed analysis indicated that there would be approximately 0.1 mile of visibility at the crossing of the roadway. This visibility would be localized and of short duration due to speeds in excess of 45 miles per hour. It is anticipated that due to the perpendicular crossing located parallel to an existing right-of-way, use of a conventional bore crossing method, and short duration of the view by travelers along the roadway, there would be low visual impact to the Lower Greenbrier River Byway.

A viewshed analysis with vegetation heights was performed from the crossing of Lowell Road (Lowell Backway) in the vicinity of MP 171.9 (Attachment DR4 Land Use 15b). The crossing would be at a perpendicular angle to shorten view duration. The viewshed indicated that there would be approximately 0.2 miles of visibility at the crossing of the roadway. This visibility would be localized and of short duration due to speeds in excess of 45 miles per hour. It is anticipated that due to the perpendicular crossing and short duration of the views by travelers along this roadway, there would be low visual impacts to Lowell Road.

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Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: February 17, 2017

**Mountain Valley Pipeline, LLC
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Land Use, Transportation, Recreation, and Visual Resources

16. In response to comments received, provide a discussion of visual impacts that may occur for hikers on the Alleghany Trail (F.T. #701), Cascades National Recreation Trail (F.T. #70), and the Mountain Lake Wilderness looking at the pipeline corridor. Include measures that Mountain Valley would implement to avoid, minimize, or mitigate project-related visual impacts on those trails and their users.

Response:

A viewshed analysis was conducted at the intersection of the Alleghany Trail and the Appalachian National Scenic Trail on Peters Mountain (Attachment DR4 Land Use 16a). The viewshed analysis indicated that there would be potential visibility of up to 2.3 miles both north and south of Peter's Mountain though not at the crossing of the Project on FS lands. It should be noted that the viewshed was conducted with bare-earth conditions, which significantly exaggerate the potential of visibility. Even with bare-earth conditions, there is little visibility on Peters Mountain and is localized to just adjacent to the KOP. Due to lack of visibility of the Project crossing on Peters Mountain and therefore FS-managed lands, there would be no visual impacts to FS-managed lands as a result of the Project crossing. Due to the lack of visual impacts there would be no need for mitigation and avoidance measures to lower visual impacts to the trail and trail users.

A bare-earth viewshed analysis was conducted at the trailhead or closest point of the Cascade Trail and the Mountain Valley corridor (Attachment DR4 Land Use 16b). The Cascade Trail leads to Cascade Falls, which is over 2.0 miles northeast of the trailhead. The viewshed analysis indicated that there would be no potential visibility of the pipeline right-of-way from this trail head. Even with bare-earth conditions, there is no visibility of the right-of-way, which would be further assured by the surrounding dominant vegetation. Due to no visibility of the right-of-way, there would be no visual impacts to the Cascade Trail. Due to the lack of visual impacts, there would be no need for avoidance or mitigation measures to lower visual impacts to the trail and associated trail users.

A simulation was created for the Wind Rock Overlook on the Appalachian National Scenic Trail, which is the main overlook point on the border of the Mountain Lake Wilderness Area. The simulation, which is included in the FS Visual Impacts Analysis, shows that the Project would not be visible and therefore there would be no visual impacts to the Wind Rock Overlook. Because the simulation was created at an overlook on the border of the wilderness area, it can be assumed that the Project would not be

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visible for recreational users within the wilderness area because those users would be further away from the Wind Rock Overlook, the ANST is in a heavily wooded area, and the ANST's route around Salt Pond Mountain creates an additional visual barrier. Due to the lack of visual impacts, there would be no need for avoidance and mitigation measures to lower visual impacts to the Wilderness Area.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 17, 2017

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Land Use, Transportation, Recreation, and Visual Resources

17. Document communications with the FS and BLM regarding the currently proposed pipeline route crossing of Craig Creek. Mountain Valley indicated to the FS that it went back to the original October 2015 route for the crossing of Craig Creek. The shapefiles submitted to the FS do not satisfy the FS requests, and that part of the route is inconsistent with Forest Plan standards and other guidance. That route also crosses an unnamed tributary which the FS said should be avoided.

Response:

Mountain Valley is finalizing its evaluation of two alternative routing alignments between MPs 219.5 and 220.0 in the area of Craig Creek. Mountain Valley is consulting with the FS on the alternatives analysis. Mountain Valley expects to submit the final analysis by the end of February 2017.

