

3. CONVERSION OF THE BRUSH MOUNTAIN INVENTORIED ROADLESS AREA (IRA) TO A WILDERNESS STUDY AREA

CO 74-7

The present IRA on the north slope of Brush Mountain (the diagonally striped area A-B-E-F-G-A in Figure 1) is essentially the same terrain as in the immediately adjacent Brush Mountain Wilderness (area B-C-D-E-B in Figure 1). In fact, the IRA is steeper than the adjoining wilderness area and therefore more in need of protection from all sorts of vehicles, even if they don't need an actual road. The north slope of Brush Mountain is very steep, so any supposed "erosion mitigation plan" is merely an unrealistic pipedream that will never prevent erosion. Most "mitigation plans" don't actually fix anything, but are mere words to satisfy FERC. Thus, the inevitable erosion of a pipeline going up the slope to the ridge of Brush Mountain would result in significant sedimentation to Craig's Creek which flows along the northwest edge of the diagonally striped area in Figure 1. Sediment in Craig's Creek will have an adverse effect on the availability of essential fresh water for the residents of the Craig's Creek area as well as those residents downstream. Conversion of the IRA to a Wilderness Study Area would be consistent with the present Brush Mountain Wilderness Area and would hopefully be followed by status as a Wilderness Area.

CO74-7

Conversion of the Brush Mountain Inventoried Roadless Area to a recommended wilderness study area is outside the scope of this project. The crossing of Craig Creek and the crossing of the Brush Mountain IRA have been intensely studied by MVP and the FS because of the concerns in this comment. The effects are discussed in section 3.5.3.1. Mountain Valley has committed to restoring the riparian area along the tributary to Craig Creek with hand planted trees and shrubs.

4. DANGERS OF THE PIPELINE TO THE MOUNT TABOR AREA

CO 74-8

The Mountain Valley Pipeline (MVP) is shown as the medium blue line in Figure 1 with mile markers. That route is the October 2015 proposed route which was superseded on 15 October 2016 by a nearby route. Both routes pass through the Slusser's Chapel Conservation Site which is dangerously susceptible to damage from construction blasting and contamination from pipeline leaks during operation as well as fuel spills during construction. The reason for that susceptibility is the karst bedrock that over time has formed the deep, multi-layered, highly connected underground passages that constitute the aquifer supplying the water to hundreds of homes in the Mount Tabor area. The resulting general nature of karst in the Mount Tabor area is schematically represented in Figure 3.

CO74-8

Section 3.5 of the final EIS has been updated to provide additional information regarding alternative routes across the Mount Tabor Sinkhole Plain. Section 4.1 of the final EIS has been revised to provide additional details regarding karst features in the project area.

The Mount Tabor Aquifer is made up of all the underground conduits, passages, and caverns that underlie the Mount Tabor Area such as those illustrated in Figure 3. That the Mount Tabor Aquifer is

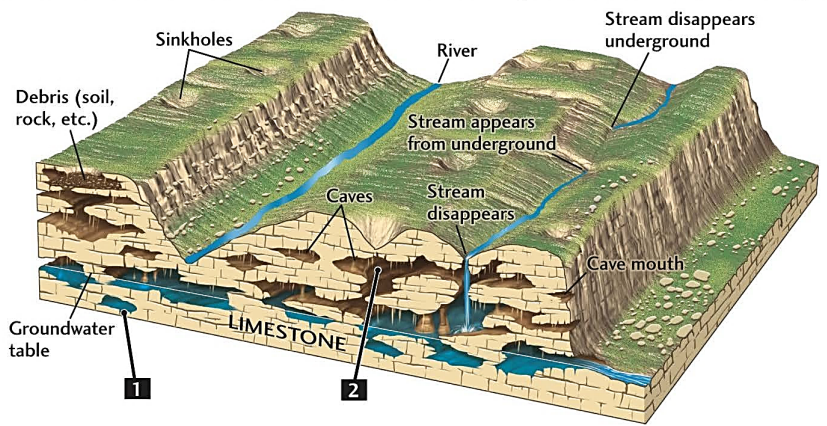


Figure 3 The Nature of Karst Geology in the Mount Tabor Area

COMPANIES AND NGOs

CO74 –Western Montgomery County Landowners Association

20161222-5178 FERC PDF (Unofficial) 12/21/2016 10:54:20 PM

highly connected throughout the Mount Tabor area is vividly demonstrated with dye-trace studies shown in Figure 4. There, the 15 October 2016 MVP route is displayed as the parallel light-blue lines with red plus signs in four locations. Those locations are crucial points of the danger to the Slusser's Chapel Conservation Site because erosion and resulting sedimentation at those points would go to the Slusser's Chapel Cave which is the central underground feature of the Mount Tabor Aquifer. That is, all underground passages and streams such as Mill Creek lead to the Slusser's Chapel Cave! Points 1 and 2 are crossings of a stream that is the convergence of three streams running down the south slope of Brush Mountain. That stream is fast-running and very turbulent during heavy rains and carries sediment from erosion directly to Slusser's Chapel Cave. Point 3 is the crossing of Mill Creek which also is fast-running and turbulent during heavy rains. Point 4 is the crossing of two tributaries of Mill Creek that are milder streams than those at the first three points. Thus, the extra sediment caused by pipeline construction and use that is carried to Slusser's Chapel Cave could contaminate or even clog the cave. The point is that the 15 October 2016 MVP route presents significant danger to all regions of the Mount Tabor Aquifer because the area is so highly inter-connected by many, many *unknown* underground conduits of water flow. Moreover, the pipeline company has no idea where new sinkholes will develop along the route. In fact, new sinkholes develop on an almost yearly frequency in this karst area. The Mount Tabor area residents all rely on the Mount Tabor Aquifer as their sole source of water! Thus, we cannot afford to have the aquifer be contaminated or destroyed.

CO
74-8
cont.

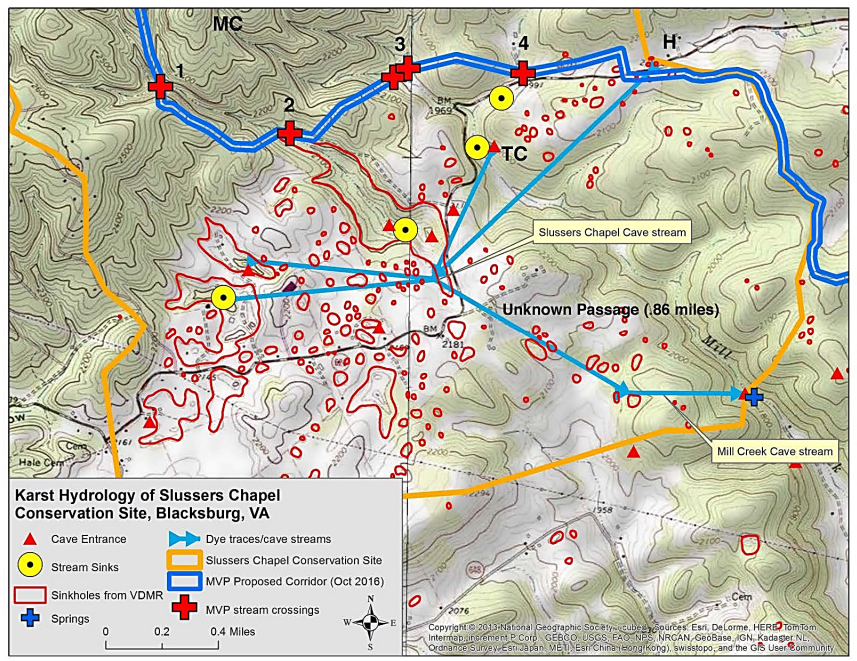


Figure 4 Karst Hydrology of the Slusser's Chapel Conservation Site

COMPANIES AND NGOs
CO74 –Western Montgomery County Landowners Association

5. CONCLUDING REMARKS

The Western Montgomery County Landowners Association is convinced that the FERC-required Amendments to the Forest Service Land and Resource Management Plan (LRMP) for the Jefferson National Forest are all unworthy of being adopted and should be rejected out of hand. In fact, each of the amendments is a significant downgrade in the presently required nature of the Jefferson National Forest that would be a real shame to have happen. They are all outrageous degradations in forest quality, and we cannot comprehend why they would even be considered. The forest plan has been carefully thought out over many years. There is no valid reason to essentially throw that plan away as would be required to accommodate a pipeline. The forest cannot be used for private purposes such as financial gain and certainly not to the detriment of citizens who live near the forest and the broader group of citizens who use the forest.

The Western Montgomery County Landowners Association also requests that the Forest Service designate the Inventoried Roadless Area on the north slope of Brush Mountain as a Category 1B Wilderness Study Area to prevent further despoiling of the Jefferson National Forest.

We sincerely hope that both our requests are honored. The Forest Service are the stewards of the forest, and we rely upon you to exercise the highest standards for use of the forest!

In order to avoid an ecological disaster in the Mount Tabor area, our requests are crucial. Otherwise, a pipeline passing through the Slusser’s Chapel Conservation Site would have a high probability of contaminating, or even destroying, the Mount Tabor Aquifer upon which hundreds of homes rely upon for their sole source of water. That disaster would render the Mount Tabor area uninhabitable without water. Our motto is **DYMWOW**, i.e., Don't You Mess With Our Water! Of course, the “You” in DYMWOW is most certainly not the Forest Service, but MVP and FERC.

Endorsement by Members of the Western Montgomery County Landowners Association:

- | | | |
|--|---|---|
| Peter Montgomery
3065 Mount Tabor Road
Blacksburg VA | Robert and Donna Jones
2628 Mount Tabor Road
Blacksburg VA | Tom and Bonnie Triplett
2664 Mount Tabor Road
Blacksburg VA |
| Robert and Pat Tracy
1110 S. Jefferson Forest Lane
Blacksburg VA | Ken and Louisa Gay
3925 Horse Farm Road
Blacksburg VA | Don and Julie Prater
3120 Mount Tabor Road
Blacksburg VA |
| Delwyn A. Dyer
4180 Dori-Del Hills
Blacksburg VA 24060 | Mike and Marnie Slayton
2626 Mount Tabor Road
Blacksburg VA 24060 | Mode Johnson
3030 Mount Tabor Road
Blacksburg VA 24060 |
| Sandra Powell
6005 Grey Fox Lane
Salem VA
Mount Tabor Landowner | Arnold & Donna Lafon
1807 Bishop Road
Blacksburg VA | Charles B. & Nora R. Fugate
1796 Dry Run Road
Blacksburg VA |
| Don and Julie Prater
3120 Mount Tabor Road
Blacksburg VA | Carl Zipper
3910 Horse Farm Road
Blacksburg VA | Barbara Lockee
3150 Mount Tabor Road
Blacksburg VA |

CO74-9 The opposition to the FS LRMP amendments and comments by the Western Montgomery County Landowners Association are noted. Conversion of the Brush Mountain Inventoried Roadless Area to a recommended wilderness study area is outside the scope of this project.

CO
74-9

COMPANIES AND NGOs

CO74 –Western Montgomery County Landowners Association

20161222-5178 FERC PDF (Unofficial) 12/21/2016 10:54:20 PM

CO
74-9
cont.

Debbie Schug 2588 Bishop Road Blacksburg VA	Torsten Sponnenberg 2920 Bishop Road Blacksburg VA	Susan & Tom Ryan 2028 Mount Tabor Road Blacksburg VA
Pam Ferrante 3030 Mount Tabor Road Blacksburg VA	Phyllis Hutton 305 Hemlock Drive Blacksburg VA	Buck Cox & Janet Degroff 3021 Mount Tabor Road Blacksburg VA
Linda Parsons Sink 1831 Catawba Road Blacksburg VA	Garrett & Suzzie Baker 2546 Mount Tabor Road Blacksburg VA	Sandy Schlaudecker 4254 Fortress Drive Blacksburg VA
Lee & Patti Roberts 1905 Mount Tabor Road Blacksburg VA	Danny & Robyn Vaden 2325 Mount Tabor Road Blacksburg VA	Francis M. Parsons 716 Gracelyn Court Blacksburg VA
Dan & Sandra Eversole 2495 Bishop Rd. Blacksburg VA	Cliff Roberts 1863 Mount Tabor Road Blacksburg VA	Robert & RoseMary Goss 2355 Mount Tabor Road Blacksburg VA
Steve Cass 2528 Bishop Rd Blacksburg VA	Oneda Burleson-Dyer 4180 Dori-Del Hills Blacksburg VA	

Groups Supporting the Western Montgomery County Landowners Association:

- POWHR (Protect Our Water, Heritage, Rights)
- Preserve Montgomery County Virginia
- Preserve Giles County
- Preserve Bent Mountain
- Preserve Roanoke
- Preserve Monroe
- Discover Monroe Team
- Eight Rivers Counsel (from along the Atlantic Coast Pipeline)
- Blue Ridge Land Conservancy
- Sierra Club, Virginia Chapter, 106 George Rogers Road, Charlottesville VA 22911
Kirk A. Bowers, PE, Pipelines Program Manager

COMPANIES AND NGOs

CO75 – Appalachian Mountain Advocates on behalf of Sweet Springs Valley Water Company



APPALACHIAN MOUNTAIN ADVOCATES

Great Horned Owl © Estate of Roger Tony Peterson. All rights reserved.

P.O. Box 507
Lewisburg, WV 24901
ph: 304-645-9006
fax: 304-645-9008
email: info@appalmad.org

www.appalmad.org

December 21, 2016

VIA U.S. Mail and eFiling

Federal Energy Regulatory Commission
ATTN: Paul Friedman
888 First St. NE
Washington, DC 20426

CO75-1

RE: Mountain Valley Pipeline, CP-16-10-000; DEIS Comments on behalf of Sweet Springs Valley Water Company

Dear Mr. Friedman:

Please accept these written comments on the Draft Environmental Impact Statement (“DEIS”) for the proposed Mountain Valley Pipeline (“MVP”). The comments are submitted on behalf of Sweet Springs Valley Water Company of Gap Mills, West Virginia (“Sweet Springs”).

Sweet Springs strongly opposes the MVP and urges FERC to deny the pending application. The DEIS issued for public comment is incomplete and inadequate in that it fails to assess reasonable alternatives. MVP has not demonstrated a need for the pipeline, and is therefore not entitled to the power of eminent domain. Sweet Springs agrees with and hereby incorporates the DEIS comments submitted by Appalachian Mountain Advocates on behalf of Sierra Club and other intervenors.

CO75-2

With regard to Sweet Springs specifically, the DEIS has failed to consider the substantial risk to the business and to the community that depends on spring water from Peters Mountain. Sweet Springs is a successful bottled water company that been recognized as having some of the best tasting spring water in the world. Sweet Springs was established by twenty five local investors who began doing business in 1990. The company has been operating at a profit and making distributions to those shareholders since 1995. Sweet Springs employs twelve people, including three that have been with the company for over fifteen years. All employees receive profit sharing incentives based on the length of their tenure. The company bottles and delivers between 160,000 and 200,000 three and five gallon bottles per year to approximately 1,920 customers located within an 80 mile radius of the production facility at Gap Mills, WV, with gross sales averaging between \$900,000 to \$1 million annually for the last 4 or 5 years. MVP’s

CO75-1

See the response to FA11-2 regarding the adequacy of the draft EIS. Need will be discussed in more detail the Commission Order, as stated in section 1.2.3 of the draft EIS. The power of eminent domain was assigned by an Act of Congress.

CO75-2

Impacts to the Sweet Springs Valley Water Bottling Company are not anticipated as the facility is in a different watershed about 19 miles northeast of the MVP.

COMPANIES AND NGOs

CO75 – Appalachian Mountain Advocates on behalf of Sweet Springs Valley Water Company

20161222-5230 FERC PDF (Unofficial) 12/22/2016 10:45:36 AM

proposal presents a substantial risk to the business, its employees, and the customers that they serve. That harm has not been adequately addressed by FERC in the DEIS.

Sweet Springs uses two natural springs for its bottling operations, Rowan Spring and Gap Mills Spring. Both are on Peters Mountain and are fed by gravity into the Sweet Springs bottling facility. Rowan Spring produces up to 100,000 gallons of clean water daily, with virtually no turbidity and Total Dissolved Solids well below EPA standards. Gap Mills Spring produces 250,000 gallons per day and also serves the roughly 200 customers of the Gap Mills Public Service District. The springs are critical to the community and to Sweet Springs' business.

The area around Sweet Springs is marked by karst topography, with a cave directly behind the bottling facility and a large sinkhole just west of the facility. Such topography is characteristic of Peters Mountain, including the proposed route of the MVP. As FERC acknowledges in the DEIS, pipeline construction through karst terrain poses a substantial threat to groundwater. Contrary to FERC's assertions, Mountain Valley's proposed mitigation measures will not be adequate to protect those sensitive karst resources, as explained in the comprehensive comments submitted by Appalachian Mountain Advocates.

Indeed, land disturbance on Peters Mountain has already proven harmful to Sweet Springs. In the 1990s a logging operation in the spring recharge area resulted in erosion, sedimentation, and a boil water advisory. Sweet Springs could not bottle and sell the spring water during that event.

Natural gas transmission lines on Peters Mountain have already been proven to contaminate drinking water supplies. The Virginia Department of Environmental Quality concluded that a 12-inch natural gas transmission line was the only definitive source of the 2015 diesel contamination of the Red Sulphur Public Service District water system. Like Red Sulphur, Sweet Springs depends upon the karst topography of Peters Mountain for clean water and is similarly threatened by pipeline construction through the karst topography.

Despite the past examples of impacts to groundwater caused pipeline construction, the DEIS fails to adequately address the risks to drinking water supplies on Peters Mountain. The DEIS fails to assess the interconnected pathways and voids that characterize the proposed Peters Mountain crossing. FERC has failed to require the applicant, MVP, to identify and avoid impacting the karst network along the route.

As explained in great detail in Appalachian Mountain Advocates' comprehensive comments, the construction of a 42-inch natural gas transmission pipeline on steep, spring-laden, karst terrain is at best very rare and at worst unprecedented. The risks presented demand a thorough evaluation, especially in light of recent, proven water contamination on a much smaller pipeline. The DEIS does not include that evaluation. A fair evaluation of such risks would conclude that MVP's proposed pipeline cannot be constructed without causing serious harm to the water resources in its path. The DEIS should be revised, reissued for public comment, and, based on a full and fair evaluation of the social and economic impacts of the pipeline, the MVP application for Certificate of Public Convenience and Necessity should be denied.

CO75-2
cont'd

CO75-3

CO75-3

Section 4.1 discusses karst terrain and section 4.3 of the EIS discusses groundwater, springs, and water supplies.

COMPANIES AND NGOs

CO75 – Appalachian Mountain Advocates on behalf of Sweet Springs Valley Water Company

20161222-5230 FERC PDF (Unofficial) 12/22/2016 10:45:36 AM

Respectfully Submitted,

/s/ Benjamin L. Lockett

Benjamin L. Lockett
Isak Howell
Appalachian Mountain Advocates
P.O. Box 507
Lewisburg, WV 24901
On behalf of Sweet Springs Valley Water Company

COMPANIES AND NGOs

CO76 – Appalachian Mountain Club

20161222-5246 FERC PDF (Unofficial) 12/22/2016 10:51:20 AM



Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

December 22, 2016

Re: Proposed Mountain Valley Pipeline Comments: Docket No. CP16-10-000 - 81 FR 71041
Comments of AMC on the Draft Environmental Impact Statement

CO
76-1

Dear Secretary Bose,

The Appalachian Mountain Club (AMC) is a non-profit organization whose mission is to “promote the protection, enjoyment, and understanding of the mountains, forests, waters, and trails of the Appalachian region.” The protection of our outdoor resources is of paramount importance to our over 200,000 members and supporters. As part of our stewardship work, AMC cares for over 1,800 miles of trail, including approximately 350 miles of the Appalachian National Scenic Trail (A.T.), largely through our body of dedicated volunteers. The integrity of the experience of hiking the Appalachian Trail is of great importance to AMC. The high quality experience of the A.T. is made possible by the many public land units, including the Jefferson National Forest, that recognize and protected the values of the A.T. through their management prescriptions and actions.

CO76-1 Comment noted.

AMC also has extensive experience with the U.S. Forest Service (USFS) forest planning process through our work with the White Mountain National Forest (WMNF), and holds a high degree of value in sustaining the integrity of forest plans and their implementation. AMC was one of many diverse stakeholders in the current WMNF forest plan, which was the only USFS forest plan to not be litigated – a testament to the careful consideration and balancing of many interests through a transparent process.

CO
76-2

AMC is concerned that the proposed Mountain Valley Pipeline (MVP) project would negatively impact the Appalachian Trail and the experience of those using this resource, and that the Draft Environmental Impact Statement (DEIS) does not adequately analyze the potential visual impacts of the proposed project. AMC believes that this impact can be avoided or significantly minimized without impacting the project purpose. The full impacts, including a visual analysis, should be made available through the DEIS for public review and comment, as well as for informed decision making. For resource impacts identified that cannot be avoided or further minimized, mitigation approaches that will ensure a no net loss standard should be discussed in the DEIS in a manner that meet USFS standards consistent with Executive Order 13604¹, for example. The DEIS does not include an adequate visual impact assessment or a discussion of potential mitigation approaches. **AMC therefore requests that a supplemental DEIS be developed and issued for the full legally required 90 days of public comment addressing the issues at the end of this letter.**

CO76-2 The FERC will not issue a supplemental draft EIS. However, we will issue a final EIS that addresses comments on the draft. The EIS discusses the ANST and visual resources in section 4.8.

¹ Executive Order 13603, dated March 22, 2012, *Improving Performance of Federal Permitting and Review of Infrastructure Projects*, and Presidential Memorandum: *Mitigating Impacts on Natural Resources from Development and Encouraging Related Private Investment*, both speak clearly to the responsibility of the USFS in requiring mitigation for infrastructure projects that will harm public resources.

