New Data: Atlantic Coast Pipeline Would Trigger Extensive Mountaintop Removal

Dominion Resources Would Decapitate 38 Miles of Ridgetops to Build "Environmentally Friendly" Pipeline for Fracked Gas

SUMMARY: Dominion Resources intends to blast away, excavate, and partially remove entire mountaintops along 38 miles of Appalachian ridgelines as part of the construction of the Atlantic Coast Pipeline. Documents show that—in a massive undertaking—between 10 and 60 feet of the tops of mountain ridges would be "reduced" along 38 miles of the proposed pipeline route in West Virginia and Virginia. For perspective, the height equivalent of a five-story building would be erased in places from fully forested and ancient mountains. The pipeline would transport fracked gas from West Virginia into Virginia and North Carolina. Dominion's proposed construction method and route selection across and along steep mountains is unprecedented for the region—if not the country—and is viewed as extreme and radical by landowners, conservationists, and engineers. Beyond the obvious ecological and geological harm to the mountains themselves, Dominion has yet to reveal how it intends to dispose of at least 247,000 dump-truck-loads of excess rock and soil—known as "overburden"—that would accumulate from the construction along just these 38 miles of ridgetops.

THE FACTS: MOUNTAINTOP REMOVAL IS NOT JUST FOR COAL ANYMORE

FEDERAL ENERGY REGULATORY COMMISSION:

ACP's cut-and-fill construction on steep slopes would result in permanent, irreversible alterations of geologic conditions.

Draft Environmental Impact Statement, at p.4-37.

For years, West Virginia and southern Virginia have experienced the destruction from mountaintop removal practices used to access coal seams deep within mountains. Now these two states are facing this all-too familiar threat from a new source. Using a method not fully disclosed and therefore not previously understood by the public, Dominion Resources will dig up and blast away at mountaintops to construct the massive Atlantic Coast Pipeline (ACP). Similar impacts—although not yet fully inventoried—could come from the construction of a second pipeline to the south: the Mountain Valley Pipeline led by EQT Midstream Partners, LP.

MIRACLE RIDGE, BATH COUNTY, VA

Bath County resident Bill Limpert and his wife named one of the ridges on their property Miracle Ridge because of the spiritual feeling they get every time they walk on it. This ridge includes virgin forest. The Atlantic Coast Pipeline would follow Miracle Ridge for most of the 3,000-foot route through their property. He estimates that at least 19 feet of the ridge would need to be removed to build the ACP.

The proposed ACP is a massive and highly controversial interstate pipeline that would carry 1.44 billion cubic feet per day of fracked-gas from West Virginia through Virginia and into North Carolina. Dominion Resources, Inc. has the controlling share of the company formed to develop, construct and operate ACP.[1]

To build the ACP, Dominion would cut through the pristine mountains of West Virginia and Virginia, home to old-growth forests and critical animal habitat. The pipeline would traverse very steep slopes. Wintergreen, a ski resort, is located on the route and some of the slopes along the route are at a gradient of 80 percent or more.[2]

TO BUILD THE ATLANTIC COAST PIPELINE, DOMINION WILL USE EXPLOSIVES TO REMOVE THE TOPS OF APPALACHIAN MOUNTAINS

Dominion plans to build its pipeline right along the ridgelines of some of the steepest mountains in the Appalachians.[3] The choice to build along ridgelines is part of Dominion's preferred and deliberate design.[4] Working on these ridgelines will require creating a wide and flat surface to allow Dominion's earth-moving vehicles and deep-trenching machines to operate and maneuver. The federal government's report on the environmental impacts of the pipeline declares that "narrow ridgetops [will] require widening and flattening in order to provide workspace in the temporary right-of-way."[5] **This bland statement belies the truth: mountains will need to be decapitated for Dominion to build this pipeline.**