Respondent: Megan Neylon
Position: Supervisor - Environmental Permitting
Phone Number: 724-873-3645
Date: February 17, 2017

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Alternatives

1. Attachment B (Minor Route Variations and Deviations Incorporated into the October 2016 Proposed Route), filed on October 13, 2016, indicates that 45 new landowners could be affected by the route modifications. Indicate the number of these new landowners that have signed an easement agreement with Mountain Valley.

Response:

Upon further review, the total number of newly affected landowners has been reduced from 45 to 44. Mountain Valley has signed five easement agreements with these landowners.

Respondent: Kevin Wagner
Position: Land Director
Phone Number: 304-627-6431
Date: February 9, 2017

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Alternatives

2. Revise Attachment B (Minor Route Variations and Deviations Incorporated into the October 2016 Proposed Route), filed on October 13, 2016, to add a column for parcel numbers for each data row, and denote which parcel numbers are new.

Response:

Attachment B has been revised to note the parcels affected by the route change and denotes the new parcels in red font. The revised Attachment B is provided as Attachment DR4 Alternatives 2.

Respondent: Kevin Wagner
Position: Land Director
Phone Number: 304-627-6431
Date: February 9, 2017

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Alternatives

3. Address the September 9, 2016 letter from the VADCR (accession number 20160909-5315). In particular, conduct an analysis of the VADCR's recommended route realignment around the Slussers Chapel Conservation Site in comparison to the corresponding segment of the currently proposed route (filed October 14, 2016) between about MPs 220.7 to 227.3 in Montgomery County, Virginia, the October 14, 2016 proposed route, and the October 2015 application route. Include a copy of a 7.5-minute USGS topographic quadrangle map illustrating the VADCR alternative route, October 2016 route, and October 2015 route in this area. The analysis should include the following comparative information in tabular format:
 - a. length (in miles) of the VADCR's suggested Slussers Chapel Conservation Site Avoidance Alternative route in comparison to the comparable portions of the October 2016 proposed route and October 2015 application route;
 - b. acreage of both the permanent and construction rights-of-way;
 - c. total size (acres) of non-typical work areas required;
 - d. distance (miles) of crossing of VADCR-designated conservation sites;
 - e. number of residences within 50 feet of the edge of the construction right-of-way;
 - f. number of springs and domestic water supply wells within 150 feet of the centerline;
 - g. number of waterbodies crossed, and total length (in feet) of all waterbody crossing combined;
 - h. number of wetlands crossed, total length (in feet) of all wetland crossings combined, and total wetland acres affected;
 - i. number of karst features, sinkholes, or caves within 50 feet of the construction right-of-way;
 - j. acres of habitat for federally listed species;
 - k. number of known archaeological or historic sites;
 - l. miles of federal lands crossed;
 - m. miles of federally-designated Wilderness Areas crossed;
 - n. acres of agricultural land affected

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- o. acres of forest cleared; and
- p. miles of right-of-way that would be parallel or adjacent to existing rights-of-way.

Response:

The requested analysis is included in Attachment DR4 Alternatives 3.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: February 17, 2017

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Alternatives

4. Provide an undated analysis of the October 14, 2016 proposed route in comparison to the Hybrid 1A and 1B alternatives previously filed by Mountain Valley on April 21, 2016. Again, include appropriate maps, a narrative discussion of the alternatives, and a table comparing impacts on specific environmental resources, as listed in Alternatives Question #3 above.

Response:

The requested updated map is included in Attachment DR4 Alternatives 4a, and updated table comparing impacts is included in Attachment DR4 Alternatives 4b. An analysis of the alternatives is included below.

Hybrid Alternative 1A

Hybrid Alternative 1A includes the northern half of the October 2016 Proposed Route, and the southern half of Alternative Route 1 as described in Section 10.5.2 of Resource Report 10 filed with FERC in October 2015, with the switch being at about MP 135 of the October 2016 Proposed Route.