Main Headquarters: 5 Joy Street • Boston, MA 02108-1490 • 617-523-0636 • outdoors.org
Regional Headquarters: Pinkham Notch Visitor Center • 361 Route 16 • Gorham, NH 03581-0298 • 603 466-2721
Additional Offices: Bretton Woods, NH • Greenville, ME • Portland, ME • New York, NY • Bethlehem, PA

COMPANIES AND NGOs

CO76 – Appalachian Mountain Club

20161222-5246 FERC PDF (Unofficial) 12/22/2016 10:51:20 AM

CO 76-3 The scenic values of the Appalachian National Scenic Trail are of great importance to the integrity of this unit of the National Trail System, managed by the National Park Service and reflected in the Jefferson National Forest Plan (Forest Plan). AMC is deeply concerned that proposed Amendment 4 would downgrade the management prescription of the A.T. from “High” to “Moderate” in the Jefferson National Forest, despite the fact that a number of linear crossings across the Appalachian Trail already exist, providing co-location opportunities that could be used to avoid the permanent impacts being proposed to the Appalachian Trail and to Jefferson National Forest.

CO76-3 See the response to comments FA10-1 regarding Amendments 2, 3, and 4.

Forest Plans are the result of deliberate public process and the careful consideration of resource conditions and values. An amendment designed to simply to accommodate new development undermines the credibility of the forest planning process and confidence in the validity of Forest Plans far beyond the Jefferson National Forest. AMC opposes all proposed amendments to the Jefferson National Forest Plan that are not based on current resource conditions or needs, but rather are designed to relax standards in a manner that would accommodate new development proposals, including linear development.

CO 76-4 AMC is also aware that the currently proposed Atlantic Coast Pipeline, in combination with the MVP project, would potentially impact 20% of the A.T. in Virginia, 26% of the A.T. in George Washington and Jefferson National Forest and 29 managed scenic vistas. AMC further understands that it is the policy of the Bureau of Land Management, regarding the FERC process, that the geographic scope of impact should be based on the nature of the impacted resources, not the proposed project. This is a stretch of A.T. that is reasonably used by hikers in one multi-day trip. In its National Environmental Policy Act (NEPA) review, FERC must consider the cumulative effects of multiple proposed projects in a given area (such as the permitting of multiple proposed pipelines) – see 40 C.F.R. §§ 1508.7, 1508.25(a); Delaware Riverkeeper Network v. FERC. To date, the cumulative impacts to the A.T. as a single resource across this landscape have not been assessed.

CO76-4 Cumulative impacts from both the MVP and ACP on the ANST are disclosed in section 4.13 of the EIS.

Recommendations:

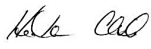
To ensure an informed decision making process and better understand the proposal to amend an approved Forest Plan, AMC requests the following actions for addressing the deficiencies of the DEIS:

- Issue a supplemental DEIS, with a full 90-day comment period, that includes the correct location of the A.T. and a visual impact analysis, including leaf-off conditions, that meets the standard of the U.S. Forest Service (USFS) Scenery Management System for all 19 locations that might be potentially impacted
- No amendment to the Forest Plan should be considered that lowers the Scenic Integrity Objectives of the Appalachian National Scenic Trail.
- Consider the cumulative impacts of the currently proposed pipeline and infrastructure projects affecting the region and the Appalachian Trail corridor, including the indirect effects of this expansion through the Appalachian Trail region. The best and most efficient way to consider such cumulative impacts is through a programmatic or regional review under NEPA.
- For resource impacts that cannot be avoided or minimized, the supplemental DEIS should discuss the proposed mitigation approach so it can also be reviewed for a nexus and adequacy relative to the resource impacts.

CO76-5 See the responses to CO76-2, CO76-3, and CO76-4. Impact avoidance, minimization, and mitigation measures are discussed in each resource section.

Thank you for considering our comments. Please feel free to contact me at your convenience.

CO76-6 Comment noted

CO 76-6 Sincerely,


Heather Clish
Director of Conservation & Recreation Policy

COMPANIES AND NGOs

CO76 – Appalachian Mountain Club

20161222-5246 FERC PDF (Unofficial) 12/22/2016 10:51:20 AM

Copies:

Wendy Janssen
National Park Service
Appalachian National Scenic Trail Park Superintendent

Mike Caldwell
National Park Service
Northeast Regional Director

CO
76-6
cont'd

Job Timm
George Washington and Jefferson National Forests
Forest Supervisor

Tony Tooke
USFS Region 8
Regional Forester

Jennifer Adams
George Washington and Jefferson National Forests
Special Projects Coordinator

Karen Mouritsen
Bureau of Land Management
Eastern States Director

COMPANIES AND NGOs
CO77 – Friends of Central Shenandoah

20161222-5181 FERC PDF (Unofficial) 12/22/2016 12:39:09 AM

December 22, 2016

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

Re: Comments on Draft Environmental Impact Statement - Docket Nos. CP16-10-000 and CP16-13-000

Dear Federal Energy Regulatory Commission,

CO
77-1

Attached are comments regarding the Draft Environmental Impact Statement for the Mountain Valley Project and the associated Equitrans Expansion Project issued September 2016. These projects are FERC Docket Nos. CP16-10-000 and CP16-13-000, respectively.

We ask that you make these comments part of the record of the proceeding and consider them as part of your decision making process in determining whether to issue a Certificate of Public Convenience and Necessity for the project.

Respectfully submitted,

/s/ Thomas Hadwin
Friends of the Central Shenandoah
328 Walnut Ave.
Waynesboro, VA 22980
(540) 256-7474
tzhad13@gmail.com

Dated: December 22, 2016

CO77-1 Comments have been addressed in the final EIS as appropriate.

COMPANIES AND NGOs

CO78 – New River Valley Bicycle Association

20161222-5179 FERC PDF (Unofficial) 12/21/2016 11:07:04 PM

Scott Owens
President – New River Valley Bicycle Association
Founding Member – Poverty Creek Trails Coalition

December 21, 2016

Joby Timm, Forest Supervisor
George Washington and Jefferson National Forests
5162 Valleypointe Parkway
Roanoke, VA 24019

Re: Amendments to the Land Resource Management Plan and the proposed Mountain Valley Pipeline crossing of the Inventoried Roadless Area adjacent to the Brush Mountain Wilderness

Dear Supervisor Timm:

I am writing in reference to the September mailing request for comments on the proposed actions of the US Forest Service in response to the right-of-way (ROW) grant application submitted by Mountain Valley Pipeline (MVP) to construct and operate a natural gas pipeline across the Jefferson National Forest (JNF). The first proposed amendment (Proposed Amendment 1) is to reallocate 56 acres from Rx 4J-Urban/Suburban Interface of a Roadless Inventoried Area to a Management Prescription 5C-Designated Utility Corridor. The proposed Rx 5C land allocation would be 500 feet wide with two exceptions: 1) the area where the pipeline crosses Rx 4A – Appalachian National Scenic Trail Corridor would remain in Rx 4A; and 2) the new 5C area would not cross into Peters Mountain Wilderness so the Rx 5C area would be less than 500 feet wide along the boundary of the Wilderness.

The proposed route would traverse through the Inventoried Roadless Area in the Jefferson National Forest directly adjacent to the Brush Mountain Wilderness. If approved, the route would place a 500-foot-wide utility corridor next to the wilderness. The pipeline proposes to clear a minimum 125-foot construction right-of-way, a 50-foot cleared permanent right-of-way, and access roads required to build and maintain the pipeline. This major industrial infrastructure development would result in serious degradation of the exceptional scenic value of the region; permanently damage mature, undeveloped forests and fragment the extraordinary forests around the Brush Mountain Wilderness area. Moreover, the pipeline will climb the steep and rugged topography through the Inventoried Roadless Area which guarantees erosion both during and after construction. No mitigation plan will eliminate the excessive sediment loads to Craig's Creek at the bottom of the mountain.

The cyclists in the New River Valley who use this land are gravely concerned about the negative impacts the Mountain Valley Pipeline and proposed Amendment 1 will have on this treasured forest and wilderness. This unspoiled and tranquil forest which is enjoyed by countless hikers, bikers, hunters and runners will be negatively impacted for decades to come if Amendment 1 is approved. It is of utmost importance that the integrity of the Inventoried Roadless Area be maintained as an extension of the Brush Mountain Wilderness. We **oppose** the granting of the ROW changes to the Land Resource Management Plan (LRMP) for this forest, including the designation of a utility corridor in the JNF, which would be required if the application is approved.

Additionally, the cycling community requests that the U.S. Forest Service undertake an evaluation of the 4J Urban/Suburban Interface which is a part of the Brush Mountain Roadless Area to determine its suitability for a 1B Wilderness Study Area which is a designation more in keeping with the spirit of the Roadless Rule.

CO
78-1

CO78-1

See the response to comment CO74-7 regarding crossing Craig Creek and the Brush Mountain IRA. See the response to comment FA8-1 regarding Amendment 1. Conversion of the Brush Mountain Inventoried Roadless Area to a congressionally-designated Wilderness is outside the scope of this project.

COMPANIES AND NGOs

CO78 – New River Valley Bicycle Association

20161222-5179 FERC PDF (Unofficial) 12/21/2016 11:07:04 PM

CO78-1
cont'd

Respectfully Submitted,

Scott Owens
President – New River Valley Bicycle Association
Founding Member – Poverty Creek Trails Coalition

CC: Clyde Thompson, Forest Supervisor
Monongahela National Forest
200 Sycamore Street
Elkins, WV 26241

Tony Tooke, Regional Forester for the Southern Region
USDA-Forest Service
1720 Peachtree Street
Atlanta, GA 30309

COMPANIES AND NGOs

CO79 – Virginia Petroleum Council

20161222-5277 FERC PDF (Unofficial) 12/22/2016 12:51:44 PM

Miles Morin
Executive Director
Virginia Petroleum Council
701 E Franklin St, Suite 1112
Richmond VA 23219

Dec. 22, 2016

Ms. Kimberly Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE
Washington, D.C. 20426

Subject: Mountain Valley Pipeline (Docket No. CP16-10-000)

Dear Ms. Bose:

On behalf of the Virginia Petroleum Council, I am writing to respectfully request the Federal Energy Regulatory Commission's approval of the proposed Mountain Valley Pipeline (MVP).

Natural gas is the cleanest burning fossil fuel, producing about half the carbon emissions of coal, and is very reliable and affordable. On a national level, carbon emissions from electricity generation are at 22-year lows, and overall energy-related carbon emissions dropped 12 percent below 2005 levels last year, according to the EIA. EIA credits this progress as primarily due to "increased use of natural gas for electricity generation." The U.S. has an abundant supply of natural gas, and the proposed MVP is integral to meeting existing and projected demand in the Southeast and Mid-Atlantic regions, including in Virginia. Businesses, especially manufacturing companies, look for access to natural gas when deciding where to locate, and Southwest Virginia in particular could benefit significantly from construction and operation of the MVP line.

Virginia's natural gas use is increasing, having grown more than 50 percent from 2004 to 2014. This growth in use corresponds with lower gas prices, which are saving customers money and spurring economic growth. For example, Virginia Tech's ongoing transition from coal to gas for heating and power will save the school an estimated \$1 million per year. Other commercial users, like public facilities and hospitals are seeing similar benefits. Increased supply will also help lower costs for consumers and manufacturers. In fact, the MVP project will directly benefit individual residential customers, as one of the MVP project partners is an affiliate of Roanoke Gas Company, a local gas distributor. Roanoke Gas has announced plans to tap into the proposed line in two places to serve existing and new customers. One tap will be in Montgomery County. The other will be in Franklin County, near a new business park. Franklin County currently has no economically feasible access to natural gas. MVP would be a game-changer for that community.

CO
79-1

CO79-1

Comment noted.

COMPANIES AND NGOs

CO79 – Virginia Petroleum Council

20161222-5277 FERC PDF (Unofficial) 12/22/2016 12:51:44 PM

CO
79-1
cont.

Regarding FERC's Draft Environmental Impact Statement (DEIS), MVP has worked diligently to establish a route that both minimizes the project's impact on the environment and accommodates property owners' requests. As the DEIS shows, MVP has adopted 11 route alternative segments and 572 minor route variations in its design since July. Additionally, the DEIS appropriately credits MVP for its plans to mitigate potential effects on natural resources and finds that a majority of the project's environmental impacts would be "reduced to less than significant levels."

Natural gas is going to be an important part of the nation's energy portfolio for generations. We need to build infrastructure to get cleaner, cheaper fuel to market in order to help spur the economy and help consumers save money on fuel costs. The proposed MVP line would achieve these goals in a responsible manner.

Accordingly, the Virginia Petroleum Council supports the project and respectfully requests the commission act quickly to approve the MVP proposal.

Sincerely,



Miles Morin
Executive Director
Virginia Petroleum Council

COMPANIES AND NGOs

CO80 – The Nature Conservancy

20161222-5275 FERC PDF (Unofficial) 12/22/2016 1:17:21 PM



The Nature Conservancy in Virginia tel (434) 295-6106
490 Westfield Road nature.org
Charlottesville, VA 23413

December 22, 2016

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE
Washington, DC 20426

RE: Docket Nos. CP16-10-000 and CP16-13-000; Draft Environmental Impact Statement for the Mountain Valley Project and Equitrans Expansion Project.

Dear Ms. Bose:

The Nature Conservancy, appreciates the opportunity to provide further comment on the Draft Environmental Impact Statement (DEIS) that has been prepared for the Mountain Valley Pipeline (MVP).

CO80-1

The mission of The Nature Conservancy is to conserve the lands and waters on which all life depends. The Conservancy is a leading conservation organization working in all 50 states and more than 35 countries. We have helped conserve nearly 15 million acres of land in the United States and more than 118 million acres with local partner organizations globally.

The proposed route of the MVP crosses through the Central Appalachian Whole System Project, which is an area of deep investment for the Conservancy. Within this region, The Conservancy has worked with public agencies, corporations, private landowners, and local communities to undertake land protection, management, and restoration actions across public and private lands. We have worked with others to develop and implement strategies to protect the best, large, intact habitats that will continue to support a diversity of species, in the face of a changing landscape and a changing climate.

On December 19, 2016, the Conservancy submitted comments on the DEIS that addressed the specific issue of lands in which we hold a legal interest. We write now in order to highlight the rest of the issues raised in the scoping letter we filed with FERC on June 16, 2015. Many of these issues were not fully addressed in the DEIS and therefore we are recommending that these remaining, significant issues be addressed in a Supplemental DEIS.

CO80-2

Provide a Supplemental DEIS

The Conservancy strongly recommends that FERC prepare a Supplemental DEIS to address the numerous data gaps and incomplete analyses of the current DEIS. The public has a compelling

The Nature Conservancy
Draft Environmental Impact Statement for the Mountain Valley Project and Equitrans Expansion Project
Docket Nos. CP16-10-000 and CP16-13-000;
Page 1 of 7

CO80-1

Comments from TNC submitted prior to the preparation of the draft EIS were addressed in that document; see section 4.8.

CO80-2

The FERC will not issue a supplemental draft EIS. However, we will issue a final EIS that addresses comments on the draft.

COMPANIES AND NGOs

CO80 – The Nature Conservancy

20161222-5275 FERC PDF (Unofficial) 12/22/2016 1:17:21 PM

CO80-2
cont'd

interest not only in the benefits that would accrue from the expanded transport of natural gas, but also in the consequent impacts of such expansion. As such, the Conservancy submits that FERC must provide the public with a much more complete analysis of those impacts and the means by which the applicant will avoid, minimize and compensate for them. Because the FERC process does not provide a comment period on a Final EIS, the only means by which this can be achieved is through a supplement to the current DEIS.

In our scoping comments, the Conservancy requested that FERC observe the full mitigation hierarchy, which is that impacts first be avoided, then minimized, and impacts that cannot reasonably be avoided are then compensated for. Several of the recommendations made by FERC staff to the Commission in the DEIS pertain to completing surveys or assembling new information. In addition, a new preferred route was adopted during the comment period of the DEIS that includes a variation through a biologically significant karst area. While revised tables and appendices have been filed, data to evaluate impacts from the new route are incomplete and analyses by FERC staff have not been made public. The Conservancy respectfully submits that the DEIS is not complete enough to allow FERC to have analyzed the full range of impacts of this project and, therefore, any determination that such impacts can be fully compensated is premature.

In the DEIS, FERC staff conclude that *"impacts would be reduced with the implementation of Mountain Valley's and Equitrans' proposed mitigation measures, and the additional measures recommended by the FERC staff in this EIS."* Given that many of these measures, e.g., impacts to forests and migratory birds, have yet to be specified, the Conservancy does not agree that such a conclusion is possible at this point. **Mitigation plans for impacts that cannot reasonably be avoided should be made publicly available for comment in a supplemental DEIS, rather than made conditions in the Commission's Order.** As stated above, the public is entitled to review and comment on a full analysis of impacts, avoidance and minimization measures, and the appropriateness of proposed compensatory actions, which under the FERC process can only occur with a supplemental DEIS.

Avoid all Preserves and Conservation Easements

In its June 2015 comments, the Conservancy requested that *"the final preferred alternative for the Mountain Valley Pipeline avoid all preserves, easements and Critical Habitats for conservation"*. As detailed in The Conservancy's comments on this DEIS submitted on December 19, 2016, the preferred alternative addresses some of these concerns, but intensifies others. We are particularly concerned with the DEIS's lack of attention to and inaccuracy of the analysis of the Poor Mountain conservation easement. Also, while we are very glad to see that impacts to a Conservancy Preserve and conservation easements held by the Virginia Department of Conservation and the Virginia Outdoors Foundation are avoided through Route Alternatives adopted in October, we are seriously concerned that the proposed alternative creates additional impacts for which mitigation is not practicable.

As detailed in The Conservancy's comments submitted on December 19, 2016, the DEIS for the proposed Mountain Valley Pipeline does not adequately consider the impact the project would

CO80-3

We provide new information and evaluate alternatives that would avoid TNC Poor Mountain easements in the final EIS in section 3.5.

COMPANIES AND NGOs

CO80 – The Nature Conservancy

20161222-5275 FERC PDF (Unofficial) 12/22/2016 1:17:21 PM

CO80-3
cont'd have on the Conservancy's Poor Mountain Easement. Given the significance of Bottom Creek which the Poor Mountain conservation easement was designed to protect, the public benefit of the easement, and the incompatibility of the project with the easement terms, **the Conservancy reiterates its request that FERC direct the applicant to develop a route variation that fully avoids this property.**

Avoid Critical Habitats

In its June 2015 comments, the Conservancy requested that MVP avoid impacts to Critical Habitats for Conservation. In that letter we described Critical Habitats as designated areas with high biodiversity value, consistent with the definitions of Critical Habitats as outlined in the [International Finance Corporation Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources](#). For the Central Appalachians, these habitats include very large and diverse patches of intact forest, ecologically significant cave and karst systems, and rare, threatened and endangered species known to occur in less than 10 locations globally. We made these datasets publicly available in the hope they would be used in siting decisions and impact assessment.

Forest

The Conservancy concurs with FERC's conclusion "*that the projects would have significant impacts on forest.*" We particularly appreciate the thorough description of interior forest fragmentation and edge effects in Section 4.4.2.3 **Interior Forest Fragmentation and Edge Effects**. Effects of forest fragmentation are extensively described within a very large body of peer reviewed research. Haddad et al (2015) synthesized fragmentation experiments spanning multiple habitats and scales, five continents, and 35 years and concluded that habitat fragmentation reduces biodiversity by as much as 75%.

The DEIS indicates that the MVP will affect about 5,642 acres of forest. We find that this figure underrepresents the actual area of interior forest impacts from this project. Our own analyses suggest that the actual affected area is more than an order of magnitude greater. As noted in section 4.5.2.2 FOREST FRAGMENTATION AND EDGE EFFECTS ON WILDLIFE "*The distance an edge effect extends into a woodland is variable, but most studies suggest at least 300 feet.*" The accounting of interior forest impacts in section 4.4.1.2 INTERIOR FOREST in which individual cores intersected by the project are listed is inadequate. **The Conservancy recommends that impacts to interior forest be recalculated to account for:**

- 1) the area of new edge habitat (300 ft.) on either side of all areas of the project footprint that intersect interior forest cores.**
- 2) the area of new fragments of forest cores that no longer meet the minimum size criterion used to define them (250 acres in WV, and 100 acres in VA).**

It is our understanding that the Commonwealth of Virginia has developed a methodology for calculating impacts to forest that is consistent with this recommendation, and the Conservancy supports its use.

CO80-4

We have updated our discussion of impacts on interior forest in the final EIS. Restoration of formerly forested areas is discussed in sections 4.4 and 4.5 of the EIS. The draft EIS did acknowledge how long restoration of forest would take in section 4.5.1.

Section 4.4.2.3 states: “To minimize forest fragmentation and edge effects, Mountain Valley has collocated about 29 percent of the pipeline route with existing linear corridors.” The Conservancy appreciates the extent to which MVP has attempted to collocate this pipeline route, and fully agree that this is one way of avoiding impacts. In our scoping comments of June 2015, we recommended that *“avoidance of both direct and indirect impacts be demonstrated by the applicant, and that any finding that avoidance is not reasonably practicable be supported by transparent, quantitative, and repeatable analyses.”*

Documentation of how impacts to forest cores were avoided in areas where co-location was found to be impractical should be provided. If avoidance of forest cores was not part of the decision-making process, then route variations should be developed for segments of the project that result in large impacts to interior forest and those variations should be evaluated in a supplemental DEIS prior to the development of compensatory mitigation measures.