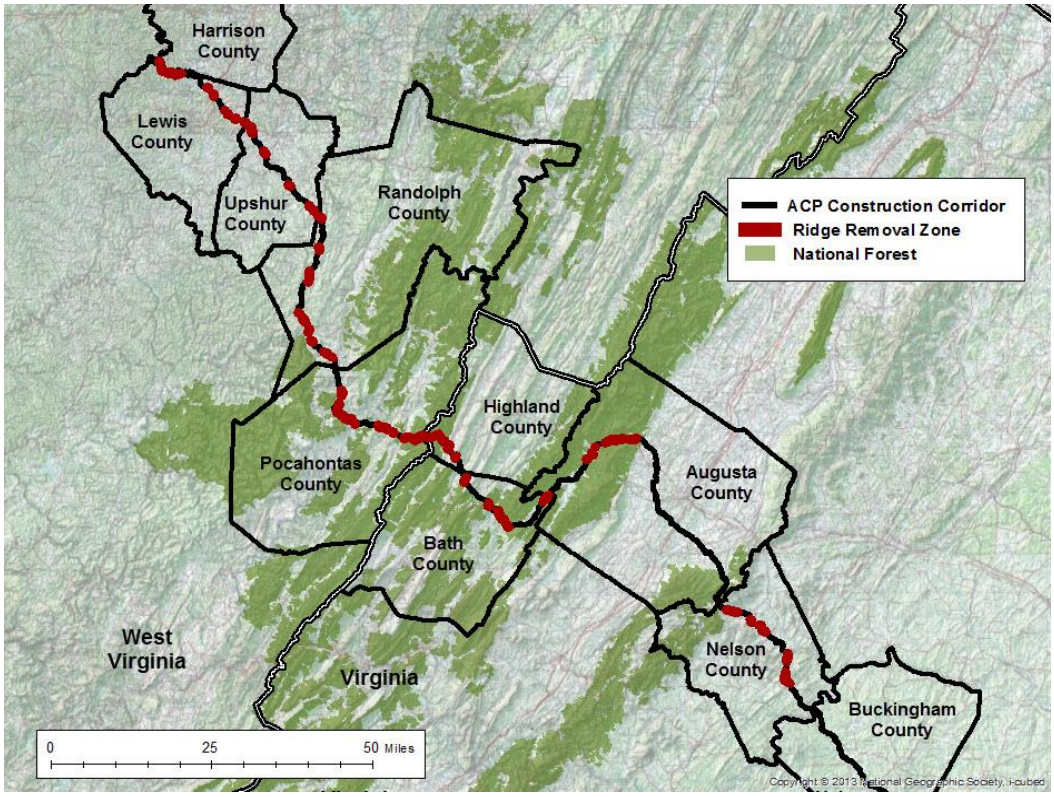

Figure 1: Ridge Removal Zones. Red areas add up to 38 miles.

According to the Federal Energy Regulatory Commission (FERC) report, Dominion will require a 125-foot-wide construction right-of-way in these areas.[6] Dominion's contractors will need to "level the right-of-way surface

to allow operation of construction equipment."[7] When hard bedrock is encountered, which is likely to be the case on these weather-resistant ridgetops,[8] "blasting may be required to fracture the rock."[9] Where blasting is not necessary, Dominion will fracture and excavate the bedrock using heavy construction equipment.[10]

BUILDING THE ACP WOULD SUBJECT THIRTY-EIGHT MILES OF RIDGES IN WEST VIRGINIA AND VIRGINIA TO MOUNTAINTOP REMOVAL

Approximately 38 miles of mountains in West Virginia and Virginia would see 10 feet or more of their ridgetops removed in order to build the Atlantic Coast Pipeline.[11] This figure includes 19 miles in West Virginia and 19 miles in Virginia. These calculations were made using the National Elevation Dataset from the U.S. Geological Survey and taking into account the required 125-foot right of way, slope steepness, and the width of impacted ridgelines (see fig.2). The majority of these mountains would be flattened by 10 to 20 feet, with some places along the route requiring the removal of 60 feet or more of ridgetop.[12]

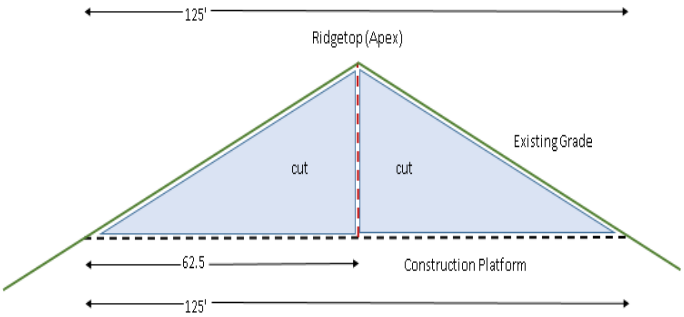

Figure 2: Diagram Depicting Mountaintop Removal. Mountaintop removal occurs when the apex, or spine of a ridgeline is cut down to create a level construction area or platform.

WHAT WILL DOMINION DO WITH THE STAGGERING AMOUNT OF EXCESS ROCK AND DIRT?