Hybrid Alternative 1A is approximately 310 miles in length and is collocated with existing utilities for approximately 81 miles (26 percent) without considering the constructability concerns associated with collocation. Hybrid Alternative 1A is located in a predominantly forested, low-density rural area with several small towns and patches of hay and pasture land. Hybrid Alternative 1A crosses the Blue Ridge Parkway, the Jefferson National Forest, and the Appalachian National Scenic Trail adjacent to existing 138-kilovolt (kV) overhead electric transmission lines. Hybrid Alternative 1A crosses within one-half mile of the political boundary of 12 cities or towns and crosses 1.6 miles of National Forest System lands. The alternative crosses approximately 237 miles of forested lands, including 1,518 feet of forested wetland as mapped by the National Wetland Inventory (NWI), and 117 perennial waterbodies. Further, Hybrid Alternative 1A would cross the New River twice, while the Proposed Route would not cross this river.

As described in Section 10.5.2 of Resource Report 10 and in an April 21, 2016 supplemental filing with FERC, Mountain Valley has identified concerns associated with both the northern half and the southern half of Route Alternative 1. These concerns are not changed by the relatively minor route modifications that have been included in the October 2016 Proposed Route. Based on aerial flyover review there is approximately 50 miles of severe side slope crossed by the southern half of Route Alternative 1. Based on

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a model run to evaluate severe side slope along the entire Hybrid Alternative 1A, the alternative crosses about 177 miles of side slope. Mountain Valley asserts that Hybrid Alternative 1A would not provide an environmental advantage over the October 2016 Proposed Route and would present additional construction challenges.

Hybrid Alternative 1B

Hybrid Alternative 1B includes the northern half of Alternative Route 1 as described in Section 10.5.2 of Resource Report 10, and the southern half of the October 2016 proposed route, with the switch being at about MP 135 of the October 2016 Proposed Route.

Hybrid Alternative 1B is approximately 318 miles in length and is collocated with existing utilities for approximately 86 miles (27 percent) without considering the constructability concerns associated with collocation. Hybrid Alternative 1B is located in a predominantly forested, low-density rural area with several small towns and patches of hay and pasture land. Hybrid Alternative 1B crosses the Blue Ridge Parkway, the Jefferson National Forest, and the Appalachian National Scenic Trail at locations of new right-of-way. Hybrid Alternative 1B crosses within one-half mile of the political boundary of 15 cities or towns and crosses 3.4 miles of National Forest System lands. The alternative crosses approximately 250 miles of forested lands, including 1,935 feet of forested wetland as mapped by the NWI, and 115 perennial waterbodies.

As described in Section 10.5.2 of Resource Report 10 and in an April 21, 2016 supplemental filing with FERC, Mountain Valley has identified concerns associated with both the northern half and the southern half of Route Alternative 1. These concerns are not changed by the relatively minor route modifications that have been included in the October 2016 Proposed Route. Based on aerial flyover review there is approximately 50 miles of severe side slope crossed by the northern half of Route Alternative 1. Based on a model run to evaluate severe side slope along the entire Hybrid Alternative 1B, the alternative crosses about 180 miles of side slope. Mountain Valley asserts that Hybrid Alternative 1B would not provide an environmental advantage over the October 2016 Proposed Route and would present additional construction challenges.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: February 17, 2017

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Alternatives

5. Provide an environmental, technical, and feasibility comparison of an alternative route that would leave the proposed route between MP 238 to MP 239, progress eastward or southeastward approximately 2.2 miles to an existing powerline corridor, follow along the west and/or east side of that corridor and then turn westward to parallel the north side of the existing powerline corridor that intercepts the proposed route near MP 242.1. Include appropriate maps, a narrative discussion, and a table comparing impacts between the October 14, 2016 proposed route and this alternative route on specific environmental resources, as listed in Alternatives Question #3 above.

Response:

The suggested alternative is in the area of Poor Mountain, in Roanoke County, Virginia. Mountain Valley identified a potential route as requested (FERC Poor Mountain Variation) shown on maps included in Attachment DR4 Alternatives 5a, and compared to the proposed route in a comparison table included in Attachment DR4 Alternatives 5b, and described below.

FERC requested that the alternative begin somewhere between MP 238 and 239. Because of steep slopes on the north side of Poor Mountain (see aerial image included in Attachment DR4 Alternatives 5a), the alternative would need to begin as far north as possible, or nearer to MP 238 than MP 239. To avoid residences in the Cove Road area, Mountain Valley identified a start point at MP 238.2 of the October 2016 Proposed Route.