This section goes on to state: “The MVP would impact about 4,780 acres of forest during construction which would represent about 0.005 percent of the forested area within these five ecoregions.” **The Conservancy finds this .005% figure to be both inaccurate and misleading and request that FERC correct the following errors:**

- 1) **The 4,780-acre figure is only what is affected by the pipeline corridor. The sum of impacts from all construction activities listed on page 4-141 is 5,642 acres. This discrepancy needs to be resolved.**
- 2) **The 5,642-acre figure represents only forest cores, whereas the portion of each of the five ecoregions examined is all forest land cover. Furthermore, the 5,642 acres only includes the direct project footprint and not the acreage subject to the impacts of fragmentation. The appropriate metric is the ratio of total forest core and fragmentation impacts from pipeline construction, to the total acreage of forest cores in each of the five ecoregions. The percentage needs to be recalculated.**

Section 4.4.2.2 Restoration of Vegetation states “In order to re-establish vegetation in upland areas disturbed during construction, the Applicants would amend soils with fertilizer as needed, de-compact soils as needed, apply grass seed mixes, and mulch.” Similarly, Section 4.4.2.3 states that “In coordination with the Wildlife Habitat Council, Mountain Valley would plant seeds for native plant species during restoration and revegetation.” The Conservancy appreciates the recognition of the importance of using native seed mixes for soil stabilization and revegetation of the project’s permanent right-of-way, and the need for decompaction of soil for re-establishing forest habitat. **However, all references to restoration of forest habitat should be revised to include standard practices for the restoration of forest vegetation, including planting not just of seed but of live trees, and long term management of invasive species.**

Section 4.4.2.2 further states: “Revegetation of cleared areas would be considered successful when the cover and density of vegetation within the construction right-of-way is similar to the adjacent undisturbed land.” The Conservancy finds this to be a good metric for successful restoration, however we are concerned that the DEIS does not acknowledge how long

COMPANIES AND NGOs

CO80 – The Nature Conservancy

20161222-5275 FERC PDF (Unofficial) 12/22/2016 1:17:21 PM

CO80-4
cont'd

successful restoration of forest vegetation will take, and what the long term stewardship needs for forest restoration will be. For example, this section states that “Disturbed areas would be monitored for at least the first and second growing seasons after construction as specified in the FERC Plan (for the MVP) and Equitrans’ Plan (for the EEP).” Restoration of forest vegetation is clearly going to take more than two growing seasons; for example, USFS requires restocking surveys after 3-5 years post-planting. **The Conservancy requests that this section be updated to include a more appropriate description of revegetation activities and long term stewardship needs.**

CO80-5

Rare, Threatened and Endangered Species

Impacts to rare, threatened, and endangered species are formally included in the assessment through comments provided by the USFWS and state agencies. **Section 5.1.7 Federally Listed Threatened, Endangered, and Other Species of Concern**, indicates that surveys for three of 22 Federal Special Status Species and 10 of the 20 state listed species have not yet been reviewed. **Recommendation 41** states that Mountain Valley shall not begin construction until all outstanding surveys for federally listed species are completed, and Section 7 consultation is completed. The preferred alternative filed in October has the potential to increase impacts to the Slussers Chapel Karst Conservation area. **Section 5.1.7.1** states “*We cannot make determinations of effects for this species [of invertebrate] until after Mountain Valley files the results of consultations with the resource agencies, the results of required surveys, and its proposal for avoiding impacts on Slussers Chapel Cave and Old Mill Cave.*” **The Conservancy agrees with this statement, and submits that if the DEIS lacks basic data on the presence or absence of Federally listed species it cannot be considered complete. A supplemental DEIS is needed in order to provide a complete analysis of potential impacts to Federally listed species and the steps that must be taken mitigate for those impacts.**

CO80-6

Cave and Karst Systems

Although the DEIS includes extensive discussion of the potential for pipeline construction to contaminate groundwater resources when crossing karst features and the potential for ground subsidence, there is no discussion of the nature of subterranean habitats, their biological significance, or the nutrient, temperature, or flow regimes that sustain them. We are concerned that the DEIS seems to regard karst terrain solely as geotechnical and water quality hazard, and fails to recognize the importance of these systems to wildlife beyond those mentioned in the section on rare, threatened and endangered species. **The Conservancy requests a supplement to the DEIS that addresses this deficiency. The Virginia Department of Conservation and Recreation (VDCR) is a recognized expert on these issues, and we therefore expect FERC to adopt DCR’s recommendations for avoiding and minimizing impacts to karst habitats.**

CO80-7

Consider Additionality of Impacts from Climate Change

In previous scoping comments, the Conservancy described our efforts to advance species conservation in the face of a changing climate ([Anderson et al. 2014](#), [Anderson et al. 2012](#); see

CO80-5 Information on threatened and endangered species has been updated in section 4.7 of the final EIS.

CO80-6 Sections 4.1 and 4.3 discuss the interconnected relationship between karst and groundwater resources. As explained in section 4.1, known caves would be avoided. Section 3.5 explores alternatives that would avoid the Mount Tabor Sinkhole Plain which contains a concentration of karst features. Sections 4.5 and 4.7 of our EIS discuss subterranean habitats extensively for species such as multiple bats and Ellet valley millipede. The VADCR is not requiring surveys for the millipede because cave habitat would be avoided.

CO80-7 Climate change is discussed in section 4.13 of the EIS.

COMPANIES AND NGOs

CO80 – The Nature Conservancy

20161222-5275 FERC PDF (Unofficial) 12/22/2016 1:17:21 PM

CO80-7
cont'd

[here for related work](#)) that focus on inherent site resilience. The activity of traversing a relatively unfragmented area with a permanently maintained clearing diminishes the connectedness and therefore resiliency of the site. We requested then that the DEIS fully consider the loss of site resilience to climate change consequent to an interruption in connectedness within large patches of intact habitats. This request is consistent with the Council on Environmental Quality's [Guidance on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews](#), issued on August 1, 2016. The Guidance states that: "agencies should consider: (1) The potential effects of a proposed action on climate change as indicated by assessing GHG emissions (e.g., to include, where applicable, carbon sequestration); and, (2) The effects of climate change on a proposed action and its environmental impacts." Although the DEIS accomplishes the first item, it fails to address the second. **The Conservancy requests that a supplement to the DEIS be prepared to address how climate change will amplify environmental impacts from this project, particularly impacts to wildlife and wildlife habitat including forests.**

CO80-8

Specify Mitigation Actions for Migratory Bird Habitat

Section 4.5.2.6 **Migratory Birds** states: "*Prior to the end of the draft EIS comment period, Mountain Valley should file with the Secretary a plan that describes how long-term and permanent impacts on migratory bird habitat would be minimized. This plan should include an emphasis on high quality and/or larger intact core interior forest areas. This plan should also document consultations with the FWS, FS, WVDNR, and VDGLF*". The Conservancy requests that a supplemental DEIS be prepared to address the fact that a migratory bird mitigation plan has been filed, but is not publicly available. It is not possible to have confidence in the adequacy of a mitigation plan if the details are unknown. **The Conservancy requests that the migratory bird mitigation plan be made available for public review and comment, and that FERC ensures that the plan addresses not only how impacts to migratory bird habitat would be minimized, but also how it has been avoided and what restoration activities will be undertaken to compensate for residual impacts.**

The Conservancy acknowledges that impacts to migratory bird habitat will have substantial overlap with impacts to interior forest. It is our assumption that compensatory actions taken to restore habitat for migratory birds will count towards the larger set of actions taken to compensate for losses of interior forest.

CO80-9

Reduce Risks of Sedimentation, Erosion, and Slope Failure

Section 4.1.1.5 **Geologic Hazards** indicates that about 67% of the MVP pipeline route is considered to have a high incidence of and high susceptibility to landslides. The Conservancy finds this to be an extraordinary degree of risk.

Section 4.1.1.5 further states that debris flows are "a common type of fast-moving landslide that generally occurs during intense and/or prolonged rainfall events. Fill slopes along the pipeline right-of-way could be a source of debris flow in the project area." In scoping comments submitted in June 2015, the Conservancy requested that FERC require the

CO80-8 Mountain Valley filed a public version of its revised MBCP on May 11, 2017 (see table 2.4-2). The final EIS has been updated with new information for migratory birds.

CO80-9 Mountain Valley filed a revised *Landslide Mitigation Plan* in March 2017 (see table 2.4-2).

COMPANIES AND NGOs

CO80 – The Nature Conservancy

20161222-5275 FERC PDF (Unofficial) 12/22/2016 1:17:21 PM

CO80-9
cont'd

implementation of methods for minimizing anticipated impacts that are of demonstrated effectiveness on pipeline construction projects in similar terrain and climate with similar diameter pipe.

In the DEIS FERC staff recommend that: "Prior to construction, Mountain Valley should file with the Secretary, for review and approval by the Director of OEP, a revised *Landslide Mitigation Plan*." The public has a clear interest in the matter of slope stability and the consequences of failure to water quality during construction and to public health and safety during pipeline operation, and is entitled to a review of a complete Landslide Mitigation Plan. Given the unique intersection of steep terrain and precipitation patterns within the project area; **The Conservancy requests that a revised landslide mitigation plan be included in a supplemental DEIS and that plan should include an examination of all available records maintained by state and federal regulators, as well as all available anecdotal evidence pertaining to the sufficiency of landslide risk control measures for recent pipeline construction projects in VA and WV.**


CO80-10

Thank you for the opportunity to provide comments to FERC on this important issue. If you have any questions about these comments, please contact Judy Dunscomb, Senior Conservation Scientist at jdunscomb@tnc.org or (434) 951-0573.

Sincerely,



William A. Kittrell
Acting Virginia Executive Director



Thomas Minney
West Virginia State Director

Enclosures

Cc: Nels C. Johnson, N. American Energy by Design Project Director, The Nature Conservancy

CO80-10

Comment noted.

COMPANIES AND NGOs

CO81 – Preserve Roanoke

December 22, 2016

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

Reference: Docket # CP16-10-000

Dear Secretary Bose:

CO81-1 Preserve Roanoke, a chapter of Blue Ridge Environmental Defense League, respectfully submits these comments in response to the Draft Environmental Impact Statement (DEIS) for the proposed Mountain Valley Pipeline (MVP) released for public comment on September 16, 2016. Please consider these comments as having been submitted in behalf of both Preserve Roanoke and Blue Ridge Environmental Defense League.

These comments are offered as an Addendum to the comments that I submitted yesterday, December 21, 2016, under FERC Submission ID 723859.

ADDENDUM TO SUBMISSION ID 723859

Please include two images, attached, illustrating the visual impact of the MVP crossing the Coles-Terry Rural Historic District as seen from the Poor Mountain Overlook on the Blue Ridge Parkway, as discussed on page 11 of Submission ID 723859, and cited below:

Impacts to Coles-Terry Rural Historic District will affect the integrity of the Blue Ridge Parkway Historic District

The Coles-Terry Rural Historic District, which comprises a 2.4-mile wide expanse of land at the crest and on the east-facing slope of Poor Mountain, is visible from the Poor Mountain Overlook on the Blue Ridge Parkway. The construction of the MVP through the Coles-Terry Rural Historic District will drastically alter the appearance of Poor Mountain as viewed from the Poor Mountain Overlook, as well as from many points on U.S. 221 in Bent Mountain. The imposition of the MVP's treeless vertical "stripe" at the crest and down the eastern slope of Poor Mountain – indelibly demarcating 21st century industrialization – will permanently impair the appearance of the mountain as viewed from the Parkway. This incursion will result in further adverse effects to integrity of the Blue Ridge Parkway Historic District.

Sincerely,



Ann Rogers
Member, Preserve Roanoke
Section 106 Coordinator, Blue Ridge Environmental Defense League
Member, Roanoke County Pipeline Advisory Committee

CO81-1 The Coles-Terry Rural Historic District is addressed in section 4.10 of the EIS.

COMPANIES AND NGOs
CO82 – Preservation Virginia



December 21, 2016

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

RE: Mountain Valley Pipeline/Docket Number CP16-10-000
Potential Adverse Effect of the Proposed Mountain Valley Pipeline on Historic Resources in Virginia

Dear Ms. Bose:

Preservation Virginia, the nation's oldest statewide historic preservation organization, respectfully submits the following comments on the Draft Environmental Impact Statement (DEIS) for the Mountain Valley Pipeline (MVP), Docket No. CP16-10-000.

This letter is intended to call your attention to the direct and indirect effects of the MVP on historic resources within the pipeline's Area of Potential Effect in the Virginia counties within the pipeline's path- Giles, Craig, Montgomery, Roanoke, Franklin, and Pittsylvania. The specific examples below are from Pittsylvania County where our direct assistance was requested.

Direct effects consist of the pipeline crossing a site either eligible for listing on or already included on the National Register of Historic Places. Indirect effects include the introduction of visual or audible elements that are incompatible with a resource's historic character. Of the twenty four historic architectural resources recorded in Pittsylvania County within the APE, none were recommended by New South and Associates to be eligible for inclusion on the National Register of Historic Places or for additional study; however, we consider some of the Pittsylvania County sites as having characteristics that do warrant further study.

ARCHITECTURAL RESOURCES WITHIN THE APE

Lynchburg and Danville Railway

The Lynchburg and Danville Railway was surveyed for a potential historic district in 2007 but no determination was made for its eligibility for the National Register of Historic Places. This circa 1860s transportation route, connecting Lynchburg and Danville to provide access to commerce and industry along the southern railroad lines, is historically significant and needs further study to determine its eligibility for the National Register of Historic Places.

The Tosh Farm and Mease Cemetery

The Tosh Farm is an early tobacco-producing farmstead in the Sandy Level community. New South's architectural report states that the main dwelling at the Tosh farm has a massive chimney and the form suggests an eighteenth

CO82-1

FERC staff is consulting with Virginia SHPO for all determinations of eligibility and project effects, as stated in section 4.10 of the final EIS. The SHPO indicated that the Lynchburg and Danville Railroad Historic District is not eligible for the NRHP. New South Associates found the Tosh Farm and Mease Cemetery, Tobacco Barn at 8424 Museville Rd., Mease Farm, Toney Tobacco Barn, Calloway Level Primitive Baptist Church and Cemetery, and Cemetery at 71-5496 to be not eligible for the NRHP, and the VADHR concurred. The Phillip Craft House is outside the APE and not recorded or evaluated; and would not be affected by the MVP. Archaeological site 44PY427 will be avoided.

CO
82-1

COMPANIES AND NGOs

CO82 – Preservation Virginia

or early nineteenth-century date of construction. Due to the possible early date of construction, the property should be reevaluated for its eligibility to the National Register of Historic Places.

Tobacco Barn at 8424 Museville Road

This log tobacco barn is most likely related to the historic Roberts Farmhouse. The Roberts farmhouse is outside of the APE according to the New South report, however, if the tobacco barn is part of the Roberts Farmstead, the entire site should be considered and reevaluated for inclusion on the National Register of Historic Places.

Mease Farm

The Mease Farm, located in a bend of the Pigg River, is a farm complex containing a hand-hewn, log farmhouse and three hand-hewn, log tobacco barns. The farm's log structures may indicate an earlier date of construction and therefore the farm should be reevaluated for its eligibility for the National Register of Historic Places.

Toney Tobacco Barns

This property is described as consisting of six twentieth-century log tobacco barns. The fact that six barns exist in close proximity may indicate that the barns represent an intact cultural landscape related to tobacco production. Oftentimes tobacco barns were arranged as groups within the rural landscape but few of these intact groupings of tobacco barns remain in Pittsylvania County. Because of the significance of bright-leaf tobacco barns in Pittsylvania and neighboring counties, this group of barns should be further researched and be taken into careful consideration for possible inclusion on the National Register of Historic Places.

CO
82-1
cont.

The Phillip Craft House

According to the architectural report, the Phillip Craft House is outside the APE but it nonetheless remains in close proximity to the pipeline; its pristine rural landscape in the historic Red Eye community may be subject to indirect visual effects. The Phillip Craft house was placed on the Virginia Landmarks Register and the National Register of Historic Places in 2001. The one-and-a-half-story house, also known as "Reiseziel" in German, or "End of the Way, was built by Philip Craft between 1801 and 1819 and is unique not only for its brick construction but for the fact that its German builders were clearly influenced by the English tradition of construction. The house is a hall and parlor design with all four walls (which are 12 inches thick) laid in Flemish bond with scattered glazed headers. An unusual feature found in Virginia is the rarely used half-round bricks in both the water table and the chimney haunches.

Calloway Level Primitive Baptist Church and Cemetery

The Calloway Level Primitive Baptist Church and Cemetery are located on the west side of State Route 29 within the APE. In New South and Associates' architectural report the church is described as dating to the 20th century, but graves in the cemetery appear to be much earlier. The church and cemetery should be studied further to determine the site's eligibility for the National Register of Historic Places. We agree that the nearby Oak Grove Christian Church is potentially eligible for the National Register for which additional research is planned.

Cemetery and Site 44PY027

The possible slave cemetery 071-5496 and archaeological site 44PY027 are in close proximity and may represent an important Post-Emancipation African-American dwelling or farmstead. The EIS mentions avoidance of these sites but no specific information on avoidance is made clear.

ARCHAEOLOGICAL RESOURCES WITHIN THE APE

Because of the large amount of redacted information in the Tetra Tech archaeological report, it is difficult to review and comment on the archaeological sites recovered within the APE. Therefore, we are requesting that the full report be made available to Preservation Virginia in order that we can comprehensively review the archaeological data recovered.

CO
82-2

According to the archaeological report it appears that areas in Pittsylvania County have not been surveyed. This may be due to lack of access to these properties. We trust that these areas will be surveyed so that all parties can

CO82-2

Parties that signed a confidentiality agreement with Mountain Valley were provided copies of archaeological survey reports that pertained to their area of interest. As reflected in the final EIS, the entire pipeline route (19.5 miles) in Pittsylvania County, Virginia has been inventoried for cultural resources.

COMPANIES AND NGOs

CO82 – Preservation Virginia

20161222-5286 FERC PDF (Unofficial) 12/22/2016 12:39:55 PM

review and comment on any sites recovered. We also trust that we will receive further information on the eight archaeological sites (44PY417, 418, 419, 421, 422, 424, 425, and 427) that have yet to be evaluated. We agree with the Phase II testing of site 44PY0421.

Pigg River Area

CO
82-3

Hundreds of Native American artifacts have been recovered along the Pigg River. A village site exists approximately 1.5 miles north of the pipeline, near State Route 40, so it is unusual that few Native American artifacts were recovered on either side of the Pigg River where the pipeline crosses. We request further testing in the vicinity of the Pigg River, including deep testing, to discern if deeply buried archaeological deposits exist that may have been covered by alluvial sands as a result of river flooding.

CO
82-4

It is unfortunate that some consideration is not given to the pipeline's placement on very visible scenic rural landscapes that are not currently eligible for inclusion for the National Register of Historic Places. These include the Bryant Farm and Craddock Cemetery on Anderson Mill Road where the pipeline swath will have major visual impacts. Locating the pipeline closer to roadways, in pre-existing easement corridors, or even more heavily-wooded areas may help mitigate some of the negative visual impacts.

Thank you for taking our comments into consideration. We trust that FERC will ensure that all historic resources within the APE of the Mountain Valley Pipeline are recorded and evaluated completely.

Sincerely,



Sonja Ingram
Preservation Virginia

CO82-3

No archaeological sites were recorded at the crossing of the Pigg River; although site 44PY4327 (not eligible) was located about 1,000 feet to the west of the river. The Virginia SHPO accepted the archaeological survey reports for Pittsylvania County; so no additional work is necessary. Archaeological sites 44PY417, 418, 419, 421, 422, 424, and 425 were tested and found not eligible. Site 44PY427 would be avoided. Mountain Valley should have provided Preservation Virginia with copies of all cultural resources reports pertaining to Pittsylvania County.

CO82-4

An assessment of visual resources is included in section 4.8 of the EIS.

COMPANIES AND NGOs
CO83 – The American Petroleum Institute



Robin Rorick
Group Director
Midstream and Industry Operations

1220 L Street, NW
Washington, DC 20005-4070
USA
Telephone 202-682-8083
Fax 202-682-8051
Email rorickr@api.org
www.api.org

December 22, 2016

Kimberly Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

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

Dear Secretary Bose:

The American Petroleum Institute (API) represents all aspects of America’s oil and natural gas industry. Our more than 650 corporate members come from all segments of the industry and include producers, refiners, suppliers, marine transporters, as well as service and supply companies that support all segments of the industry. Our membership also includes a number of companies that develop, construct and operate natural gas pipelines as well as marketers and shippers that subscribe to these pipelines in order to move product to market. Therefore, API is greatly interested in the continued development of natural gas infrastructure to improve public access to this important resource.

As the Commission is well aware, America is in the midst of an energy revolution. The benefits derived from America’s oil and natural gas industry are vast and undeniable. The U. S. is now the world’s top producer of natural gas¹ – currently producing over 74 Bcf/d in 2015.² Our nation’s supply of this resource is enormous and readily available for decades to come thanks to continuing technological advances in accessing and extracting these resources.³ The abundance of this resource, as well as its affordability, reliability and flexibility has allowed the country’s consumers to reap tremendous benefits:

¹ EIA, Today in Energy, “United States remains largest producer of petroleum and natural gas hydrocarbons,” May 23, 2016.
² EIA Short-term Energy Outlook, May 10, 2016
³ According to a recent study by IHS, utilizing today’s technology, approximately 1,400 Tcf of natural gas is recoverable at a current break-even Henry Hub price of \$4/MMBtu or less. IHS, “Shale Gas Reloaded: The Evolving View of North American Natural Gas Resources and Costs.” February 2016, <http://press.ihs.com/pressrelease/north-americas-unc-onventional-natural-gas-resource-base-continues-expand-volume-and-de>.

An equal opportunity employer

CO83-1

CO83-1

The statements are noted.

COMPANIES AND NGOs

CO83 – The American Petroleum Institute



CO83-1
cont'd

- Power generators are increasingly turning to natural gas a low-cost fuel source – providing 33% of the power consumed in the U.S. in 2015, as much as coal and more than nuclear and renewable sources.⁴ Gas demand growth in the sector is expected to increase by 44% from 2015 to 2040.⁵ Greater utilization of natural gas for power generation has helped greatly reduce air pollution and greenhouse gas emissions.⁶ Further, the flexibility of natural gas-fired generation – for instance, its ability to quickly respond to fluctuation in electricity demand – is helping enable increased use of intermittent energy sources like wind and solar.
- Industrial demand for natural gas is also growing – over 20% since 2009.⁷ The manufacturing sector is making significant investments in the U.S. to expand operations in order to take advantage of the U.S.’s supply leading to increased job growth and tax revenue.⁸
- A number of pipeline projects are being developed to enable natural gas exports. Multiple studies have shown that increasing LNG exports will have significant benefits including creating more than 450,000 new American jobs and adding up to \$73.6 billion in economic activity.⁹ Besides, economic benefits, increased exports will also help reduce global air emissions¹⁰ and enhance national security.

Pipeline projects themselves also provide significant economic benefits. The latest forecasts show that over the next 20-years approximately 23,000 miles of new transmission infrastructure will be required to meet demand in North America.¹¹ This development (including other oil and gas infrastructure projects) will create over 300,000 jobs per year. The resulting addition to GDP (including employment wages and benefits, state and local taxes, and federal taxes, etc.) derived from these investments is more than \$758.1 billion.¹²

⁴ EIA, Electric Power Monthly, March 2016.

⁵ EIA, AEO 2016

⁶ Researchers at the National Oceanic and Atmospheric Administration (NOAA) found that the increased use of natural gas in power generation has led to 40 percent fewer NOx emissions and 44 percent fewer SO2 emissions since 1997. J.A. de Gouw, et al. 2014. “Reduced emissions of CO2, NOx, SO2 from U.S. power plants owing to switch from coal to natural gas with combined cycle technology.” Feb 21, 2014.

⁷ EIA, https://www.eia.gov/dnav/ng/NG_CONS_SUM_DCU_NUS_A.htm

⁸ According to the American Chemistry Council, “more than \$130 billion dollars of new investment in chemical manufacturing capacity has been announced (since 2010) to be put in place over the next decade.” American Chemistry Council, “The Rising Competitive Advantage of U.S. Plastics,” May 2015.

⁹ ICF, U.S. LNG Exports: Impacts on Energy Markets and the Economy, May 15, 2013

¹⁰ DOE, Life Cycle Greenhouse Gas Perspective on Exporting Liquefied Natural Gas from the United States, May 29, 2014.

¹¹ ICF, North American Midstream Infrastructure Through 2035: Leaning into the Headwinds, April 12, 2016.

¹² *Id.*

COMPANIES AND NGOs

CO83 – The American Petroleum Institute



CO83-1
cont'd

Regarding the Mountain Valley Pipeline (MVP) Project, the pipeline is being developed to meet existing and projected demand in the Southeast and Mid-Atlantic regions including providing new supply to the Roanoke Gas Company, a local gas distribution company. Supplying the growing demand in these regions, particularly for residential and industrial use, will provide significant environmental benefits to the communities the projects serves. Further, as noted in the Draft Environmental Impact statement, MVP has gone to great lengths to reduce the environmental impacts of the project and accommodate the request of property owners.

Enhancing our nation's natural gas delivery system is the key to ensuring that the benefits of this tremendous resource are maximized and available to all.

It is for these reasons that API supports this and other projects before the Commission and encourages the timely consideration and approval of the MVP project's application.

Sincerely,

A handwritten signature in black ink that reads "Robin Rorick".

Robin Rorick
Group Director
Midstream and Industry Operations
American Petroleum Institute

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

20161222-5311 FERC PDF (Unofficial) 12/22/2016 1:17:28 PM

December 22, 2016

To: Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

Re: Mountain Valley Pipeline LLC, Docket No. CP16-10-000
Comments of the Virginia Chapter of the Sierra Club concerning
Draft Environmental Impact Statement

Dear Secretary Bose:

The Virginia Chapter of the Sierra Club (Virginia Sierra Club) submits these comments on the Draft Environmental Impact Statement (DEIS) concerning the proposed Mountain Valley Pipeline (MVP). It does so on behalf of its 15,000 members, a number of whom live along the route of this and other interstate pipelines currently proposed to pass through Virginia.

CO84-1

As reflected in these comments, the DEIS is deficient in many respects and needs to be revised or replaced. Likewise, the Commission needs to stop approving all projects that have contract support and take seriously its duties to consider all factors affecting the public convenience and necessity, including protecting environmental interests and private property rights not to have land seized for privately owned pipelines just because another private party contracts for service.

In light of the comments being filed by other organizations, including those submitted by Appalachian Mountain Advocates and the Southern Environmental Law Center on behalf of various organizations, the Virginia Sierra Club has not attempted to cover all the topics that are addressed in those comments.

1. Failure to Consider Alternatives

CO84-2

The DEIS fails to adequately consider alternatives. It imposes absurd pre-conditions for serious consideration and fails to affirmatively seek out alternatives that would meet the presumed transportation need while greatly mitigating harms to the public and environment, land-takings and even costs.

CO84-1

See the response to FA11-2 regarding the adequacy of the draft EIS. The FERC will not issue a supplemental draft EIS. However, we will issue a final EIS that addresses comments on the draft.

CO84-2

We disagree. Alternatives are discussed in detail in section 3 of the EIS. This EIS concludes that the projects would not have significant adverse effects on the public or environmental resources (except for the clearing of forest).

For existing pipeline infrastructure to be a viable alternative (i.e., system alternative), then that system must have available capacity. Our analysis does not require an alternative to follow the same alignment as the proposed route, see our analysis in section 3.3 of the WB Xpress Pipeline Alternative and section 3.4. of the Northern Pipeline – ACP Collocation Alternative. We also evaluated a single pipeline alternative - see section 3.3 of the EIS.

The FERC analysis all applications independently, and the applicants must document that they market support. The WB Xpress, ACP, and MVP all have different shippers. The use of trucks and railways is a natural gas transportation alternative was raised by commenters, and considered in section 3. Renewable energy sources and energy efficiency are discussed in section 3 of the EIS.

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

December 22, 2016

CO84-2
cont'd

First, the DEIS requires that, to be considered, an alternative must have currently available capacity, begin at the same point and end at the same point. It even seems to require that any alternative “follow the same alignment.” That set of pre-conditions effectively eliminates serious FERC consideration of any alternative pipeline option—even though existing pipelines pass through or near the proposed area of production and connect that area to Transco Zone 5 in close proximity to Transco Station 165.

The result of this arbitrary approach—which will presumably also be followed in connection with pending proposals for the Atlantic Coast Pipeline and WB Xpress (which will also take gas from West Virginia through Virginia to Transco Zone 5)—is that three interstate pipeline projects will be built in roughly the same time frame, at much greater environmental and economic cost and with much greater harm to the property rights of landowners who will see their land taken under NGA 7(h) -- or be forced to yield in the face of Section 7(h) and litigation costs.

Here is a brief comparison based upon the relevant applications.

Project	Length	Capacity/day	Yr1 Rate Base/ Rate 100%LF	Other
MVP/EE	301 miles MVP + EE	2.0 MMDth	MVP \$3.6B rate base + ROR (incl'g 15.77% ROE) / Vol Rate \$0.977	Connects to WB Xpress & Transco
ACP/DTI	564 miles ACP +DTI Supply Header	1.5 MMDth	ACP \$5.05B + ROR (incl'g 15%ROE) + DTI \$478MM / Vol Rate \$1.75 +DTI (\$0.154) = \$1.90/Dth	Crosses WB Xpress and connects to Transco near where Transco already serves two generators to

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

December 22, 2016

				be served by ACP; Owned by affiliated utilities some or all with captive markets
Columbia WB Xpress	29 miles, mostly within existing ROW	1.3 MMDth	\$758M rate base + ROR (incl'g 12.98% ROE) Vol Rate \$0.266	Connects to Transco

CO84-2
cont'd

Even assuming the total transportation capacity were needed, the harm to the public, environment and property rights will be much worse as a result of FERC's authorizing three pipelines instead of using the Commissions' NGA authority either to deny all three applications unless the applicants combine their projects or, upon making clear that only one will be built, invite these applicants and others to conduct new open seasons offering to take the entire quantity through a single project or related projects.

The Commission cannot responsibly justify the environmental, economic and private property impacts from building 3 projects, mostly on new rights of way and often across sensitive areas and steep terrain, without seriously exploring in the DEIS and by other means the savings and benefits that would accrue from combining the projects into common, existing rights of way. The WB Xpress merely has to expand its existing system to deliver gas from West Virginia to Transco Zone 5, largely if not entirely using existing rights of way. And, even with the addition of some laterals and enlargement beyond its present proposals, the total environmental and economic harm would be greatly reduced. Why isn't an expanded WB Xpress vastly preferable to approving 3 projects? It still delivers to Transco Zone 5 and gas could be backhauled to Station 165, to Dominion's main delivery points, and farther south to North Carolina. No, it does not follow the same route as the MVP, but it can meet all or virtually all of the transportation objectives. The DEIS's superficial "analysis" is biased by presumptions and devoid of real data, which it made no effort to get from the applicants themselves.

December 22, 2016

Moreover, the projected transportation rate (at 100% load factor) for the MVP is nearly 4 times the rate for the WB Xpress, while the ACP is more than 7 times the rate for the WB Xpress. Are 3 pipelines really better than one, particularly when one is far less expensive and when the owners/shippers on the most expensive proposal would off-load all their “business risk” onto affiliated utilities and their customers. Is that in the public interest?

It is regulatory malpractice not to explore those options more closely than appears in the cursory examination in the DEIS—particularly since the DEIS essentially assumed the conclusions by insisting that any alternative had to start and end where the MVP application proposed. Seriously examining alternatives with an intent to approve better options is what the environmental impact assessment is supposed to help do. And, if FERC called upon the applicants to make proposals that would avoid the duplicative construction impacts, they could be expected to do so. Denying or even threatening to deny duplicative certificate applications would do wonders for reducing the environmental and economic impacts.

Apart from NEPA, Section 7(c) of the Natural Gas Act clearly requires the Commission to explore such issues in order to protect the “public convenience and necessity” and to protect private landowners from unnecessary use of Section 7(h)’s extraordinary grant of eminent domain to privately owned pipelines.

Second, the Commission does not perform its duties under NEPA when it considers specious alternatives, like trucks and railroads, to carry billions of cubic feet of natural gas per day. No such projects have ever been seriously proposed, let alone built. It also errs by failing to consider how clean energy and efficiency alternatives can fill the nation’s energy needs in the absence of expanded natural gas.

Third, the DEIS appears to concede that its review of alternatives is a *pro forma* exercise, not part of a serious effort to reduce environmental impacts by combining pipelines. Earlier, in a discussion of “out of scope issues” (I-21-23), the DEIS brushes off requests for a programmatic EIS, stating

there is no Commission plan, policy, or program for the development of natural gas infrastructure. The FERC’s review and approval of individual projects

CO84-2
cont’d

December 22, 2016

under the NGA does not constitute a coordinated federal program. In a previous case, the Commission stated that it “does not direct the development of the gas industry’s infrastructure, either on a broad regional basis, or in the design of specific projects.” Nor does the FERC engage in regional planning exercises that would result in the selection of one project over another. Rather, the Commission acts on individual applications filed by entities proposing to construct interstate natural gas pipelines.

CO84-2
cont'd

Although the Commission has historically sought to avoid duplicative pipelines and gotten pipelines to combine, it no longer chooses to do so. To the extent the 1999 Statement of Policy precludes or evades such analysis, it must be re-examined in cases such as these where multiple pipelines are proposed to do essentially the same thing – move gas from West Virginia to Transco Zone 5 and places that can be reached from there. Incentivizing or requiring development of one pipeline to meet the alleged regional needs would far better serve the public interest and better protect private landowners and their neighbors from the intrusive use of eminent domain and the threat of it. Even if there was merit to the Policy Statement’s assumption that markets will protect the public interest, those assumptions are no longer valid. Given the proliferation of pipelines, popular opposition and climate change, the factual framework has changed and the policies need to change as well.

2. Takings of Private Property Land

The Commission seems to treat the taking of private land and the threat of eminent domain as a mere by-product of NGA Section 7(h) – Congress’s fault, not FERC’s. But takings by legal force or threat are the direct result of the Commission’s Section 7(c) decisions to approve a proliferation of pipelines across new *areas whenever private corporations contract to build those pipelines*. That improperly elevates private business interests over the rights of private landowners.

CO84-3

Why does the Commission think that hundreds of private citizens have been intervening in these proliferating pipeline cases to protest the sprawl of interstate pipelines? Whatever may have been true in the past, FERC has lost any reputation as a fair arbiter of public and private interests. Under its chosen method of implementing its 1999 Policy Statement, basically any privately proposed project that has contract support (even if from affiliated monopoly utilities). Combining projects to

CO84-3

See the response to CO16-1 regarding eminent domain.

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

December 22, 2016

transport gas with a minimum of facilities and public disruption is never on the table, as explained by the DEIS's discussion of "out-of-scope issues."

CO84-3
cont'd

And, no, the Commission is not misunderstood by angry citizens, FERC's open-construction policies are understood all too well. The Commission needs to revisit its implementation of the 1999 Policy Statement in order to better protect people and the public interests generally. The Policy Statement was never a regulation that limits FERC's ability to consider all factors relevant to the public interest, and it cannot lawfully be treated as one.

3. Greenhouse Gases and Climate Change

The DEIS's purported consideration of the proposed project's impacts on climate change is seriously deficient. The DEIS confines its actual analysis to emissions from construction and physical operation (compressors) of the pipeline. It refuses to consider upstream emissions or downstream emissions made possible by the pipeline. Instead, in its "out-of-scope issues" discussion (I-22), the DEIS says that FERC cannot estimate how 2.0 BCF of incremental transportation capacity might affect natural gas production or combustion because it doesn't regulate producers and doesn't know exactly what wells will be drilled.

CO84-4

We received comments suggesting that the MVP would lead to additional exploration and production of natural gas in the Marcellus shale region. According to some, this increased or "induced" production would correspondently result in more hydraulic drilling or "fracking." The FERC does not regulate activities associated with the exploration and production of natural gas, including fracking. Those activities are regulated by individual states. While we know generally that natural gas is produced in the Appalachian Basin, there is no reasonable way to determine the exact wells providing gas transported in the MVP and the EEP pipelines, nor is there a reasonable way to identify the well-specific exploration and production methods used to obtain those gas supplies.

While it is true that FERC may not know the identities of "the exact wells" that will feed the proposed pipeline 2.0 Bcf of natural gas per day over the 35+ year life of the pipeline, it does not need to. Nor does it need "to identify the well-specific exploration

CO84-4

We disagree. Climate change is discussed in sections 4.11 and 4.13 of the EIS.

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

20161222-5311 FERC PDF (Unofficial) 12/22/2016 1:17:28 PM

December 22, 2016

and production methods used to obtain those gas supplies.” FERC does know that the pipeline is intended to receive, transport and deliver up to 2.0 Bcf per day (presumptively at an 80-100% load factor), and it knows that production in the general supply region is predominantly the result of hydraulic fracking and shale production. Its own reports and those of DOE’s say as much. Like the proposed ACP, WB Xpress, and other pending and recent projects, the MVP is intended to add to transportation capacity from this area, not displace use of existing capacity. But-for FERC’s approval of this and a host of other new pipelines or of expansions of existing pipelines, less gas would be produced, transported or combusted, presumptively by the amount of the expanded capacity. Indeed, if existing pipelines already have sufficient capacity to transport this gas, then the public convenience and necessity would be better served by keeping those pipelines filled with natural gas than by clearing land, laying pipe, crossing streams and wetlands, increasing noise and pollution, and taking peoples land.

CO84-4
cont’d

If FERC were really confused about this, it could look to the application, which states that the MVP is designed “to satisfy the growing demand for natural gas by local distribution companies (“LDCs”), industrial users, and power generation facilities in the Mid-Atlantic and southeastern markets, as well as markets in the Appalachian region, using natural gas produced in the Appalachian Basin shale region” (Application p.2) and “the Project will serve the growing natural gas needs of the Mid-Atlantic and southeastern markets as well as markets along the pipeline route.” (Application p.14-15.)

It could also read publications documenting the link between adding pipeline capacity and increasing gas production, such as EIA’s 2013 report, “[New infrastructure boosts West Virginia, southern Pennsylvania natural gas production.](http://www.eia.gov/todayinenergy/detail.php?id=12311)” <http://www.eia.gov/todayinenergy/detail.php?id=12311> (July 30, 2013). Or, the Commission could read its own reports, such as FERC’s “State of the Markets Report 2015” (“SOM 2015”), which clearly links tight transportation capacity to lower wellhead prices in the Marcellus/Utica shale areas and to falling exploration rates.

Neither FERC nor anyone else can seriously doubt that expanding transportation capacity will induce new drilling, production, combustion and methane leaks. Producers defer drilling and well-completion when prices are low and outlets are filled. The DEIS is plainly deficient by pretending otherwise. Nor can it hide behind uncertainty of the identities of the exact wells that will produce the gas.

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

20161222-5311 FERC PDF (Unofficial) 12/22/2016 1:17:28 PM

December 22, 2016

The Commission is amply capable of making reasonable, informed assumptions about the likely range of CO₂ emissions from added combustion and the likely methane releases from natural gas production needed to fill the MVP and other proposed pipelines, as well as from transportation and distribution induced by new transportation capacity. With that, FERC can estimate the GHG contributions from a proposed project and assess whether the public interest is served by continued rapid expansion of natural gas production, delivery and combustion from this and other proposed projects.

CO84-4
cont'd

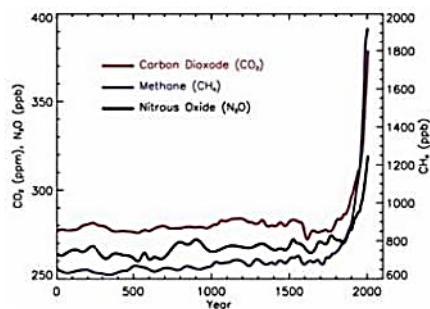
Merely quantifying emissions *from construction and operation of the pipeline itself* fails to inform the Commission and the public of the real impacts from projects such as this. It is clear that 2.0 Bcf of new gas deliveries per day over the 35+ year life of the proposed pipeline will dwarf the estimated emissions from pipeline construction and operation. At a 90% load factor, that would mean approximately 23,000 Bcf of additional CO₂ from combustion over 35 years, plus warming impacts from methane from production, transportation (leaks and venting).

The Commission should also recognize that methane's global warming impact is 87 times CO₂ over 20 years, which is closer to the atmospheric life of methane and the period in which we most need to be cutting GHG emissions. The higher multiple of 87 times over 20 years is more relevant to our global warming predicament than a 100-year figure of 25 CO₂e, which is referenced in the DEIS.

Furthermore, FERC's EIS needs to recognize that every country in the world has now joined scientists in recognizing that we must collectively act to reduce GHG emissions rapidly in order to keep global warming temperatures from rising more than 2.0°C above pre-industrial averages. Indeed, the Paris Agreement calls for keeping the temperature increase "well below" 2.0°C. Not only must we reduce GHG emissions rapidly, we must achieve net-zero emissions sometime after 2050.

The rate of human CO₂ emissions from fossil fuels and its impact on atmospheric concentrations is illustrated by this graph. CO₂, CH₄ and N₂O have skyrocketed from business-as-usual fossil fuel policies.

December 22, 2016

Rate of Change Last 2000 Years: CO₂, CH₄, N₂O(IPCC 4th Assessment Report, Fig. 1, FAQ 2.1, Chapter 2 (2007))CO84-4
cont'd

The harms from human-caused climate change are already profound; and crossing the 2.0°C level presents intolerable risks that warming and climate impacts will pass a tipping point and spiral out of control. These are not vague concerns for the unforeseeable future. According to NOAA:

- 15 of the 16 hottest years since 1880 occurred between 2001 and 2015;
- 1998 (which allegedly started a "pause") is tied for 6th hottest (soon to be 7th hottest);
- 2016 is on track to surpass worldwide temperature records set by 2014 and 2015 so that 16 of the 17 hottest years will have occurred in just this century;
- 2016 will be the 40th consecutive year above 20th Century average.

We are already experiencing large changes in weather patterns, forest fires, sea levels, disease and pest vectors, agriculture, and national security threats. Like scientists, the U.S. military and intelligence community have no doubt about the threats posed by climate change. These harms from global warming will get worse and *accelerate* to get much worse the longer we wait to reduce greenhouse gas emissions, particularly CO₂ and methane (CH₄) which are products of fossil fuel production, transportation and combustion.

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

20161222-5311 FERC PDF (Unofficial) 12/22/2016 1:17:28 PM

December 22, 2016

CO84-4
cont'd

Nor is this an abstract issue to Virginians. Parts of Virginia already experience coastal flooding during high tides and common rain events. The U.S. Navy facilities are threatened by sea level rise, as is the regional economy that has arisen to support the military presence. Hampton Roads is right behind New Orleans for vulnerability to sea level rise and potential storm damage. Virginia has also experienced forest fires during droughts, temperatures have risen, and extreme precipitation events even though neighboring states have fared worse.

Since GHG emissions, particularly CO2 are cumulative, it is essential to start aggressively reducing CO2 and other GHG emissions to prevent a global and national catastrophe. There is a finite amount of CO2 and other GHGs that can be emitted—we cannot exceed the limit without terrible consequences to ourselves, our children and grandchildren.

It may be true that FERC cannot match each ton of CO2 to a specific climate harm, but the DEIS does a disservice by pretending that's the test. While emissions from each individual new pipeline may represent a small addition to the worldwide problem of GHG emissions, the emissions they induce are not small and the sum of FERC's approvals has a very large. Even if FERC cannot say exactly what climate harm is traceable to each new pipeline, it certainly can recognize that each additional pipeline will probably make climate change worse, and that by facilitating 35-60 year investments in transportation capacity, its actions contribute to a momentum for growth and continuation of emissions that need to be cut back sooner rather than later.

The real policy test is how can the Commission help to reduce or, at least, not add to GHG emissions and therefore harms from CO2 and other GHGs. There are steps the Commission can take, but it will make climate change (or the economic consequences of sharp reductions later) worse as long as its decisions and environmental assessments duck the problem of induced emissions and fail to consider mitigating conditions that would help to hold down emissions.

The Commission needs to analyze how new natural gas combustion and methane leakage fit within a total GHG emissions budget, alongside other sources of GHGs, over the period in which the proposed pipeline will be operating. Even if each

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

20161222-5311 FERC PDF (Unofficial) 12/22/2016 1:17:28 PM

December 22, 2016

emission source were small when viewed in isolation, the cumulative impacts are huge, and the Commission's power to approve or disapprove proposals to transport natural gas from production areas to markets places it in a central position to exacerbate or mitigate climate change. None of this is reasonably considered by the DEIS.

Staying within the Paris Agreement's 2.0°C cap on average temperature increases requires limiting future GHG pollution, *i.e.*, staying within a "carbon budget" in CO2-equivalent (CO2e) emissions. For a 66% chance of staying below a 2°C increase, total worldwide emissions of CO₂e from 2011-2050 must be under 825 gigatons (1,000 million tons/GT). Less than 650 GT remains in the budget, as 175 GT were emitted 2011-2015. The problem is driven by the fact that much of the CO₂ emitted today will stay in the atmosphere for centuries (millennia actually) declining only slowly, condemning many generations beyond ours to the climate harms we cause. (This is illustrated by a graph in the attached report, which shows the slow decline of warming impacts from CO₂ over 300 years. That report, which also documents the cumulative harm from CO₂ and methane associated with the proposed MVP and ACP pipelines, was primarily authored by Dr. Richard Ball, a climate scientist and physicist who, before retiring, spent 24 years working for DOE and EPA, including several as a lead author of portions of major IPCC reports) As observed by the President when speaking to the U.N. in September 2015:

"We cannot condemn our children, and their children, to a future that is beyond their capacity to repair. . . We are the first generation to feel the impact of climate change, and the last generation that can do something about it."