The FERC Poor Mountain Variation would leave the October 2016 Proposed Route near MP 238.2, where it would turn east then north for about 1.2 miles, avoiding residences in the Cove Road area, to a point south of Spring Hollow Reservoir. The variation would then turn sharply southeast for about 0.8 mile and follow a segment of the pipeline route previously proposed during pre-filing (see Poor Mountain East Variation, included in Resource Report 10 filed October 2015), before turning east for about 0.4 mile before reaching existing overhead electric powerline right-of-way. The variation would then turn southeast, following the powerline right-of-way for about 2.8 miles. In this section the powerline right-of-way is along a ridgeline, and the pipeline would need to be placed along the side of ridge adjacent to the powerline. Also, in this section the variation would need to be along the east side of the powerline right-of-way where crossing Poor Mountain Road to avoid houses, then crossover to the west side of the powerline to avoid houses before crossing Willett Lane. The variation would then turn west and follow the

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north side of an existing powerline right-of-way for about 0.6 mile before rejoining the October 2016 Proposed Route at MP 242.05.

The FERC Poor Mountain Variation would bring the pipeline closer to two locations where significant concern was voiced during early planning and the FERC pre-filing process – Spring Hollow Reservoir and Camp Roanoke. As a result of those concerns Mountain Valley moved the proposed route further to the west and south in this location. The original pipeline route in this area was evaluated as the Poor Mountain East Variation in Mountain Valley's October 2015 application to FERC. At the closest point the FERC Poor Mountain Variation would be about 0.2 mile from Spring Hollow Reservoir, while at the closest point the Proposed Route would be about 0.9 mile from the reservoir. At its closest point the variation would be about 0.4 mile southwest of Camp Roanoke, while the Proposed Route at its closest point is about 1.5 miles west of Camp Roanoke. As noted above and shown in the aerial image (Attachment DR5 Alternative 5a), moving the variation further south, away from these two areas of concern, would require crossing over a mile of the steep north flank of Poor Mountain, mostly along steep side slope. Although the variation would follow about 2.8 miles of existing powerline right-of-way east of Poor Mountain, the powerline right-of-way is along a ridgeline, and the pipeline would need to be placed along the side of the ridge adjacent to the powerline, which would require side-slope construction. For these reasons Mountain Valley asserts the FERC Poor Mountain Variation is not a reasonable variation, would not provide any environmental advantage over the Proposed Route in this area, and any environmental advantage would be outweighed by the above-described constructability concerns.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: February 17, 2017

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Alternatives

6. Based on comments received from an affected landowner (see accession number 20161223-5085), evaluate alternatives to using proposed access road MVP-RO-279.01 located near MP 239.3 that crosses through a VOF conservation easement. Confirm whether MVP-RO-279.01 would follow an existing road and provide details regarding any disturbance associated with constructing, improving, or connecting the road to the right-of-way. Also confirm whether MVP-RO-279.01 would be a temporary or permanent access road.

Response:

Mountain Valley is proposing to improve an existing private dirt road off of Honeysuckle state road for permanent access to the proposed pipeline for construction and operation, labeled MVP-RO-279.01. After conducting wetland and waterbody surveys in the surrounding environment, Mountain Valley determined that the section of right-of-way between approximate MP 237.6 and MP 239.7 would be inaccessible from other access points without significant stream or wetland encroachment (see the map provided in Attachment DR4 Land Use 11). Therefore, to avoid these environmental concerns, the access road will need to be retained for permanent access instead of temporary as originally proposed.

The proposed pipeline right-of-way does not cross the VOF property easement. Instead, only the proposed permanent access road MVP-RO-279.01 crosses the VOF property easement. Therefore, impacts would be limited to disturbance for improvement and subsequent use of the access road. The existing road on the VOF parcel is currently approximately 10 feet wide and 675 linear feet, which equates to 0.15 acres of existing road. Mountain Valley proposes up to a 40-foot-wide workspace, which would include the width of the existing road, so a 30-foot wide incremental impact, to allow for equipment access. The workspace would equate to an incremental impact of 0.47 acres on the VOF parcel.

The existing private road would require upgrades such as grading, moderate widening, trimming of vegetation, and stabilization with stone. Access would generally be with light to medium duty vehicles and equipment during operations, however, larger equipment will be used during construction. Frequency of use will vary and will be based on what is required to maintain compliance along with the safety and integrity of the pipeline. At a minimum, annual access should be assumed. Examples of maintenance activities would include One Call response as required by law, monitoring of infrastructure related to cathodic protection as required, mowing of the right-of-way

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(three year cycle anticipated), and road maintenance as required to ensure compliance with the easement agreement. Mountain Valley will install a gate upon request.