FERC, too, must play a role in protecting our children and our neighbors.

In the Paris Agreement, the United States promised to reduce its CO₂ emissions by 26-28% from 2005 levels by 2025, and it reiterated its path to "deep decarbonization" with an 80% reduction of CO₂e emissions by 2050. The EU promised even greater reductions. We recognized that, in order to stay below a 2°C increase, these are the kinds of reductions that are needed from industrialized countries that contributed most to today's high CO₂ concentrations.

CO84-4
cont'd

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

20161222-5311 FERC PDF (Unofficial) 12/22/2016 1:17:28 PM

December 22, 2016

To put the deep decarbonization goals into perspective, FERC needs to recognize that, even if all coal burning were to end, CO2 emissions from natural gas and petroleum consumption would need to decline by 68% from 2015 levels by 2050, and that doesn't consider related methane emissions. (See data in Table 12.1, EIA Monthly Energy Review November 2016.) Further, as discussed below, it is not enough to reduce CO2 emissions 80% by 2050 if we start in 10-20 years. CO2 is cumulative, and we are rapidly using our remaining allotment.

The problem created by constant gas pipeline expansions is well illustrated by Oil Change International's July 2016 report, "A Bridge Too Far: How Appalachian Basin Pipeline Gas Expansion Will Undermine U.S. Climate Goals,"

<http://priceofoil.org/2016/07/22/a-bridge-too-far-report/> Other aspects of the risks of continuing to build pipelines at the current pace are discussed in IEEFA's study, "Risks Associated With Natural Gas Pipeline Expansion Across Appalachia,"

<http://ieefa.org/wp-content/uploads/2016/05/Risks-Associated-With-Natural-Gas-Pipeline-Expansion-in-Appalachia-April-2016.2.pdf> Yet the Commission and the DEIS are seemingly oblivious to these risks and their likely consequences for ratepayers, the economy and the environment.

The DEIS accurately says that some of the natural gas "may" displace coal and that coal emits more CO2 than natural gas. But, the DEIS ignores the facts that the combination of CO2 and methane emissions can make natural gas worse than coal's CO2 from combustion alone. It also ignores the fact that some natural gas will displace zero-carbon renewables and efficiency. Nuclear advocates complain that zero-carbon nuclear plants are also being shut down by cheap natural gas. The sum of these impacts is negative for the climate. For example, in its last IRP, Virginia Electric Power, an affiliated-recipient of proposed ACP gas, projected that it would increase its total CO2 emissions by over 80% by 2040, largely through increased gas-fired generation. These impacts need to be assessed and addressed, not ignored.

The DEIS makes no effort to dissect the impacts of constant pipeline expansion or to consider what creative certificate conditions might help mitigate those impacts. Every new pipeline or pipeline expansion authorized by the Commission contributes to this growing climate problems, and FERC's policies need to be reconsidered and revised to address this problem. There is no reason FERC cannot do this. The NGA's "public convenience and necessity standard" encompasses all factors affecting the

12 | Page

CO84-4
cont'd

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

20161222-5311 FERC PDF (Unofficial) 12/22/2016 1:17:28 PM

December 22, 2016

public interest, including the environmental consequences of its actions. Moreover, FERC cannot be a passive observer; it has an affirmative duty to investigate and develop facts and analysis needed to serve the public interest. See, e.g., *Scenic Hudson Preservation Conference v. FPC*, 354 F2d 608 (2d Cir. 1965) (“In this case, as in many others, the Commission has claimed to be the representative of the public interest. This role does not permit it to act as an umpire blandly calling balls and strikes for adversaries appearing before it; the right of the public must receive active and affirmative protection at the hands of the Commission.”)

CO84-4
cont'd

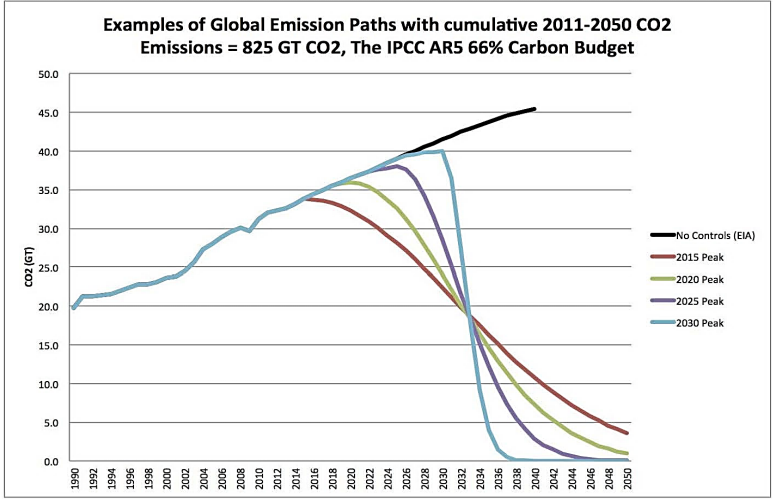
Historically, the Commission worried about the adequacy of natural gas reserves to support new pipelines. It required pipelines to prove that they were backed by at least 20 years of proven reserves. It had a public interest policy against service to wasteful boiler fuel uses, as well as policies against duplicative and wasteful construction. Now, the greatest problems are the capacity of the atmosphere (and ocean) to absorb emissions of GHGs, particularly CO₂ and methane, without heating the planet to ever more dangerous levels and the destructive and wasteful race to build new pipelines that cannot remain full for their useful lives without contributing to the climate catastrophe.

Like funds in a bank account, every future unit of CO₂ and methane pollution must be subtracted from the limited pool of future emissions that the atmosphere can absorb without catastrophic harm to our society, children and grandchildren. If we use up all or most of the potentially tolerable GHG emissions in the next 20 years, there will be an economic and energy-combustion collapse thereafter.

These impacts are illustrated by the following graph, which shows alternative pathways to reducing CO₂ emissions by amounts needed to stay below a 2.0°C temperature increase. As it illustrates, delaying reductions in CO₂ emissions will have profound consequences. In effect, delaying CO₂ reductions means that a slope becomes a cliff – a crash landing – and investments made now in long-lived assets, including natural gas pipelines and gas-consuming uses, will face a high probability of being stranded or underutilized.

December 22, 2016

CO84-4
cont'd



This graph illustrates that the critical GHG reductions must begin now or in the next few years—well within the lives of pipelines and gas-burning facilities being built or proposed today—or the economy will face the collapse of a pipeline and fossil fuel bubble or a climate wreck. The socio-economic impacts of delay could make the housing collapse and great recession look modest by comparison—alternatively, fossil fuel investors will demand to continue to operate and we will suffer the socio-economic and environmental catastrophe of climate change. The danger that we will cross a tipping point is very real and an existential threat to our children, grandchildren and country. It is not surprising that former Treasury Secretary Henry Paulson was quoted earlier this year saying, “I don’t think there’s a bigger long-term economic risk than climate change.”

Planning and action must begin now. Every time the Commission grants a certificate authorizing a new interstate pipeline or expansion of capacity by an existing pipeline, it adds decades of CO2 and methane emissions to the ledger. The problems created

December 22, 2016

are multifaceted, but not fairly avoided. As a result of the profound risks, the Commission should stop acting new interstate pipelines until after it has worked through all the issues in revised environmental assessments that fairly address the issues and possible solutions. It should also reexamine its 1999 Policy Statement, which has evolved as a rubber stamp for new pipeline construction as long as local environmental impacts are addressed.

Issues that must be addressed include, but are not limited to, the following.

- The CO₂ and methane emitted as a result of expanding pipeline take-away and delivery capacity will be on top of other emissions from natural gas and non-natural gas sources.
- Combustion and leaks of natural gas will run beyond our climate-budget limits if the expanded pipeline network stays full for the economic and physical lives of the pipelines. Pipelines approved today are designed to operate beyond 2050 and therefore long after sharp reductions in GHG emissions are needed.
- As the CO₂ budget cap is approached and future GHG limits tighten – and they will because physical realities cannot (and dare not) be overridden forever by short-term politics – either all pipelines will be underutilized and face financial harm or some (perhaps many) will fail outright. The Commission has previously seen stranded costs and bankruptcies in both natural gas and electricity markets, and they are not pretty. Continuing to authorize new pipeline capacity in the face of climate limits will cause worse gas and electric stranded assets than FERC has seen before. FERC is responsible for the consequences of every pipeline it approves.
- The Commission needs to address these issues now in order to protect the public interest. Rather than continuing to approve every proposed pipeline that has a near-term market, it must begin to prioritize natural gas pipelines, potential uses and users, and possibly producers and production areas well before the aggregate CO₂e limits are reached.
- It should rationalize pipeline expansions and reduce duplicative and wasteful construction. The mere fact that it has not done so in recent years does not mean its public interest duties are satisfied by continuing to ignore the problems created by expansions. At a minimum, FERC can implement policies that encourage expansions and use of existing rights-of-way, as well as combined projects (as it has in the past).

CO84-4
cont'd

December 22, 2016

CO84-4
cont'd

- FERC's curtailment priorities recognize that residential, small commercial and industrial process uses need to be protected in the event of a supply shortage. Looking ahead, as FERC and EISs are expected to do, the Commission needs to consider what will happen to those priority-users and others if aggregate natural gas demand and capacity are raised based on the implicit, false assumption that the atmosphere can absorb GHG emissions at current or growing levels without limit. What will happen to the gas-fired generators and manufacturing facilities and large commercial facilities that were led to believe that there would be ample supplies of natural gas for the lives of the pipelines being built? How will the consequences of overbuilding be allocated among the new and pre-existing pipelines? What will happen to the economy when the blind surge for new production and demand runs into the climate limits that are amply known today?
- The DEIS does not seriously evaluate how the gas will be utilized and whether it will add to CO2 and methane emissions (e.g., by increasing total fossil fuel consumption or displacing zero-carbon energy sources or efficiency investments) or lock-in CO2 emissions at unsustainable levels even if there are short-term reductions.
- It does not address how zero-carbon options, like wind, solar and efficiency, can meet energy needs at lower environmental costs in the absence of a constantly expanding pipeline grid. See *City of Pittsburgh v. FPC*, 236 F.2d 741 (D.C. Cir. 1956) ("The existence of a more desirable alternative is one of the factors which enters into a determination of whether a particular proposal would serve the public convenience and necessity. That the Commission has no authority to command the alternative does not mean that it cannot reject the proposal.")
- Similarly, FERC needs to consider (a) what mitigating conditions it can place on new certificates in order to reduce the risks and (b) whether, absent adequate conditions, it should reject a certificate application. Certificate conditions could, for example, encourage or require natural gas customers to co-construct zero-carbon renewables, make efficiency investments or commit to replace dirtier combustion (e.g., coal plants) to reduce aggregate emissions. Perhaps transportation should be limited to producers who certify measures to eliminate methane emissions from their operations. Absent such measures, FERC cannot reasonably approve new projects that may make 35+year

December 22, 2016

CO84-4
conf'd

commitments to natural gas production and consumption, while jeopardizing the overall public interest in avoiding catastrophic climate change.

- The Commission also needs to evaluate the extent to which existing pipeline capacity is sufficient to meet long-term needs without encouraging reliance on expanded natural gas usage that cannot be sustained. Inasmuch as the current natural gas transportation network can deliver approximately 30Tcf per year – up roughly 50% in the last decade – for decades to come, how much more can be tolerated. It may be that new production should be reduced or at least delayed and stretched out over time rather than building an eminently-burstable bubble of production and transmission capacity.

The central purpose of a NEPA-required EIS is to examine, describe and quantify these and other environmental impacts and risks so that the Commission’s decisions can rationally and responsibly address these problems and their implications when considering individual applications and potential new policies. Instead, the DEIS in this ducks all of these climate issues, even though it acknowledges that GHGs are causing serious harms that will get worse the more CO2 and methane are emitted. In effect, it says that it doesn’t need to consider these critical issues because each pipeline is only part of the larger picture; the FERC staff doesn’t know whether adding pipeline capacity will increase consumption and production (even though the Applicant says it will have those impacts and FERC takes pride in helping to grow the natural gas market); and maybe some of the new usage will displace coal burning for electric generation (while not also considering that it will displace zero-carbon generation due to its price advantage and the absence of a price on carbon).

4. Environmental and Construction related comments on the DEIS

CO84-5

I. Page ES-4:

“The project would traverse a variety of soil types and conditions. Permanent impacts on soils would occur only at the aboveground facilities, where the sites would be covered with gravel and converted to industrial use. Construction of the MVP would disturb about **4,189 acres of soils that are classified as having the potential for severe water erosion**. Construction of the EEP would affect about 126 acres of soils rated as being prone to erosion by water.”

CO84-5

Erosion control measures would be employed as specified in the FERC’s Plan.

CO84-6

Page 2-49:

CO84-6

See the response CO55-4.

December 22, 2016

Section 2.4.2.16 Rugged Topography

CO84-6
cont'd

"The MVP would cross **18.5 miles of slopes between 15 and 30 percent grade, and 72.6 miles of slopes greater than 30 percent.** The Applicants stated that in rugged terrain, temporary sediment barriers would be installed, including silt socks and reinforced "super" silt fence, to keep soils and rolling rocks within the construction right-of-way. Temporary slope breakers would be installed during grading, to divert water into off-right-of-way vegetated areas, through hay bales, or aggregate (all aggregate would be removed during removal of the temporary slope breaker). Temporary slope breakers would remain in place until permanent erosion controls were installed. Sand trench breakers would be installed in the trench to prevent the movement of water."

Comments on page ES-4 and page 2-49:

CO84-7

The Mountain Valley Pipeline proposes to construct a large diameter pipeline across terrain that is not suitable by nature for a pipeline. The MVP is attempting to modify steep slopes to conform to its proposed interests in building a pipeline through rugged terrain.

Steep slopes are generally defined as land with a slope angle of 20% or greater. Steep slopes are prone to natural disasters. Rain falling on steep slopes runs off much faster than rain that falls on flat land surfaces. The steeper the slope, the greater the potential for erosion, and increased risk of land slides both during and after construction.

Extreme erosion causes grave problems such as water pollution, increased flood hazard, loss of fish populations, degradation of habitat, and the general impairment of the stream ecosystem. Eroded material accumulates in streams where it buries spawning areas, makes water unsuitable for human use, and reduces channel capacity. Grading practices, vegetation removal and other construction and development activities can increase sediment yields as much as 40,000 times. Over the course of a year, a ten-acre construction site can generate and send as much as 2,000 tons of sediment downstream, the equivalent of 200 dump truck loads of earth.

CO84-7

Pipelines have been installed on steep slopes all over the country, including in the Rockies, Sierra, and Cascades. See section 4.1 of the EIS for measure that would mitigate impacts on slopes. See section 2.4 of the EIS regarding erosion control plans.

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

20161222-5311 FERC PDF (Unofficial) 12/22/2016 1:17:28 PM

December 22, 2016

Soil texture is a primary factor affecting soil erodibility which is reflected in the soil erodibility factor, K. The K value is an indication of the susceptibility of different soils to erosive forces. The soils listed in Appendix N-2, Soils in Virginia, show a listing of soils that have erosive factors exceeding 0.32, which indicates highly sensitive soils to water erosion. Soil types with K values over 0.32 include:

Giles County – MP 195.5 to MP 215.4 - Carbo-rock complex, Faywood silt loam, Braddock sandy loam, Frederick silt loam, Sequoia silt loam, Poplimento silt loam, and Timberville silt;

Montgomery County – MP 221 to MP 236.1 - Caneyville-Opequan rock complex, Groseclose silt, Gilpin silt loam, Weikert stony silt loam, Lowell silt, Duffield silt, Ernest silt, Vertrees silt, Guernsey silt loam, McGary silt loam, and Purdy silt.

CO84-7
cont'd

These two counties have more than 35 miles of highly sensitive soils with high K values indicating a high degree of susceptibility to erosion by rainfall. The impacted areas have more than 40 inches of rainfall during a year, with a high probability of intense rainfall events during the spring and summer.

Despite efforts to revegetate steep, mountainous slopes after construction, slopes between 33% and 50% have a poor chance of revegetating, and slopes over 50% have an improbable chance of revegetating¹. Steep slopes will make it difficult to properly install erosion control devices during construction.

Steep slope analysis requires submission of the following reports, prepared by professionals in their respective fields:

1. Hydrology and Geology Report. This report should include information on the hydrological activities of the area, the effect of hydrologic conditions on the proposed development, and any hydrological or erosion hazards. This report shall also include geological characteristics of the site, its suitability for development, its carrying capacity, and any geological hazard that might present a hazard to life and property.
2. Soils Report. This report shall include information on the nature, distribution and strength of existing soils, the adequacy of the site for development purposes, and an assessment of grading procedures required to impose the minimum disturbance to the natural state.

¹ Prevent soil erosion on your property, A Homeowner's Guide to Erosion Control, NRCS, www.ca.nrcs.usda.gov.

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

20161222-5311 FERC PDF (Unofficial) 12/22/2016 1:17:28 PM

December 22, 2016

In areas of steep slopes, the ability of construction equipment to maneuver safely and with dexterity is hampered. Tasks that would normally be routine on gentle slopes become extreme challenges to the capabilities of equipment and operators. The ability to operate equipment safely becomes a major focus of the construction operation.

It is highly doubtful that the erosion control devices on steep slopes will be maintained on a daily basis as required by the erosion control plan narrative, unless there is constant monitoring of the job site by erosion control inspectors. Contractors often try to save time and money by cutting corners or taking shortcuts when no one is monitoring the construction. It is more difficult to maintain waterbars or trench breakers on steep slopes. The waterbars and trench breakers are an impediment to construction and get in the way of the construction operation. There are numerous reported cases of contractors not installing or maintaining erosion control devices.

A case Study for a 12 inch pipeline constructed in Giles County, VA demonstrates one case of a pipeline construction with severe erosion control problems. The pipeline was built in 2014 and the pipeline corridor is still not vegetated. The contractor did not install an adequate number of erosion control devices or maintain the erosion control devices that were in place. An intense rain event occurred when the pipeline corridor was bare and the erosion control measures were not adequate to prevent soil from eroding downslope. Mud flowed down the mountain side into streams at the bottom of the slope. Additional work was required to restore the impacted streams. Contractor negligence and inadequate erosion control devices on steep slopes was a cause for the failure.

These photos were taken during construction of the 12 inch pipeline in Giles County, VA, near the proposed route of the Mountain Valley Pipeline. This case is focused on a section of the pipeline that crosses Peters Mountain in the Jefferson National Forest. The agencies with primary regulatory responsibility for this part of this pipeline project are the Forest Service and the VA DEQ. It would be reasonable to expect that the highest standards of performance and regulatory oversight would apply to a pipeline construction project on national forest land. Instead, this case study provides substantial evidence of both careless construction practices and regulatory system failure.

CO84-7
cont'd

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

20161222-5311 FERC PDF (Unofficial) 12/22/2016 1:17:28 PM

December 22, 2016

CO84-7
cont'd



CO84-8

II. Review of Appendix T, Draft Erosion and Sediment Control Plan:

Comments:

Sheet 18.01 –

CO84-8

Erosion control measures would be employed as specified in the FERC's Plan.

COMPANIES AND NGOS

CO84 – Sierra Club, VA Chapter

20161222-5311 FERC PDF (Unofficial) 12/22/2016 1:17:28 PM

December 22, 2016

CO84-8
cont'd

1. Station 0+00 to Station 9+40 is on an average slope of 39%. Soil loss in this section is 63 tons per year per acre. This increases the sediment loading in this area to 170 tons per year after construction.
2. Waterbar/slope breakers - Sediment Removal Efficiency: very low. They are not recommended for active access roads or skid trails due to the difficulty of moving equipment over them as well as the need for continual maintenance due to damage from traffic. Provide reinforcement of the berm with a log, steel pipe, etc. to maintain the integrity of the waterbar between maintenance operations.²
3. The temporary waterbars/slope breakers do not show outlet protection at the ends of the waterbars. Show all slope breakers with outlet protection and conveyance channels to adequate outfalls. Conveyance channels are required to convey runoff and sediment downslope to an adequate outfall with outlet protection. None of this is shown on the plan sheet.

Sheet 18.02 –

4. The average slope from Station 13+00 – 23+00 is 32%. Soil loss after construction will be 44 tons per acre per year. Increased sediment loading for this section is 127 tons per year.
5. The temporary waterbars/slope breakers do not show outlet protection at the ends of the waterbars. Show all slope breakers with outlet protection and conveyance channels to adequate outfalls. Conveyance channels are required to convey runoff and sediment downslope to an adequate outfall with outlet protection.
6. Show diversions on either side of SS3 stream crossing at Station 31+00. The compost filter socks shown below the timber matting is not adequate for erosion control because the slope lengths above the socks are too long. Slope lengths exceed the maximum allowable for use of compost socks at the stream crossing.

Sheet 18.03 –

² PA DEP erosion and sediment pollution control program manual, March 2012, page 21.

COMPANIES AND NGOS

CO84 – Sierra Club, VA Chapter

December 22, 2016

- 7. Station 40+00 to Station 46+00 has slopes over 30% which require slope breaker spacing of 50 foot intervals. The plan shows spacing of 100 feet and 150 feet. Revise the plan and profile to show slope breakers at 50 foot intervals.
- 8. Revise the plan to include a diversion berm on the upslope side of the construction limits of disturbance from Station 52+00 to Station 66+00. The drainage area above the limits of disturbance exceeds the maximum drainage area for use of a temporary right of way diversion on the downslope side of the construction limits. A diversion above the construction area is needed or divert runoff around the construction area.
- 9. Show the appropriate number of waterbars from Station 59+00 to Station 66+00. There are two shown in this section which does not meet the criteria for temporary and permanent waterbar installation.
- 10. Correct the text at Station 68+00 to read: Matchline Sheet 18.04.

CO84-8
cont'd

Sheet 18.04:

- 11. The section from Station 90+00 to Station 10402+00 is very steep, over 30% gradient. This section will be very difficult to construct due to the steep slopes.

Sheets 18.01 thru 18.04 are the only sheets submitted as a site specific erosion control plan for public review. During research of MVP submittals, the erosion control plans for the remainder of the project were not submitted and available for public review. There is a distinct need for detailed, site-specific plans to handle runoff volume, erosion and sediment discharges, habitat disruptions, and other factors affecting waterbodies for public review, while there is time for agencies and citizens to comment and affect decisions. The lack of available erosion control plans for public review indicates an uncooperative attitude by FERC and MVP to comply with NEPA requirements for public involvement and transparency.