Any alternative to this access road would involve clearing forest on tracts that have not been previously disturbed, which would significantly increase environmental impacts. By utilizing this VOF parcel, Mountain Valley would mitigate these impacts by using an existing road corridor. The proposed access road utilizing this VOF parcel provides significant environmental advantages as compared to greenfield construction.

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: February 17, 2017

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Alternatives

7. Provide an analysis of the October 14, 2016 proposed route in comparison to alternative routes suggested by the NPS for crossing the Blue Ridge Parkway (BRP). Document all communications with the NPS regarding the crossing of the BRP.

Response:

Alternatives analyses are contained in three separate documents submitted to the National Park Service:

1. SF-299 (Nov 11, 2016) (Attachment DR4 Alternatives 7a);
2. SF-299 Additional Information (Dec 20, 2016) (Attachment DR4 Alternatives 7b); and
3. Visual Impact Assessment (January 11, 2017) (Attachment DR4 Alternatives 7c).

A correspondence table summarizing communications with NPS is included as Attachment DR4 Alternatives 7d.

Additionally, the following reports supporting information in the SF-299 Application and the SF-299 Additional Information are attached:

4. Wetland Report (Feb 2017) (Attachment DR4 Alternatives 7e);
5. Rare, Threatened, and Endangered Species Reports (October 2016 and Feb 2017) (Attachment DR4 Alternatives 7f (PRIVILEGED));
6. Cultural Resource Phase 1 (Nov 2016) (Attachment DR4 Alternatives 7g - PRIVILEGED);
7. SEAC Acceptance (Attachment DR4 Alternatives 7h);
8. Cultural Resource Phase 1 Alt 3 (Jan 2017) Attachment DR4 Cultural Resources 8d (PRIVILEGED);
9. SEAC Acceptance (pending);
10. Phase 2 (Feb 2017) Attachment DR4 Cultural Resources 11e (PRIVILEGED);
11. SEAC Acceptance (pending); and

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12. Updated alignment sheets and site-specific drawings for the Blue Ridge Parkway crossing (Attachment DR4 Alternatives 7i).

Respondent: Ricky Myers
Position: Engineering Manager
Phone Number: 724-873-3640
Date: February 17, 2017

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Alternatives

8. Attachment B of Mountain Valley's December 22, 2016 filing indicates that Mountain Valley is revising the POD for the FS to remove open trenching as an alternative means of crossing the ANST. Mountain Valley states that an HDD under the ANST is not a feasible alternative because of engineering reasons. Therefore, provide an alternative plan and methods for crossing the ANST in the event that the proposed bore fails.

Response:

See Attachment DR4 Alternatives 8 for the Bore Contingency Plan for the ANST crossing.

Respondent: John Uhrin
Position: Construction Director
Phone Number: 724-873-3497
Date: February 9, 2017

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Alternatives

9. Update table 3.5.3-1 filed on December 22, 2016 (Attachment DEIS Recommendation-16), with conclusions wherever possible and/or new information, for pending minor route variations. For example:
 - a. Landowner negotiations were ongoing for issues associated with parcels noted in accession numbers 20150316-5023 and 20150609-5017;
 - b. Provide the apparently missing analyses associated with “Variation 82” as mentioned for accession number 20160601-5121;
 - c. The response for accession number 20150616-5100 only mentions access roads (confirm the apparent assertion that Mountain Valley would use only existing access roads on these parcels and clarify and provide details if there would be any disturbance associated with constructing, improving, or connecting any access road on these parcels), but makes no mention of alternative pipeline right-of-way routing analyses; and
 - d. Mountain Valley indicated that it “continues to evaluate” the parcels associated with accession number 20160406-5119.

Response:

Since December 22, 2016, there have been no changes to Table 3.5.3-1.

- a. Negotiations are continuing. No change.
- b. On July 18, 2016, Mountain Valley filed with FERC an analysis of the New River Conservancy Variation (a.k.a. Variation 82). This is the analysis cited in table 3.5.3-1. There have been no changes to the proposed route in this location since the filing in July 2016, with the exception of milepost adjustments. A revised figure that includes the updated mileposts is included as Attachment DR4 Alternatives 9b-1. The analysis included with the filing in July 2016 is also included below for convenience, updated to reflect the revised mileposts.

Variation 82 would begin at MP 203.3 just south of the crossing of Route 688/Hendrickson Road, where it would turn south from the existing AEP right-of-way and continue across mixed wooded and open land for about 0.3 mile, then turn southeast for another 0.3 mile crossing Route 753/Big Branch Hollow Road. The variation would then turn south, crossing Route 623/Cascade Drive for 0.4 mile, then turn east for 0.8 mile across a wooded

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hill, parallel to and just south of the New River Conservancy easement, before rejoining the Proposed Route at MP 204.7 after crossing Route 618/Collins Ave.

A comparison table with the proposed route was included with the filing on July 18, 2016 and for convenience is also included herewith as Attachment DR4 Alternatives 9b-2. The variation would be about 0.4 mile longer (1.8 miles compared to 1.4 miles) than the corresponding segment of the October 2016 Proposed Route. While the Proposed Route collocates with an electric transmission line for 1.0 mile total and collocates for the entire length of the segment through the subject easement to reduce forest fragmentation, the variation does not collocate with any existing right-of-way. The variation would require about 6.1 more acres of disturbance during construction, and 2.4 more acres during operation than the corresponding segment of Proposed Route. The variation would cross about 0.4 more mile of forest land and affect about 5.9 more acres of forest land than the proposed route. The variation would also affect about 2.5 acres more agricultural land, and cross more steep slope and side slopes, than the corresponding segment of Proposed Route.

- c. There is no pipeline right-of-way on this parcel. There is only an access road. Mountain Valley has provided detailed responses to the comments raised by the landowner as well as the VOF with regard to this property. See the responses to Land Use, Question 11, and Alternatives, Question 6.
- d. Mountain Valley still has not received survey access. No change.

Respondent: Kevin Wagner
Position: Land Director
Phone Number: 304-627-6431
Date: February 17, 2017

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Alternatives

10. Provide an analysis (similar in the format to table 3.5.3-1 from the draft EIS) for any other updated or newly reported landowner or land manager requested minor route variations submitted after the issuance of the draft EIS on September 16, 2016. Address accession numbers 20161221-5350, 20161219-5368, 20161207-0035, 20161201-5118, 20160920-5007, 20161017-0031, 20161220-5182, 20161212-5034 and 20161021-5169. If Mountain Valley cannot make the route adjustments requested by these landowners, explain why.

Response:

Attachment DR4 Alternatives 10 includes a response for the accession numbers identified.

Respondent: Kevin Wagner
Position: Land Director
Phone Number: 304-627-6431
Date: February 17, 2017

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Reliability and Safety

1. In response to a stakeholder comment, provide details regarding the frequency of overflights during operations to monitor the pipeline. Include measures, as appropriate, that Mountain Valley would implement to minimize overflight noise and address privacy concerns.

Response:

Mountain Valley will conduct aerial surveys at least twice per year to ensure safety of the pipeline and compliance with regulations. Aerial patrols and surveys compliment ground-based efforts, and prove to be a safe and effective method to assess the pipeline.

Federal Aviation Administration (FAA) licensed aerial services with gas pipeline survey experience will be utilized, and will follow all applicable FAA rules and regulations governing fixed wing and helicopter aircraft, as appropriate. While conducting surveys, aircraft fly during daylight hours at low altitude and reduced speed directly over the pipeline right of way. Pictures are used on a limited basis to capture specific aspects of the right-of-way or pipeline that may require attention. Per FAA regulations, pilots avoid or increase altitude when approaching congested areas, and all aircraft meet noise certification standards based on aircraft type.

Respondent: Shawn Posey
Position: Senior Vice President – Engineering and Construction
Phone Number: 412-395-3931
Date: February 9, 2017

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Reliability and Safety

2. In response to comments on the draft EIS, discuss how Mountain Valley would determine compensation for affected parties should an incident occur.

Response:

Parties affected by an incident would be compensated for the amount of the loss, as governed by common law or statute. Mountain Valley will have insurance for covered losses, both personal injury or property damage, caused by its operations.