See Attachment 1 for soil loss modeling results for these sections of the pipeline corridor.

CO84-9

III. Section 2.8.2 Permanent Slope Breakers

CO84-9

Slope breakers would be installed and maintained as specified in the FERC’s Plan.

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

December 22, 2016

Recommended spacing and materials for permanent slope breakers shows spacing in the table for slopes exceeding 30% at 100 feet.

Comment:

CO84-9
cont'd

Other sections in the DEIS show slope spacing at 50 feet. Revise the spacing to 50 feet, instead of 100 feet on slopes over 30%.

Waterbar/slope breakers have very low Sediment Removal Efficiency. On slopes over 30%, and due to lack of proper maintenance, sediment removal is not effective by slope breakers on steep slopes.

IV. Page 2-45:

CO84-10

Wet Open-Cut Construction Method

The wet open-cut construction method involves trench excavation, pipeline installation, and backfilling in a waterbody without controlling or diverting streamflow (i.e., the stream flows through the work area throughout the construction period). With the wet open-cut method, the trench is excavated across the stream using trackhoes or draglines working within the waterbody, on equipment bridges, and/or from the streambanks.

Page 5- 6:

In-stream pipeline construction across waterbodies could have both direct and indirect effects on aquatic species and their habitats, including increased sedimentation and turbidity, alteration or removal of aquatic habitat cover, stream bank erosion, impingement or entrainment of fish and other biota associated with the use of water pumps, downstream scouring, and the potential for fuel and chemical spills.

Page 4-176:

CO84-11

Section 4.6.2.1 Sedimentation and Turbidity

CO84-10

In October 2016, Mountain Valley filed data indicating that no waterbodies would be crossed using wet-open cuts. The final EIS has been updated accordingly.

CO84-11

See the response to comment FA11-15 regarding sedimentation and turbidity.

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

20161222-5311 FERC PDF (Unofficial) 12/22/2016 1:17:28 PM

December 22, 2016

CO84-11
cont'd

"Increased sedimentation and turbidity resulting from in-stream and adjacent construction activities would displace and impact fisheries and aquatic resources. Sedimentation could smother fish eggs and other benthic biota and alter stream bottom characteristics, such as converting sand, gravel, or rock substrate to silt or mud. These habitat alterations could reduce juvenile fish survival, spawning habitat, and benthic community diversity and health. Increased turbidity could also temporarily reduce dissolved oxygen levels in the water column and reduce respiratory functions in stream biota. Turbid conditions could also reduce the ability for biota to find food sources or avoid prey. The extent of impacts from sedimentation and turbidity would depend on sediment loads, stream flows, stream bank and stream bed composition, sediment particle size, and the duration of the disturbances.

To address concerns regarding the Elk, Gauley, and Greenbrier Rivers, Mountain Valley commissioned a quantitative modeling assessment to estimate the amount of turbidity and sediment that would occur as a result of the proposed wet open-cut crossings. *Sediment loads downstream of the crossings were estimated to increase by 49 to 81 percent, 15 to 26 percent, and 19 to 52 percent for the Elk River, Gauley River, and Greenbrier Rivers, respectively, over monthly baseline loads based on a crossing duration of 2 days.* Mountain Valley would attempt to minimize downstream sedimentation and turbidity, and subsequent impacts on aquatic biota in these waterbodies, by conducting the wet open-cut crossings during low-flow periods within the applicable time-of-year work windows for protection of fisheries of special concern, installing turbidity curtains that have buoyant booms and weighted bottoms to promote settling of sediment, and following Mountain Valley's Procedures and *Erosion and Sediment Control Plan* relative to construction on the streambanks. However, as we note in section 4.3.2.2, although sediment loads are related to downstream turbidity and sedimentation, they are different measurements with distinct values. *Mountain Valley's analysis does not quantify the duration, extent, or magnitude of estimated turbidity levels. Therefore, based on these estimates, conclusions cannot be drawn regarding the effects of sedimentation and turbidity on fisheries and aquatic resources due to the wet open-cut crossings.* We have included a recommendation in section 4.3.2.2 for additional quantitative modeling of turbidity and sedimentation associated with the proposed open-cut crossings for major waterbodies."

Comments on pages 2-45, page 5-6 and page 4-176:

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

December 22, 2016

It is noted from the discussion above that there would be significant increases in sediment loading to the Elk, Gauley and Greenbrier Rivers as calculated in the modeling assessment commissioned by MVP. However, the modeling assessments did “not quantify the duration, extent, or magnitude of estimated turbidity levels. Therefore, based on these estimates, conclusions cannot be drawn regarding the effects of sedimentation and turbidity on fisheries and aquatic resources due to the wet open-cut crossings.” The lack of conclusions shows a flagrant admission of negligence on the part of MVP in performing the modeling assessment. The modeling is not complete and an accurate assessment of sedimentation impacts on these rivers cannot be determined. Additional information is required for review of the Draft EIS.

CO84-11
cont'd

The effectiveness of wet open cut crossings is dependent on proper design and application. The probability of construction related difficulties is high. Reported difficulties include: (1) pump failure or insufficient capacity, (2) dam or flume failure, (3) poor dam seal, (4) poor containment of pumped ditch water, and (5) poor maintenance of erosion control measures. Larger water crossings require longer periods of instream activity and the control of larger volumes of streamflow and trench water. Both characteristics increase the risk of sediment being released into a watercourse. Construction problems result in large increases in downstream Total Suspended Solids impacting aquatic habitat and fish populations. These problems are not uncommon.

Additional assessment is required for the three river crossings. The modeling assessment is not complete and conclusions were not provided. This is another example where bases for the choice of crossing methods were not explained or justified by technical assessments or impact analyses.

CO84-12

In 2014, the Pennsylvania DEP filed a \$4.5 million civil penalty against EQT, the MVP developer, for environmental violations. Its complaint, filed with the Pennsylvania Environmental Hearing Board, stated that settlement negotiations broke down and the company failed to cooperate with its investigation.

The dispute was over an incident that began in April 2012 in north-central Pennsylvania’s Tioga County. Monitoring wells at a centralized impoundment serving

CO84-12

The comments regarding EQT’s environmental record are noted.

COMPANIES AND NGOS

CO84 – Sierra Club, VA Chapter

December 22, 2016

CO84-12
cont'd

EQT's Phoenix Pad S revealed elevated levels of chloride. A month later, DEP said it discovered a release of flowback water from a transfer line serving the impoundment and in a separate incident EQT reported that the impoundment was leaking, which affected a cold water fishery, a stream, an unnamed tributary, vegetation and groundwater.

Eventually, the impoundment was emptied, according to DEP, revealing between 75 and 100 holes in the liner. It remains unclear exactly how much waste leaked from the impoundment, but DEP said it was likely "significant."

"EQT fails to recognize the ongoing environmental harm from the significant amount of waste released by its leaking six million gallon impoundment," Acting DEP Secretary Dana Aunkst said of the agency's proposed fines. "This action was necessary because the company has not been cooperative during our investigation. The department does not tolerate this unacceptable attitude toward compliance and proper protection of Pennsylvania's environment."

Even after discovering two seeps near the impoundment during its investigation of the leaking transfer line and elevated chloride levels, DEP maintained that the company's lack of cooperation was evident in its alleged decision to continue dumping flowback water in the pit.³

EQT was issued 92 violations in West Virginia between 2009 and 2013, more than any other operator. According to the West Virginia Department of Environmental Protection's database, EQT's violations include water pollution, working without permits, and failure to properly construct pads to prevent leakage. Explosions on EQT sites have also killed or severely injured workers.⁴

CO84-13

V. Page 2-53:

Section 2.4.4.3 Post-Construction Monitoring

³ NGI's Shale Daily, October 7, 2014, <http://www.naturagasintel.com/articles/99962-eqt-fights-escalating-penalties-for-water-violations>.

⁴ NRDC issue paper, Fracking's Most Wanted: Lifting the Veil on Oil and Gas Company Spills and Violations, April 2015, page 9.

CO84-13

Inspections would continue until revegetation is deemed adequate. Inspections would not be arbitrarily ended after the second growing season if revegetation progress was not suitable.

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

December 22, 2016

Inspection shall be requested once there is uniform, perennial 70 percent vegetative coverage established. Temporary BMPs will be removed upon achieving vegetative stabilization. The 70 percent requirement refers to the total area vegetated and not a percent of the site. Disturbed areas not attaining a uniform, perennial 70 percent vegetative coverage shall be re-seeded as needed until uniform, perennial 70 percent vegetative coverage is established.

The Applicants would conduct follow-up inspections and monitor disturbed areas for at least the first and second growing seasons, including until revegetation thresholds are met and temporary erosion control devices are removed. The Applicants would submit quarterly monitoring reports for at least 2 years following construction. Restoration is deemed complete when the density and cover of non-nuisance vegetation are similar in density and cover to adjacent, undisturbed areas.

CO84-13
cont'd

The FERC staff would conduct post-construction restoration inspections to monitor for vegetation cover, invasive species, soil settling, soil compaction, excessively rocky soils, drainage problems, and erosion. Those inspections would continue until the problems are corrected and the right-of-way is stable and revegetated.⁵

Comments on page 2-53:

Establishment of 70 percent vegetative within 2 years is not a realistic projection for growing vegetation on severely steep slopes. The probability of growing vegetation on slopes exceeding 50% is low within a 2 year time period. This will leave many areas along the corridor with bare soils and rocky outcrops in places where the depth to rock is less than 12 inches. The denuded areas will cause increased stormwater runoff and erosion downslope of the problem areas that are rocky or not vegetated.

CO84-14

Soil compaction in the surface layer increases stormwater runoff, thus increasing soil losses. Soil compaction occurs when soil particles are pressed together, reducing pore space between them. Heavily compacted soils contain few large pores and have a reduced rate of both water infiltration and drainage from the compacted layer. Soil compaction changes pore space size, distribution, and soil strength. As the pore space is decreased within a soil, the bulk density is increased. Excessive soil

CO84-14

Soil compaction testing and mitigation is discussed in section 4.2 of the EIS.

⁵ Mountain Valley Pipeline Project Erosion and Sediment Control Plan, February 2016, page 19.

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

December 22, 2016

CO84-14
cont'd

compaction impedes root growth and therefore limits the amount of soil explored by roots. This, in turn, can decrease the plant's ability to take up nutrients and water. From the standpoint of erosion and soil loss on steep slopes, the adverse effect of soil compaction on water flow and storage is very serious.

There is no objective analysis of the impacts of these areas on downslope erosion that will occur. Until there is recognition of the long term impacts of grading on steep slopes, and a thorough analysis of those impacts, the Draft EIS is not adequate for review and should be rejected until a thorough analysis is performed.

VI. Page 4-78:

CO84-15

If disturbed by construction, wells completed in near-surface aquifers would typically quickly re-establish equilibrium, and turbidity levels would rapidly subside, such that impacts would be localized and temporary. Upon completion of construction, the Applicants would restore the ground surface as closely as practicable to original contours, and re-establish vegetation to facilitate restoration of pre-construction overland water flows and recharge patterns.

Dewatering of the pipeline trench may require pumping of groundwater in areas where there is a near-surface water table. *Construction activities may affect shallow aquifers and could cause minor temporary fluctuations in groundwater levels and/or increased turbidity. However, pipeline trenches and operational pipelines do not provide a barrier to groundwater flow where the pipeline intersects water-table aquifers, nor do they provide for a permanent reduction to infiltration of recharge waters where the pipeline lies above local and regional groundwater.* The Applicants would minimize impacts by implementation of the construction practices and operational erosion controls outlined in the FERC Plan (for the MVP), Equitrans' Plan (for the EEP), and both Applicants' Procedures and their project-specific *Erosion and Sediment Control Plans* for West Virginia and Virginia. Trench spoils would be used to backfill the trench, and the ground surface would be re-contoured to pre-construction conditions. The completed and maintained rights-of-way for the operational pipelines would not constitute an impermeable cover for infiltration of surface water.

CO84-16

Comments on page 4-178:

CO84-15

Impacts on groundwater resources are addressed in section 4.3 of the EIS.

CO84-16

Section 4.1 discusses karst terrain and section 4.3 of the EIS discusses groundwater, springs, and water supplies.

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

December 22, 2016

CO84-16
cont'd

The section above ignores the presence of karst terrain in numerous areas along the pipeline corridor. Without performing soil test borings to determine underground soil structure and water flow patterns, the assertion that *wells completed in near-surface aquifers would typically quickly re-establish equilibrium, and turbidity levels would rapidly subside, such that impacts would be localized and temporary* is a baseless claim. It is standard engineering practice to conduct soil borings under the supervision of a Licensed geologist at frequent intervals along construction corridors to determine if there are impacts on underground caverns and water flow network. None of this was done for analysis of construction impacts to underground terrain.

CO84-17

The statement *pipeline trenches and operational pipelines do not provide a barrier to groundwater flow* ignores trench backfill compaction requirements. Standard project specifications require soil density or degree of compaction that must be achieved is a minimum of 85% density for modified proctor testing. Compaction of soils from backfilling operations and construction traffic during the backfill operation creates an underground dam or dike that impedes the flow of underground aquifers. Flow patterns are disrupted during the trench excavation and the compaction of soils during backfill disrupts the flow regime permanently. Analysis of the impacts is substantially incomplete. Soil borings are required before project approval to determine the extent of impacts to underground aquifer flow patterns.

CO84-18

VII. Page 4-113:

We identified an additional location at which the pipeline route would parallel a waterbody within 15 feet. This waterbody crossing has been added to table 4.3.2-12. We also identified several locations (S-H36 [unnamed tributary to Jacks Creek] at MP 275.0; S-H24 [unnamed tributary to Little Jacks Creek] at MP 277.2; and AR-SU-200 along Lick Run) at which the proposed pipeline's permanent easement or an access road appears to travel within a waterbody's channel.

Therefore, we recommend that:

Prior to the end of the draft EIS comment period, Mountain Valley should file with the Secretary a complete list of any locations not already found acceptable by FERC staff where the pipeline route or access road parallels a waterbody within 15 feet or travels linearly within the waterbody channel. Mountain Valley should either re-align the

CO84-17

Soil compaction testing and mitigation is discussed in section 4.2 of the EIS. Groundwater flow patterns and mitigation are discussed in section 4.3.1 of the EIS and in appendix L.

CO84-18

Section 4.3 addresses impacts on waterbodies, including those which would be closely paralleled by the pipeline.

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

December 22, 2016

CO84-18
cont'd route/road to avoid locating the pipeline trench and/or access roads along or within a waterbody channel; or, provide site-specific justifications and proposed mitigation for locations Mountain Valley believes cannot be realigned.

Additionally, the FERC Procedures specify that ATWS should be located at least 50 feet from waterbodies and wetlands. Appendix D lists the 366 ATWS that Mountain Valley has proposed within 50 feet of a waterbody and wetland.

CO84-19 **Comments on page 4-113:**

The statement that *Prior to the end of the draft EIS comment period* indicates that information required for project review was omitted and incomplete. This is another instance of lack of adequate information submitted for the Draft EIS review. Four additional locations at which the pipeline route would parallel a waterbody within 15 feet were not included in the Draft EIS submittal for review. This is a continuing trend throughout the Draft EIS which indicates careless and negligent preparation of project material for submission. Until all information is submitted, the Draft EIS does not have adequate information for permit approval.

CO84-20 The fifteen foot riparian buffer, where the pipeline route or access road parallels a waterbody within 15 feet, is not an adequate buffer for stream protection. The total combined buffer width should be no less than 50 feet. Where excess nutrients, sediments, etc. are a concern, buffers more 100 feet wide or more are required to provide the most fish and wildlife habitat value. Design all buffers to meet or exceed the minimum requirements of local species of concern.

CO84-21 Existing wooded buffers should be protected when allowing minimal modifications to the extent that they do not diminish the ability of the buffer to perform its water quality functions. Effective vegetation must be established and woody buffer plantings are required, where no vegetation exists in a buffer, or the existing vegetation is insufficient to accomplish the three functions of retarding runoff, preventing erosion and filtering non-point pollution.

CO84-22 Scientific studies have noted that, on first, second and third-order streams (headwater streams and those less than approximately sixty feet wide), the

CO84-19 See the response to FA11-2 regarding the adequacy of the draft EIS. The courts have held that plans do not have to be finalized at the NEPA stage. Therefore, we include recommendations in the EIS that would require final data prior to construction.

CO84-20 The 15-foot riparian buffer is based on standard FERC policy, which was reviewed and updated by the FERC staff in May 2013, see the FERC’s Procedures section V.B.3.c.

CO84-21 Mountain Valley would maintain buffers as denoted in the FERC’s Procedures.

CO84-22 Waterbody riparian buffers, impacts, and mitigation are discussed in sections 4.3 and 4.4 of the EIS.

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

20161222-5311 FERC PDF (Unofficial) 12/22/2016 1:17:28 PM

December 22, 2016

CO84-22
cont'd

twenty-five feet closest to the stream provide functions critical to the stream health. The ability of this portion of the buffer to moderate water temperature, provide bank stabilization and supply organic debris for aquatic organisms makes it especially sensitive to potentially harmful activity such as excessive removal of vegetation and construction operations.⁶

CO84-23

VIII. Page 4-114:

The MVP would cross Craig Creek four times. Craig Creek is an NRI-listed waterbody than contains threatened and endangered species habitat.

Mountain Valley conducted an analysis to determine the amount of sedimentation that could occur in the Jefferson National Forest as a result of **instream** construction. The analysis used the Revised Universal Soil Loss Equation to yield annual estimates of erosion rates and sediment loads at the subwatershed level (i.e., HUC-12) based on soil type, climate, land use and management factors, and topography. The project crosses three HUC-12 watersheds in the Jefferson National Forest: Trout Creek–Craig Creek, Stony Creek, and Clendennin Creek–Bluestone Lake. The Trout Creek–Craig Creek subwatershed is part of the Upper James River HUC-8 watershed, and the Stony Creek and Clendennin Creek–Bluestone Lake subwatersheds are in the Middle New HUC-8 watershed. The results indicate that these three subwatersheds would exhibit *temporarily* increased sediment loads and yield due to project construction. Although sedimentation is *unavoidable* during instream construction, associated impacts would be controlled by the use of temporary and permanent sediment and erosion controls designed to avoid the movement of upstream sediments into downstream portions of waterbodies.

Page 4-179:

The FS expressed concern regarding the potential for increased sedimentation caused by erosion of exposed soil in the pipeline corridor to affect the priority HUC12 subwatersheds (Stony Creek and Upper Craig Creek) that the MVP would cross within the Jefferson National Forest. Mountain Valley commissioned a sedimentation

⁶ Riparian Buffers Modification & Mitigation Guidance manual, Virginia Department of Conservation and Recreation, Chesapeake Bay Local Assistance, September 2003 - Reprinted 2006, page iv.

CO84-23

Mountain Valley has modified its pipeline route to only cross Craig Creek at one location. Mountain Valley also submitted a revised sedimentation plan for the Jefferson National Forest. Updated information can be found in section 4.3 of the final EIS. Inspections would continue until revegetation is deemed adequate. Inspections would not be arbitrarily ended after the second growing season if revegetation progress was not suitable. See also the response to comment FA11-15 regarding sedimentation and turbidity.

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

20161222-5311 FERC PDF (Unofficial) 12/22/2016 1:17:28 PM

December 22, 2016

CO84-23
cont'd

model to assess the extent of sedimentation that could occur within these priority subwatersheds during construction. Details of the methods and results are included in the Biological Evaluation (BE) provided to the FS on June 24, 2016. *The results of the model indicate that construction would increase sedimentation*, when accounting for Mountain Valley erosion and sediment control methods, by 10 percent in the Stony Creek subwatershed and less than 3 percent in the Upper Craig Creek subwatershed. However, the model calculates annual increases in sedimentation and, therefore, makes the assumption that the construction corridor within the watersheds would exist as bare soil for the full year in which construction would occur. This would be a substantial overestimation of the duration that bare soil would be exposed during construction (section 2.4 details the construction chronology that would be used for the MVP). Consequently, *we would expect any actual increases in sedimentation within the priority subwatersheds to be substantially lower than the values provided by the sedimentation model.*

Comments on pages Page 4-114 and page 4-179:

Stated above, “the results indicate that these three subwatersheds would exhibit *temporarily* increased sediment loads and yield due to project construction. Although sedimentation is *unavoidable* during instream construction...”. The construction standards stated in this DEIS call for two years of re-vegetation monitoring and a minimum threshold of 70% re-vegetation for disturbed areas before the project is deemed to have adequate ground cover for construction areas. Two years is not temporary. Two years of continued sediment loads and soil loss into stream channels is significant. Exposed rocky soils and rock outcrops on steep slopes in the construction corridor will persist for years after construction, leading to increased runoff and increased sediment loss.

The statement that “sedimentation is *unavoidable* during instream construction” is an acknowledgement of increased sediment loading during instream construction. Erosion control methods for instream construction have low efficiency ratings primarily due to difficulties during construction.

As stated above, “the results of the model indicate that construction would increase sedimentation...” is another acknowledgment of increased sediment loading in stream crossings.

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

December 22, 2016

CO84-23
cont'd

The assertion that “we would expect any actual increases in sedimentation within the priority subwatersheds to be substantially lower than the values provided by the sedimentation model...” is false. On steep slopes with poor probability of re-vegetation, and with a minimum of two years for acceptance of revegetation, the use of annual parameters for soil loss is appropriate. Soil loss modeling can use different parameters to determine soil loss from different conditions. The analysis should be modeled to reflect those changing conditions over time. None of this analysis was submitted for review in the Draft EIS. The evaluation of impacts on waterbodies is not complete and a decision on permitting cannot be made without further information and evaluation.

CO84-24

IX. Page 3 - 3.0 SLOPE EVALUATIONS - Landslide Mitigation Plan (February 2016)

As mentioned in Section 1.0, the geologic and geotechnical characteristics of the region contribute to slope instability. Landslides along the project route will occur primarily in weathered bedrock or loose colluvial soil and within old landslide debris located on steep slopes. Exposed sedimentary rock formations can erode rapidly and create soils prone to landslides. Most landslides along the route are expected to be thin earth-flow type slabs rather than deep-seated circular failures. Rockfalls are also a potential hazard below bedrock outcroppings at or near the top of steep slopes associated with the cliff-forming formations such as sandstones, granite, and gneiss. These outcrops may be weathered by wind or rainfall and become loosened, leading to a violent cascade downhill, often triggering a larger landslide. Landslides also commonly recur in the same areas, thus evidence of previous events is important to the slope evaluations.

Page 4-46:

Section 4.1.2.4 Slopes and Landslide Potential

Several steep slopes along Mountain Valley's proposed pipeline route have experienced landslide activity in the past. Additionally, there are areas along the pipeline route that are characterized by both steep slopes and red shale bedrock, which as discussed in section 4.1.1.5 are prone to landslides. As discussed above,

CO84-24

Landslides and mitigation as described in Mountain Valley's revised *Landslide Mitigation Plan* are discussed in section 4.1 of the EIS. Factors that could potentially contribute to landslides are provided in appendix N.

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

20161222-5311 FERC PDF (Unofficial) 12/22/2016 1:17:28 PM

December 22, 2016

CO84-24
cont'd

construction and operation of Mountain Valley's proposed pipeline could result in unstable slopes including cut slope failures and fill slope failures. The potential for landslides or slope failure could be triggered by seismicity from the GCSZ or from intense and/or prolonged rainfall events. The USGS identified a clustering of landslides near the GCSZ suggesting that recent seismic shaking may have triggered these landslides, and that topographic effects on seismic shaking may have been amplified on mountain crests by a factor of 1.7 to 3.4 (Schultz and Southworth, 1989).

As discussed above, calculations by D.G. Honegger Consulting indicate that potential hazards exist for triggered slope displacement should the length of soil displacement over the pipeline exceed 1,580 feet for parallel slopes. One slope, at MPs 161.9 to 162.5, was identified to exceed the 1,580 foot length. In this area, Mountain Valley would increase the pipe wall thickness to that of Class 2 pipe in order to mitigate hazards to the pipeline from any potential triggered slope movement.

Comments on Slope Failure and Landslide Mitigation:

Several areas along the pipeline corridor are shown as prone to landslide or have recent landslides. See Table 2 in Landslide Mitigation plan.

Factors such as failure to properly handle surface and ground water; oversteepening of slopes by placing of fills and/or removing lateral support; failure to recognize geologic formations with low shear strengths; failure to recognize inherent weakness, such as linears, fractures, and joints, in otherwise competent bedrock; and improper blasting techniques can, and often do, lead to costly slope failures. These and other potential problems should be identified up front, during site design, to avoid huge remediation expenditures as well as environmental damage and threats to public safety.

Areas of high groundwater table and surface drainage paths contribute to the instability of slopes. Drainage paths or streams can over-steepen slopes from erosion. Human activities are a common contributor to landslide events. Large excavations located in mountainous areas related to rural development increase the number of and potential for landslides. Development of this type tends to create over-steepened slopes and drainage alteration that leads to the potential for many

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

December 22, 2016

CO84-24
cont'd

landslides. The removal of surface vegetation during land development can affect slope stability through increased infiltration of rainfall.

It is incumbent upon any pipeline developer to employ due diligence in regard to the potential for slope failure resulting from the construction of a proposed project and take whatever steps are necessary to minimize or prevent slope failures, especially where this would endanger public safety or result in environmental or property damage.

For projects where significant potential for dangerous slope failures exists, appropriate steps should be taken to ascertain the probable nature of the failure, such as a geotechnical study, and all appropriate measures should be taken to alleviate the potential dangers. For sites with greater potential risk, the actual construction should be done under the supervision of an independent geotechnical engineer or geologist. While these measures can significantly increase initial costs for a project, they are small in comparison to remediation costs, not to mention collateral costs incurred by others who may be affected by large-scale slope failures. Sites with great potential for public risk or property damage should be avoided, if at all possible.

Slope stability modeling analyses are required by engineering practices for slopes exceeding 2:1, or 50% gradient. It is recommended that slope stability analysis be performed for slopes exceeding 3:1, or 33% gradient. There are numerous areas of slopes over 30% along the pipeline corridor. A complete analysis cannot be done without the slope stability modeling results for steep slopes and areas with sensitive soils. The Draft EIS is not complete for public review and should be re-issued after complete submittal of information on slope stability.

CO84-25

X. STORMWATER MANAGEMENT REQUIREMENTS

In addition to the approved Erosion and Sedimentation Control Plans, MVP will be required to demonstrate compliance with Guidance Memo No. 15-2003 and MS-19 in regards to post construction stormwater management requirements. Calculations will be performed using DEQ standard excel spreadsheets discussed in Guidance Memo No. 16-2001 and submitted to the DEQ for their review and approval.

There are two components to stormwater management, quantity and quality. In order to achieve compliance of the quantity component, MVP will need to demonstrate a negligible increase (if any) in stormwater quantity.

CO84-25

Stormwater permitting, impacts, and mitigation are discussed in sections 1.5, 4.1, and 4.3 of the EIS.

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

December 22, 2016

CO84-25
cont'd | In order to achieve compliance of the quality component, MVP will need to demonstrate that the total phosphorous for post construction is less than 0.41 lbs/acre or equal to the pre-construction condition, whichever is greater.

CO84-26 | **WATER QUALITY**
The standard DEQ Spreadsheet (v3.0) was used to comply with water quality requirements of the VSMP. The DEQ Spreadsheet for the project is located in Appendix-A. Per the regulations, there are only three (3) potential land cover options (managed turf, forested/open space, and impervious).

SITE CONDITIONS (INPUT):

All post-vegetated areas will *not* be routinely maintained. Therefore all revegetated areas were considered "open space," since they would not be considered "managed turf". This resulted in 52.2-acres of "Open Space" and 2.2-acres of "Imperious" area for the access roads. For time consideration the project assumed a HSG of C throughout.

CONCLUSION:

Per the standard DEQ Spreadsheet (v3.0), "Total Phosphorus Load Reduction Not Required" and the "target TP reduction is exceeded by -12.78-lb/yr." *Therefore the project is compliant for TP and TN.*

CO84-27 | **WATER QUANTITY**
The standard DEQ Spreadsheet (v3.0) and the HydroCAD computer program were used to model and comply with water quantity requirements of the VSMP. The 1, 2, 10, and 100-year storms were analyzed. The entire project inside of Roanoke County (54.4-acres of total disturbance) was used as the watershed/project area. For time consideration the project assumed a HSG of C throughout.

SITE CONDITIONS

Pre-Development Conditions:

CO84-26 | Other than aboveground facilities and permanent access roads (which would be graveled, not impervious), the areas disturbed by Mountain Valley would be revegetated.

CO84-27 | Calculations noted.

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

December 22, 2016

CO84-27
cont'd To remain conservative in the design the entire disturbed area (54.4-acres) was assumed to be "Woods, in good condition", having a CN value of 70.

Post-Development Conditions: Because the disturbed area will not be routinely maintained (i.e. brush hogged every few years) "*Brush, brush/weed/grass mix, in good condition*" was used, having a CN value of 65. This resulted in 52.2-acres of "brush" and 2.2-acres of "Imperious" area, having a CN value of 98.

CO84-28 **Stormwater Management Comments:**

In the Draft Stormwater POST- Construction Report dated June 2016, the engineer used a runoff coefficient, r_v , of 0.04 assuming that all revegetated areas were considered "open space" within the pipeline corridor. However, as defined by the Virginia Department of Environmental Quality, forested/wooded areas, stream buffers, or areas designated as "conserved" open space should be designated on the plans as **undisturbed**; be **protected** during construction with some form of barrier or fencing; and be protected after construction with a protective covenant or easement, and signage where applicable.⁷ None of the criteria above applies to the pipeline corridor post-construction conditions.

CO84-28 Forested areas would be impacted by the proposed project as discussed in sections 4.4 and 4.5 of the EIS. Mountain Valley would maintain buffers as denoted in the FERC's Procedures. Areas subject to conservation easements and similar designations would be avoided where possible (see section 3.5 of the EIS) and/or subject to special crossing plans (see section 4.8.2 of the EIS).

CO84-29 **Managed Turf/Disturbed Soil:** Numerous studies have documented the impact of grading and construction on the compaction of soils as (OCSCD et al, 2001; Pitt et al, 2002; Schueler and Holland, 2000): Increase in bulk density, Decline in soil permeability, and Increases in the runoff coefficient. These areas of compacted soil, even when proposed to remain as pervious cover, e.g., lawn or managed open space, have a much greater hydrologic response to rainfall than undisturbed areas, e.g., forest, meadow, or pasture.

CO84-29 Soil compaction testing and mitigation is discussed in section 4.2 of the EIS. Soil permeability and water infiltration is discussed in sections 4.1 and 4.3 of the EIS.

CO84-30 The engineer's assumption of forested condition for the pipeline corridor is Not an accurate assessment of the post-construction site conditions. The runoff coefficient for disturbed soil is 0.22, which will increase the site runoff coefficient significantly. The calculations as submitted are incorrect and do not meet State and Federal standards for phosphorus reduction calculations.

CO84-30 We believe that the proposed erosion controls would reduce runoff.

⁷ DEQ, Plan Review Course Module 4. The Virginia Runoff Reduction Method | Page 6.

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

20161222-5311 FERC PDF (Unofficial) 12/22/2016 1:17:28 PM

December 22, 2016

CO84-30
cont'd

In the stormwater water quantity calculations for Roanoke County, the engineer assumed Post-Development Conditions of “*Brush, brush/weed/grass mix, in good condition*” having a *CN value of 65*, which is lower than the Pre-Developed curve number for “Woods, in good condition”, having a CN value of 70. Again, the engineer ignored the impact of grading and construction on the compaction of soils. It is not possible for the post-developed condition to be lower than the pre-developed curve number without using low impact methods or environmental site design considerations for project planning and construction. The correct curve number for use in calculating the CN value is 81 for herbaceous areas with grass, weeds and low growing bushes in fair condition. The calculations as submitted are incorrect and do not meet state and Federal standards for runoff rate calculations.

CO84-31

Conclusions:

The DEIS lacks critical environmental information – NEPA requires agencies to take a “hard look” at the environmental impacts of a proposed project and to make that information available to the public. In this case, FERC released the DEIS despite the absence of information necessary to assess the impacts of the project on a wide range of resources, including streams, steep slopes, landslide potential, stormwater management and numerous other issues. These are just a few of the most glaring deficiencies in the DEIS that FERC must rectify in order to comply with NEPA. FERC stated that MVP can submit the missing information before construction begins. This prevents meaningful public participation in the decision making process that is required by NEPA. A thorough analysis subject to public scrutiny is particularly necessary here because a pipeline of this size has never been built through the type of steep terrain and karst geology that MVP would cross. Past experience with adverse effects from construction of much smaller pipelines in the region—such as the Celanese and Stonewall Gathering lines—shows that the public cannot rely on assurances that such impacts will be successfully mitigated without adequate information to back up those assurances.

CO84-31

See the response to FA11-2 regarding the adequacy of the draft EIS and regarding pending data. See the response to LA1-4 regarding pipelines built through mountainous terrain.

COMPANIES AND NGOs

CO84 – Sierra Club, VA Chapter

20161222-5311 FERC PDF (Unofficial) 12/22/2016 1:17:28 PM

December 22, 2016

CO84-31
cont'd

Respectfully,



Kate Addleson, Director
Virginia Chapter Sierra Club

William Penniman, Conservation Chair



Kirk A. Bowers, PE
Pipelines Campaign Coordinator



CITIZENS PETITION TO the U.S. Forest Service and Elected Officials

The Mountain Valley Pipeline (MVP) will:

- 1) irreparably damage the fragile mountain ecosystems on which all residents of this area rely, with benefits accruing only to a private corporation.
- 2) irreparably damage and potentially destroy the groundwater and surface-water resources on which our families and our livelihoods depend.
- 3) cross and damage more than 2000 streams with destructive construction practices, in direct violation of existing environmental protection standards.
- 4) spread invasive plants across public and private lands, thereby creating expensive land management problems.
- 5) degrade the value of our private properties without just compensation, by damaging the very natural amenities that draw people to our region.
- 6) threaten the safety and well-being of all residents of the region.

The Federal Energy Regulatory Commission (FERC) has:

- 1) invited citizens to participate in the decision-making process for the MVP permit application under their consideration, but has neglected to keep citizens fully informed and ignored critical concerns expressed by citizens and qualified professionals.
- 2) expedited every step of the permit approval process despite knowing that MVP's application submissions contain inaccurate, misleading, and woefully incomplete information.
- 3) ignored the results of two evaluations specifically requested by the U.S. Forest Service (regarding cultural attachment of residents to our land, and the potential for damaging erosion on steep slopes).
- 4) ignored expert studies of impacts on property values and the threat to karst terrain and water supplies, which had to be citizen-funded because FERC considered these issues to be "insignificant."
- 5) declared that the MVP would cause "limited adverse environmental impacts" to the region that we call home, *even before all required surveys and analyses have been completed by MVP.*

The Proposed Amendments to the Management Plan for the Jefferson National Forest will:

- 1) degrade the ecosystem integrity, sustainability, and biodiversity of the Jefferson National Forest, and thereby diminish the multitude of environmental services (particularly intact forest and associated erosion protection, clean water, clean air, and economically critical outdoor recreation opportunities) that the National Forest currently provides.
- 2) create a 500-ft industrialized utility corridor that will facilitate future pipeline projects, thereby even further damaging the integrity of forests and watersheds that support our communities.
- 3) grant waivers from established National Forest standards, which will cause soil and water resource degradation.
- 4) allow logging of old growth forest habitat currently maintained in a special forest management prescription.
- 5) authorize a destructive crossing of the historic Appalachian Scenic Trail, permanently changing the scenic quality of the Trail and our region.

THEREFORE: We the Citizens call on the U.S. Forest Service and our Elected Officials to act decisively to:

Protect our Property Rights, our Constitutional Rights, our Quality of Life, and especially our water resources.

Demand that the Federal Energy Regulatory Commission (FERC) withdraw the current Draft Environmental Impact Statement for the Mountain Valley Pipeline (MVP) because it is inaccurate, misleading, and woefully incomplete.

Oppose all actions by the FERC to fast-track the MVP project without genuine, scientifically credible evaluation of the potentially devastating environmental effects of the project.

Demand and Convene open meetings in counties impacted by the MVP, to allow the public to express their concerns directly to the Jefferson National Forest Supervisor, the FERC, and our elected officials.

Oppose the request to cross the Jefferson National Forest with the MVP.

Reject proposed amendments to the Jefferson National Forest Management Plan, which offer special treatment for the MVP and similar corporate pipeline projects.

This petition was initiated by Preserve Craig, Inc. (Craig County, Virginia) on October 8, 2016, in solidarity with concerned citizens everywhere who want our government to truly protect the rights, interests, and safety of our families. www.PreserveCraig.org

CO85-1

The EIS concludes that projects would not have significant adverse impacts on mountain ecosystems (except for the clearing of forest). The Commission would decide on the benefits of the projects in their Order.

Water resources are discussed in section 4.3 of the EIS. Invasive plants are discussed in section 4.4 of the EIS. See the response to comment IND12-1 regarding property values. Safety is discussed in section 4.12 of the EIS.

The FERC's public outreach process is summarized in section 1.4 of the EIS. While the public may comment on environmental issues, the Commissioners are the decision makers. The FERC staff addressed data gaps in Mountain Valley's applications and supplements in multiple EIRs. The draft EIS was not rushed into production, and was produced about two years after staff began its environmental review of the project.

Cultural attachment is discussed in section 4.10 of the final EIS. Erosion control on steep slopes is discussed in sections 2 and 4.1. Section 4.9 of the EIS discusses expert studies of pipeline impacts on property values. Karst terrain and impacts on groundwater are discussed in sections 4.1 and 4.3. Environmental surveys have been completed for about 90 percent of the MVP pipeline route, providing adequate data to support our conclusions.

Forest plan amendments considered by the FS are discussed in section 4.8 of the EIS.

COMPANIES AND NGOs

CO85 - Preserve Craig

F.S.E.

CO
85-1
cont'd

We Hereby Petition the U.S. Forest Service and Our Elected Officials to:

- **Protect Our Property Rights, Constitutional Rights, Quality of Life** (including water resources).
- **Demand** that the Federal Energy Regulatory Commission (FERC) withdraw the current Draft Environmental Impact Statement (DEIS) for the Mountain Valley Pipeline (MVP) because it is inaccurate, misleading, and woefully incomplete.
- **Oppose** all actions by the FERC to fast-track the MVP project without genuine, scientifically credible evaluation of the potentially devastating environmental effects of the project.
- **Demand and Convene** open meetings in counties impacted by the MVP, to allow the public to express their concerns directly to the Jefferson National Forest Supervisor, the FERC, and our elected officials.
- **Oppose** the request to cross the Jefferson National Forest with the MVP.
- **Reject** proposed amendments to the Jefferson National Forest Management Plan, which offer special treatment for MVP and similar corporate pipeline projects.

(B)

Signature	County, State	Email	Phone
<i>Barry Cross</i>	Craig, Va	<i>barrycross@prods.net</i>	540-569-3341
<i>Barbara E. Davis</i>	Craig, Va		540-864-6196
<i>James Galy</i>	Craig, Va		540-564-5982
<i>Jessie Jess</i>	Craig, VA	<i>jesspen@hotmail.com</i>	580-6332
<i>Carly M</i>	Craig, Va	<i>carlym@gmail.com</i>	540-520-0071
<i>Carly M</i>	Craig, VA		
<i>Brendy Appal</i>	Roanoke, VA	<i>bcaetyappal@gmail.com</i>	802-745-7403
<i>Tom Hosta</i>	Roanoke VA		
<i>Heidi Brooks</i>	" "	<i>heidi_brooks@comcast.net</i>	
<i>John Martin</i>	Roanoke VA		
<i>John Kern</i>	Roanoke VA		
<i>Paul W. W. W.</i>	Franklin, VA	<i>kwent@survival.com</i>	540-334-2008
<i>Cathie Scale</i>	Roanoke, VA	<i>roanoke.river.message@gmail.com</i>	540-797-9882

This petition was initiated by Preserve Craig, Inc. (Craig County, Virginia) on October 8, 2016, in solidarity with concerned citizens everywhere who want our government to truly protect the rights, interests, and safety of our families. www.PreserveCraig.org

COMPANIES AND NGOs

CO86 – Oil Change International

20161222-5333 FERC PDF (Unofficial) 12/22/2016 1:35:38 PM



CO86-1

December 22, 2016

Kimberly D. Bose,
Secretary Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

Re: Comments on Draft Environmental Impact Statement - Docket Nos. CP16-10-000 and CP16-13-000

Dear Federal Energy Regulatory Commission,

Attached are comments regarding the Draft Environmental Impact Statement for the Mountain Valley Project and the associated Equitrans Expansion Project issued September 2016. These projects are FERC Docket Nos. CP16-10-000 and CP16-13-000, respectively.

These comments address the assessment of greenhouse gas (GHGs) emissions and climate change in the Draft Environmental Impact Statement (DEIS). The DEIS provides an estimate of GHGs that is wholly inadequate. The methodology used is opaque and assumptions about the role of the pipeline's potential emissions are vague and unsubstantiated.

The comments below outline a credible methodology for estimating emissions from the project and assessing the impact of those emissions on U.S. and global climate goals. Our assessment finds the following:

- Greenhouse gas emissions caused by the Mountain Valley Pipeline will amount to over 85 million metric tons of carbon dioxide equivalent annually. This is equivalent to emissions from 25 average U.S. coal plants or around 18 million passenger vehicles.
- Methane leakage reduction efforts may at best reduce these emissions by 23 percent.
- Due to constrained takeaway capacity from the Appalachian Basin, the Mountain Valley Pipeline will enable additional gas production at a level commensurate with carrying capacity.
- As renewable energy technologies are becoming cost competitive with natural gas-fired power, and because addressing climate change will require a phase out of all fossil fuel combustion by mid-century or soon thereafter, additional gas supply should be considered as in competition with clean energy rather than coal-fired generation.

We ask that you make these comments part of the record of the proceeding and consider them as part of your decision-making process in determining whether to issue a Certificate of Public Convenience and Necessity for the project.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "L. Stockman", written over a horizontal line.

Lorne Stockman

Senior Research Analyst
Oil Change International
714 G Street SE, Suite 202
Washington, DC 20003

CO86-1

Climate change, GHGs, and cumulative impacts are discussed in sections 4.11 and 4.13 of the EIS. Fugitive methane leaks are discussed in section 4.11 of the EIS. Induced natural gas production is discussed in section 1.3 of the EIS. Renewable energy sources and energy efficiency are discussed in section 3 of the EIS.

COMPANIES AND NGOs

CO87 – Friends of Buckingham, VA

20161222-5342 FERC PDF (Unofficial) 12/22/2016 2:17:50 PM

CO87-1

Heidi D Berthoud, Buckingham, VA.
December 22, 2016

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First St. NE, Room 1A
Washington, DC 20426

RE: Draft Environmental Impact Statement, Docket No. CP16-10-000

Dear Secretary Bose,

Many groups have filed comments related to concerns about the extensive deficiencies in the Draft Environmental Impact Statement (DEIS) for the Mountain Valley Pipeline and the insufficient public involvement in the related public meetings. The findings in the report are not substantiated by information provided in the report or in ever changing supplemental filings. There is agreement that the DEIS must be rewritten, not finalized.

CO87-2

There is also widespread concern about the way that the need for this project is being evaluated. Existing procedures encourage developers to lock in, for many years, earnings that are extraordinarily high in today's economic environment. They support developers in declaring that their own undocumented anticipated use of natural gas makes building infrastructure necessary, without any consideration of the total capacity available and proposed. Further, analysis of alternatives is superficial.

CO87-3

These are significant problems, more than sufficient to make it inappropriate to complete and release a Final Environmental Impact Statement. Direct the DEIS to be completely redone so that it appropriately addresses the issues before any further action is taken.

Sincerely,

Friends of Buckingham, VA
Chad Oba
Chair Friends of Buckingham
Heidi Dhivya Berthoud
Secretary Friends of Buckingham

info@friendsofbuckinghamva.org
Friends of Buckingham (FoB)
PO Box 61 Buckingham VA 23921

CO87-1

The draft EIS does not need to be redone; it was sufficient to meet the standards issued by the CEQ in implementing regulations for compliance with NEPA. We will produce a final EIS that addresses comments on the draft EIS. Our public involvement process was also sufficient, see section 1.4 of the EIS.