Respondent: Shawn Posey

Position: Senior Vice President – Engineering and Construction

Phone Number: 412-395-3931

Date: February 9, 2017

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Reliability and Safety

3. In response to comments on the draft EIS, revise DEIS table 4.12.1-3 to provide the name of each high consequence area (HCA) as well as the class location for each. As requested by Giles County, include a discussion of the Newport Recreation Center, Newport-Mount Olivet Methodist Church, and Doe Creek Farm as Class 3 HCAs.

Response:

Mountain Valley has revised draft EIS Table 4.12.1-3 (Attachment DR 4 Reliability and Safety 3) to include the class location information for each of the HCAs identified along the alignment. The HCAs are named (e.g., HCA – 1, HCA – 2, etc.).

Newport Recreation Center and Newport-Mount Olivet Methodist Church are located in HCA – 12. Newport Recreation Center is not within a 300-foot proximity of the proposed MVP route, therefore, per 49 CFR 192.5 (b)(3)(ii), it is not included for Class 3 consideration. By the same rationale, Newport-Mount Olivet Methodist Church is not within a 300-foot proximity of the alignment, and is not included for Class 3 consideration. HCA – 12 does not otherwise meet the definition of a Class 3 location as specified in 49 CFR 192.5 (b)(3)(i), and is therefore not designated as Class 3.

Doe Creek Farm is within a 300 feet proximity of the proposed MVP route, and is Class 3 per 49 CFR 192 192.5 (b)(3)(ii).

Areas identified as HCAs will be subject to the same integrity monitoring requirements regardless of their class location designation.

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Phone Number: 724-873-3640
Date: February 17, 2017

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4. We received a comment that the remote signal to close an MLV in the event of an incident would not work if the local area was experiencing a power outage or interruption of cellular service. Provide a discussion of the necessary power and cellular system including backup systems both in the area of the MLV and in the area of the remote control center.

Response:

All MLV sites will have primary and back-up sources of power and telecommunications. Because of the redundancies built in to the station designs, a power outage or interruption of telecommunication service would not affect Mountain Valley's ability to close an MLV. See below for further details.

MLV Power:

The primary power source will be from the local electric utility and the back-up power source will be from solar panels except in the cases where an MLV is adjacent to a compressor or measuring station. The primary power source and back-up power sources will feed into a common distribution block which provides continuous power to the MLV site. Therefore, if one of the sources experiences an outage, the other source continues to provide power to the MLV site. In the unlikely event of a primary power outage and lack of solar power, a battery bank will provide power to the MLV site.

The MLVs adjacent to a compressor or measuring station will be supplied power from the station itself. These stations also have primary and back-up power sources. The process of switching from primary to back-up power sources works in a similar manner as previously stated.

MLV Telecommunications:

The primary telecommunications source will be from either a Very Small Aperture Terminal (VSAT) or cellular service and the back-up telecommunications source will be from the local service provider except in the cases where an MLV is adjacent to a compressor or measuring station. The primary and back-up telecommunication sources will feed into a common router which provides continuous telecommunications to the MLV site. Therefore, if one of the sources experiences an outage, the other source continues to provide telecommunications to the MLV site.

The MLVs adjacent to a compressor or measuring station will be supplied telecommunications from the station itself. These stations also have primary and back-up

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telecommunication sources. The process of switching from primary to back-up telecommunication sources works in a similar manner as previously stated.

Remote Control Center:

Mountain Valley has a primary gas control center and a fully-functional redundant backup gas control center located at a remote facility. Both gas control centers have similar primary and back-up power and telecommunications systems in place.

Reference Material:

Mountain Valley created a table for each MLV site documenting the primary and back-up sources of power and telecommunications. The table is included as Attachment DR4 Reliability and Safety 4a.

Mountain Valley has updated information concerning non-jurisdictional facilities for the October 2016 Proposed Route for the MLVs, Measuring Stations (Interconnects), and Compressor Stations. Mountain Valley has developed the designs and plans for the non-jurisdictional facilities in consultation and coordination with the applicable local utility companies. The site-specific details on planned service equipment and details are located in Attachment DR4 Reliability and Safety 4b (filed as CEII).

Mountain Valley also updated the draft EIS language regarding communication towers, back-up communications, and non-jurisdictional facilities. These updates are in Attachment DR4 Reliability and Safety 4c and Attachment DR4 Reliability and Safety 4d.

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