CO87-2

The Commission would consider need in its Project Order (see section 1.2.3).

CO87-3

See the response to FA11-2 regarding the adequacy of the draft EIS.

COMPANIES AND NGOs

CO88 – Wild Virginia

20161222-5340 FERC PDF (Unofficial) 12/22/2016 1:41:42 PM



December 22, 2016

P.O. Box 1065
Charlottesville, VA
22902
(434) 971-1553
www.wildvirginia.org

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426
Submitted Via FERC eFiling Feature on the FERC Web Site

CO88-1

Re: Comments on DEIS for the Mountain Valley Pipeline Proposal, FERC Docket No. CP16-10-000, In Response to Notice of Availability of Draft Environmental Impact State for the Mountain Valley Pipeline, September 16, 2016

Board of Directors:

- Bette Dzamba
- Howard Evergreen
- Jennifer Lewis
- Laurie Miller
- Ernie Reed
- David Sellers
- Deirdre Skogen
- Elizabeth Williams

Dear Ms. Bose:

I am transmitting the comments included in this document, on behalf of Wild Virginia, Heartwood, and Ernest Q. Reed, Jr. In addition to this document, I am submitting the following documents separately as attachments to these comments:

- A letter from Wild Virginia to BLM and the Forest Service, dated November 18, 2016 (document labeled "USFS&BLMLetter.11.18.16")
- A Report Entitled "Impacts of the MVP on Headwater Streams" by David Sligh (document labeled "Impacts of the MVP on Headwater Streams.pdf")
- Four documents, labeled as follows:
 - K Spring by AT.pdf
 - L Pipeline, springs, roads, early 2016.pdf
 - M Springs on both sides of the pipeline 5-16.pdf
 - P Forest Service spring, hemlocks, chestnuts 10-16.pdf

Thank you for accepting these comments.

Sincerely,

_____/s/_____
Ernest Q. Reed, Jr.

CO88-1

Water resources, including streams and springs, are discussed in section 4.3 of the EIS.

Protecting Your Favorite Wild Places
Printed on 100% Post Consumer Recycled Paper

COMPANIES AND NGOs

CO89 – Blue Ridge Environmental Defense League

20161222-5404 FERC PDF (Unofficial) 12/22/2016 2:43:11 PM

CO89-1

Blue Ridge Environmental Defense League

www.BREDL.org PO Box 88 Glendale Springs, North Carolina 28629 BREDL@skybest.com (336) 982-2691

December 22, 2016

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

**RE: Draft Environmental Impact Statement, OEP/DG2E/Gas 3, Mountain Valley Pipeline, LLC,
Docket No. CP16-10-000**

Dear Secretary Bose:

On behalf of the Blue Ridge Environmental Defense League and its chapters Preserve Floyd, Preserve Roanoke, Preserve Franklin and Piedmont Residents in Defense of the Environment (PRIDE) and members throughout Virginia, I write to address the draft environmental impact statement (DEIS) for the proposed Mountain Valley Pipeline project, Docket No. CP16-10-000.

Overview

On October 23, 2015, Mountain Valley Pipeline, LLC (“MVP”) filed an application under section 7(c) of the Natural Gas Act, requesting authorization to construct, own, and operate a new natural gas pipeline system (“Project”), including three compressor stations and appurtenances totaling 171,600 horsepower, four new meter and regulation stations and interconnections, 2 new taps, 5 pig launchers and receivers; and 36 mainline block valves. If constructed, Mountain Valley Pipeline would have approximately 301 miles of 42-inch-diameter natural gas pipeline beginning in Wetzel County, West Virginia and ending in Pittsylvania County, Virginia. Project owner Mountain Valley Pipeline, LLC is a joint venture of EQT Midstream Partners, LP; NextEra US Gas Assets, LLC; Con Edison Gas Midstream, LLC; WGL Midstream; and RGC Midstream, LLC. Mountain Valley Pipeline has also requested a certificate of public convenience and necessity authorizing Mountain Valley to construct, own, and operate the Mountain Valley Pipeline Project; (2) a blanket certificate of public convenience and necessity

Esse quam videri

CO89-1

The EIS concludes that the projects would not have significant environmental impacts on most resources (except for the clearing of forest). The FERC does not regulate the exploration or production of natural gas; that is the purview of individual states (see section 1.3 of the EIS).

COMPANIES AND NGOs

CO89 – Blue Ridge Environmental Defense League

20161222-5404 FERC PDF (Unofficial) 12/22/2016 2:43:11 PM

CO89-1
cont'd

authorizing Mountain Valley to provide open-access interstate transportation services, with pre-granted abandonment approval; (3) a blanket certificate of public convenience and necessity under Part 157, Subpart F of the Commission's regulations for Mountain Valley to construct, operate, acquire, and abandon certain eligible facilities, and services related thereto; (4) approval for its proposed interim period rates and initial recourse rates for transportation service and for its pro forma tariff; and (5) such other authorizations or waivers as may be deemed necessary to allow for the construction to commence as proposed.

The pipeline project outlined and addressed in the draft EIS for the Mountain Valley Pipeline, DEIS-D0272, represent a massive assault on the environment and the communities along the proposed routes. Moreover, the impacts of extraction, transport and combustion of natural gas via the process of hydraulic fracturing have to be taken into consideration. The EPA's own estimates up to 140 billion gallons of water are used annually to fracture 35,000 wells in the United States. A large variety of chemicals are used in fracking fluids, and many of these fracking fluid chemicals are known to be toxic to humans, and several are known to cause cancer (e.g. formaldehyde, ethylene glycol, methanol, benzene). According to studies conducted by the EPA, the oil and gas industry, and interviews with regulators, anywhere from 20 to 85% of fracking fluids remain in the formation, a dangerous source of groundwater contamination for many generations to come in the source areas for the natural gas that would be transmitted via the Mountain Valley Pipeline from West Virginia to Virginia.¹

Under the law, these national and global impacts must be accounted for by the Federal Energy Regulatory Commission; i.e., to "recognize the worldwide ... environmental problems and ... maximize international cooperation."²

¹ https://www.earthworksaction.org/issues/detail/hydraulic_fracturing_101#.Vi1QOn6rQdV

² National Environmental Policy Act, §102(2)

Esse quam videri

COMPANIES AND NGOs

CO89 – Blue Ridge Environmental Defense League

CO89-1
cont'd

Once the impacts are weighed, we believe the no action alternative—that is, the denial of the certificate of convenience and public necessity—will be the agency’s only recourse.

Background

The proposal under consideration includes multiple facilities which would be capable of delivering about 2 billion cubic feet of natural gas per day. The DEIS encompasses many miles of pipelines, three compressor stations, and numerous valves, pig sites and other appurtenances in two states. The environmental impacts of such a large number of facilities would be devastating to the environment and public health. Natural gas extracted by hydraulic fracturing, or fracking, is transported in trucks, compressed and delivered by pipelines. At each stage in this process, pollution is created.

CO89-2

COMMENTS

Protection of Water Resources

Waterway Mitigation Concerns

The Williams-Transcontinental (Transco) pipeline traverses over 10,000 miles with 42 inch diameter along the southeast, mid-Atlantic and northeast of the United States. A pipeline incident was documented by a local in Pittsylvania County, near where the proposed MVP would terminate at compressor station 165. In September 2015, SW Virginia had a week of heavy rain and flooding. Creeks swelled and overflowed with the massive downpour and water washed away entire trees and large limbs. Along a small creek near the Transco station in Pittsylvania, a landowner found that the pipe was completely exposed and “catching” limbs and brush from the flooding. Williams Transco’s solution to mitigate the problem was to lay a concrete block mesh across the entire creek in the easement area (approximately 50 feet wide). Below are images of their “fix.”

Esse quam videri

CO89-2

Pipeline safety is discussed in section 4.12 of the EIS.

COMPANIES AND NGOs

CO89 – Blue Ridge Environmental Defense League

20161222-5404 FERC PDF (Unofficial) 12/22/2016 2:43:11 PM

CO89-2
cont'd



The concrete mesh – photo taken May 2016



The water has an oily sheen – is there a leak? Photo taken May 2016

Esse quam videri

COMPANIES AND NGOs

CO89 – Blue Ridge Environmental Defense League

20161222-5404 FERC PDF (Unofficial) 12/22/2016 2:43:11 PM

CO89-2
cont'd



The concrete mesh spans the easement ROW covering the creek with concrete.

Because of the lack of erosion and sediment control through waterways, the creek bottom was washed away, exposing the pipe and water hammered at it, as the pipe stopped branches and limbs from flowing. What damage was caused to the pipe with the amount of water and other external forces? If this is standard mitigation practices for waterways, what will become of the hundreds upon hundreds of creeks and waterways the proposed MVP intends to cross? This is not mitigation. This is placing an unnatural, concrete burden on a much needed natural resource in communities – WATER.

CO89-3

Franklin County

Comments on behalf of BREDL Chapter Preserve Franklin

Smith Mountain Lake and Franklin County Water Quality Concerns

According to MVP's Resource Report 2, 128 different waterbodies in Franklin County are listed to be crossed by the proposed pipeline. This includes:

- 3 tributaries just east of the Blue Ridge Parkway forming the headwaters of the South Fork of the Blackwater River
- 7 tributaries forming the headwaters of the North Fork of the Blackwater River

Esse quam videri

CO89-3

Water resources are discussed in section 4.3 of the EIS. The FERC Plan, which has been adopted by Mountain Valley, contains a series of erosion and sedimentation control measures as discussed in sections 2.4, 4.2, and 4.3 of the EIS. Sedimentation effects and mitigation measures, including consideration of steep slopes, aquatic habitats, long-term maintenance, and routing, are discussed throughout the EIS. Smith Mountain and Leesville Lakes are discussed in sections 4.9 and 4.13.1 of the EIS and see the response to CO14-1. Potential impacts to groundwater are discussed in section 4.3.1 of the EIS and based on the information presented there, we conclude that the MVP would be unlikely to affect groundwater in a manner that would impact Smith Mountain and Leesville Lakes and their pumpback operations.

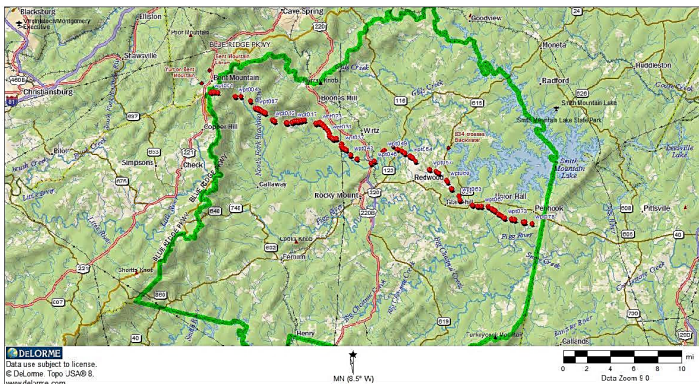
COMPANIES AND NGOs

CO89 – Blue Ridge Environmental Defense League

20161222-5404 FERC PDF (Unofficial) 12/22/2016 2:43:11 PM

CO89-3
cont'd

- 8 tributaries whose water flows into Little Creek, then into Mill Creek, then into the Blackwater River
- over 20 tributaries of Mill Creek in an area where the pipeline follows Mill Creek for about 4 and a quarter miles
- The Blackwater River and its tributaries, crossed at least 12 times east of U.S. 220, it's last crossing west of U.S. 220 being $\frac{3}{4}$ of a mile upstream from the Town of Rocky Mount's water supply.
- And as referenced below, 22 tributaries emptying into Smith Mountain Lake
- Plus, an unknown quantity of unmapped and unnamed tributaries and springs.



● = Mountain Valley Pipeline stream crossing in Franklin County, VA. This map shows 78 such crossings.

Source: Roanoke County, VA's online map of the Mountain Valley pipeline at

<http://gisweb.roanokecountyva.gov/pipeline/> USGS National Map

As noted above, concerns surrounding the number of water crossings by the proposed Mountain Valley Pipeline pose a threat to Smith Mountain Lake as well as the various creeks, rivers and watershed areas.

Esse quam videri

COMPANIES AND NGOs

CO89 – Blue Ridge Environmental Defense League

20161222-5404 FERC PDF (Unofficial) 12/22/2016 2:43:11 PM

CO89-3
cont'd

The Smith Mountain Lake Association has filed multiple comments to FERC on the proposed Mountain Valley Pipeline project, including most recently on the DEIS. Key concerns from their filings are highlighted below:

Background Information

The Smith Mountain Lakes Project (SMLP) is a two-reservoir pumped storage hydroelectric generation project facility near Roanoke, Virginia, completed in the mid-1960s. SMLP is operated by Appalachian Power Company (APCO) which is owned by American Electric Power (AEP). SMLP has 600 miles of shoreline and 25,000 surface acres of water. The project is also used for recreation and a source of potable water for two of the surrounding four counties comprising Bedford, Campbell, Franklin, and Pittsylvania. It is a major tourism attraction for the region and an important source of tax revenue for the surrounding counties.

The SMLP has a larger upper reservoir -- Smith Mountain Lake (SML) -- and a smaller lower reservoir-- Leesville Lake (LVL). Water stored in SML first passes through turbine-generators in the powerhouse to produce electricity and is discharged into LVL. Much of the water is retained in (LVL) and pumped back into the SML for re-use. A portion of the water goes through the turbine-generators at the Leesville powerhouse to generate additional electricity and to meet the minimum discharge requirements of the project's operating license. Three significant rivers flow into the project. The Roanoke and Blackwater Rivers flow into the SML project above the SML Dam and the Pigg River flows into LVL above the LVL Dam. Via the pumpback feature of the project, some of the water from the Pigg River and LVL also co-mingles with the SML waters.

The MVP as planned will pass the SMLP to the south, mainly in Franklin County, and then into Pittsylvania County where it crosses under the Pigg River and continues to

Esse quam videri

COMPANIES AND NGOs

CO89 – Blue Ridge Environmental Defense League

20161222-5404 FERC PDF (Unofficial) 12/22/2016 2:43:11 PM

CO89-3
cont'd

terminate at the existing Transcontinental Gas Pipeline Company LLC's existing Zone 5 Compressor Station 165 in Pittsylvania County, Virginia. The pipeline as planned will pass four miles north of the town of Rocky Mount, Virginia, the Franklin County seat.

It should be noted that water released from the LVL dam flows into the downstream Virginia Department Game and Inland Fisheries Hatchery and past the Dominion Power Plant then into Lake Gaston and eventually the Albemarle-Pamlico Sounds in North Carolina.

Continued comments:

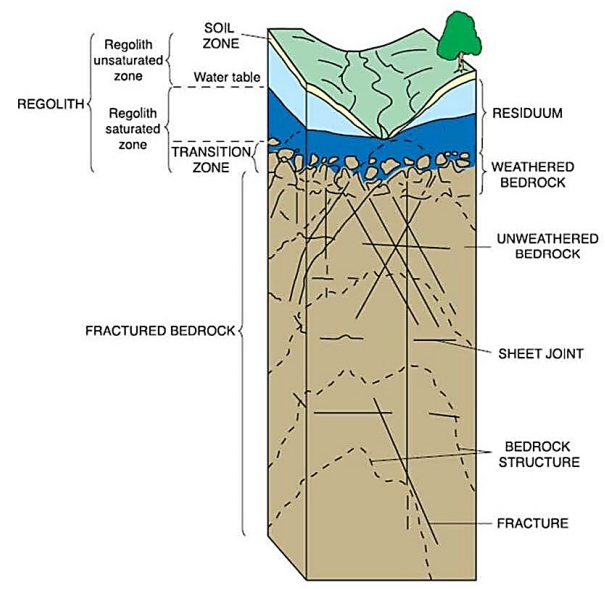
The SMLP is fed by the Roanoke, Blackwater and Pigg Rivers, representing drainage from Montgomery, Salem, Roanoke, Franklin and Pittsylvania counties, together with some drainage from Bedford County. The drainage area for the SML/Leesville project below the Niagara dam on the Roanoke River below Roanoke is primarily from Franklin and Pittsylvania counties, about 965 sq. mi or roughly 65% of the total drainage area (Reference 1). As shown in Figure 1 (below), reproduced from Reference 2, groundwater in this region can be roughly divided into two components: (1) the deep groundwater in the fractured bedrock and (2) the nearsurface (or surficial) groundwater lying above the bedrock in the regolith saturated zone.

Reference 2 states "Because of the relative high porosity of the regolith, most recharge is stored in this unit and is released slowly to the underlying bedrock fractures. Because fractures and dissolution openings in the bedrock are conduits for ground-water flow, well yields are greatest where wells intersect fractures or dissolution opening that are large, numerous, or both."

Esse quam videri

CO89-3
cont'd

Figure 1: Groundwater Components of the Regolith and Bedrock



This near-surface groundwater constitutes a major portion of the water flow into the SMLP, primarily through its flow into streams and rivers and through the lake shores.

This near-surface groundwater flow also shows a distinct seasonal variability and a strong dependence on winter groundwater recharge. Reference 3 indicates this groundwater flow (also referred to as base flow) constitutes about 60-70% of the total annual flow into the project. The results of our analyses in References 4 and 5 are consistent with these findings.

The filing continues stating water table concerns:

Esse quam videri

COMPANIES AND NGOS

CO89 – Blue Ridge Environmental Defense League

20161222-5404 FERC PDF (Unofficial) 12/22/2016 2:43:11 PM

CO89-3
cont'd

In the SML/Leesville drainage areas in Franklin and Pittsylvania counties, the median depth of the bedrock is about 58 ft. below the land surface, with the water table median depth about 12 to 17 ft. above the bedrock (Reference 6). However, Reference 6 also states that minimum depths to the bedrock can be within a meter or so from the land surface. We believe it is reasonable to assume these regions of shallow bedrock have shallow water tables in the saturated regolith that are also nearer the surface.

Under these conditions and this assumption, anytime the MVP pipeline cuts into the bedrock it will cut into the water table and potentially disrupt the flow of near-surface groundwater. From Appendix 6B of the MVP FERC filing, locations in Franklin County where the bedrock can potentially lie within the depth of the pipeline trench occur 43 times, for a total distance of 15.9 miles, about 44% of the total pipeline 36 mile path through Franklin County.

Smith Mountain Lake Association (SMLA) Comments on the DEIS:

An estimate of the drainage area potentially affected by the MVP can be made using the USGS (US Geological Survey) streamflow gages closest to where the MVP cuts the rivers and streams of interest. These gages are the Lafayette gage for the Roanoke River in Montgomery County, the Rocky Mount gage for the Blackwater River in Franklin County and the Sandy Level gage for the Pigg River in Pittsylvania County. These gages represent drainage areas of 254, 115 and 351 square miles, respectively, totaling 720 square miles or 50 percent of the total SML/Leesville drainage area. Since surficial groundwater flow comprises ~ 50 percent or more of the total stream flow on the average at these USGS gage sites, a significant portion of the groundwater flow into SML and Leesville Lakes may be “upstream” of the MVP route though Franklin and Pittsylvania Counties and consequently compromised by the MVP pipeline.

Esse quam videri

COMPANIES AND NGOs

CO89 – Blue Ridge Environmental Defense League

20161222-5404 FERC PDF (Unofficial) 12/22/2016 2:43:11 PM

CO89-3
cont'd

...The potential economic losses associated with groundwater loss to the SML-Leesville pumpback project for electrical generation and county benefits can be as much as \$1.6 to \$7.2 million annually and possibly more. This potential economic loss, together with the fact that it may be impossible to remedy changes in groundwater flow once they occur, is considered a major deficiency that the FERC Draft EIS has not seriously addressed.

CO89-4

Pigg River Dam Removal in Franklin County

A recent project to remove an old dam along the Pigg River in Franklin County³ has raised alarming concerns regarding erosion and sedimentation as well as the health of the water for the endangered Roanoke Logperch (see further comments below concerning Roanoke Logperch). Questions arise as to MVP's mitigation practices with regards to their plans to cross through so many creeks and rivers through Franklin County. Friends of the Rivers of Virginia have coordinated and been responsible for the Pigg River Restoration Project, as well as seeking approval from Virginia Department of Environmental Quality (VDEQ). Bill Tanger, project manager, posted disturbing photos after heavy rains and flooding in late September, 2016.

“Monday, October 3, 2016

Here are some shots after the high water event of 9-30-16, when the flow got up to 4,000 cfs at the Sandy Level gauge. That would translate to over 800 cfs at the dam area.

In any case, the high water is continuing to eat at the banks, sometimes bringing whole sections sliding down with trees attached.

³ <https://www.fws.gov/northeast/virginiafield/partners/powerdam.html>

Esse quam videri

CO89-4

We have recommended that Mountain Valley cross the Pigg River using an HDD to reduce impacts.

COMPANIES AND NGOs

CO89 – Blue Ridge Environmental Defense League

20161222-5404 FERC PDF (Unofficial) 12/22/2016 2:43:11 PM

CO89-4
cont'd



Below the dam, sediment continues to create new wetlands. The channel continues to shift about, undecided, and will continue to do so for several years or more.

Esse quam videri

COMPANIES AND NGOs

CO89 – Blue Ridge Environmental Defense League

20161222-5404 FERC PDF (Unofficial) 12/22/2016 2:43:11 PM

CO89-4
cont'd



The stripping away of trees, shrubs and plants along creeks and rivers increases erosion and sediment within the waterbody excavated. It also presents a loss of groundwater for localities and downstream

CO89-5

bodies, such as Smith Mountain Lake. In a recent study completed for the Roanoke County Board of Supervisors, Pamela Dodd notes that, “Deforestation for construction in the headwater areas of first order high gradient streams reduces the amount of precipitation to recharge groundwater.

Compaction of soils for roads and work areas reduces and/or destroys the process of soils to be saturated and to serve as an avenue for groundwater recharge. Blasting for gas pipeline trenches and also for leveling of road and work corridor surfaces destroys or changes the bedrock fractures,

Esse quam videri

CO89-5

The entire right-of-way disturbed during construction would be revegetated. In temporary workspaces, trees would be allowed to recruit and regrow, and in the permanent right-of-way, a grassy/shrub corridor would be maintained. Impacts to vegetation including forest and riparian areas are discussed in sections 4.3, 4.4, and 4.5 of the EIS. Soil compaction testing and mitigation is discussed in section 4.2 of the EIS. See the response to CO14-1 regarding blasting.