Building the ACP on top of these mountains will result in a tremendous quantity of excess material, known to those familiar with mountaintop removal as "overburden." Before construction can begin, all topsoil and vegetation must be removed to clear the 125-foot-wide construction right of way. Next, contractors would reduce the height of the mountain using explosives and heavy construction equipment to create a flat surface for working and storage. Then the company would dig trenches 30 feet wide[13] and eight feet deep.[14] Excavations could be deeper at ridgeline crossings.[15] The 42-inch-diameter pipeline would displace much of the excavated soil and rock. Moreover, a cubic yard of earth measured in its natural position grows to *more* than a cubic yard after it is excavated. This phenomenon is known as "swell."[16]

Dominion proposes to "restore all areas as close as practicable to their preconstruction contours."[17] What is practicable in this extreme case? Engineers studied a two-mile-long ridgeline along the route.

ROBERTS MOUNTAIN, NELSON COUNTY, VA

This pipeline would destroy Roberts Mountain near Joyce Burton's home in Nelson County. Like most of her neighbors, she has long been aware of the county's history of catastrophic landslides. She's heard survivors of Hurricane Camille tell horrifying stories of people waking up in the middle of the night to the roar of debris flows sweeping rocks, trees, and even houses down the side of the mountains. What scares her most is Dominion's plan to build the ACP on such narrow ridgetops. She knows that there's no way to clear and flatten a 125-foot-wide construction right-of-way along the top of a mountain whose ridge is itself only 20 feet wide without severely impacting the landslide-prone slopes on either side.

After Dominion finishes re-applying the massive amounts of damaged rock and earth to the ridgeline—known as "backfilling"—these experts concluded that 130,000 cubic yards of excess spoil would remain.[18] In other words, **the overburden from building the pipeline on just two miles of ridgeline would fill a football field nearly 80 feet deep.**

Assuming that the remaining 36 miles of ridgetops share a similar profile, Dominion would need to dispose of 2.47 million cubic yards of overburden, *just from these 38 miles*. Standard commercial dump trucks that could reasonably operate in this terrain can carry up to 10 yards of material. These fully loaded dump trucks would need to take at least 247,000 trips to haul this material away from the construction site. This astonishing number does not even take into account the excavation of the rest of the corridor and access roads on side slopes.

Figure 3. Photograph of Little Mountain. After removing all the trees and vegetation from the top of Little Mountain (in the foreground), the height of the mountain itself will be reduced by approximately 20 feet.

Numerous engineers who have looked at this issue have asked the obvious question: What does Dominion plan to do with the tremendous amount of overburden? Dump it into surrounding valleys as companies do with mountaintop removal for coal? Truck it off the mountains with massive dump trucks? And take the massive amounts of rock and soil to what location?

Moreover, the term "practicable," as defined by the FERC report, means "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall purpose of ACP."[19] Clearly, the process of decapitating 38 miles of ridgetops will not allow Dominion to "restore" these mountains to anything resembling their original geological and ecological state. As the federal government itself said in its review, "construction on steep slopes would result in permanent, irreversible alterations of geologic conditions."[20] With this new information, the debate is settled: The ACP—and MVP—will cause irrevocable harm to the region's environmental resources.

CONTACT US:

Allegheny-Blue Ridge Alliance: Lewis Freeman, (703) 298-8107, lewfreeman@gmail.com
Appalachian Mountain Advocates: Ben Luckett, (304) 645-0125, bluckett@appalmad.org
Chesapeake Climate Action Network: Mike Tidwell, (240) 460-5838, mtidwell@chesapeakeclimate.org
Dominion Pipeline Monitoring Coalition: Daniel Shaffer, dshaffer@abralliance.org
Friends of Nelson: Joyce Burton, (434) 361-2328, joybirdpt@gmail.com

END NOTES

[1] Michael Martz, *Dominion retains controlling share in pipeline company in restructuring after Piedmont sale*, RICHMOND TIMES DISPATCH, Oct. 3, 2016. The pipeline has contracted with Dominion Transmission, Inc. (DTI), a subsidiary of Dominion Resources, Inc., to construct and operate the ACP.

[2] BLACKBURN CONSULTING SERVICES, LLC, REPORT ANALYSIS AND FIELD VERIFICATION OF SOIL AND GEOLOGIC CONCERNS WITH THE ATLANTIC COAST PIPELINE (ACP) IN NELSON COUNTY, VA, at p.28 [hereinafter BLACKBURN REPORT], *available at* http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20170327-5096 (describing field measurements of side slopes along the pipeline route).

[3] FED. ENERGY REGULATORY COMM'N, ATLANTIC COAST PIPELINE AND SUPPLY HEADER PROJECT DRAFT ENVIRONMENTAL IMPACT STATEMENT (Dec. 2016), at p.2-19 [hereinafter DEIS], *available at* https://www.ferc.gov/industries/gas/enviro/eis/2016/12-30-16-DEIS/volume-I.pdf ("In West Virginia and northwestern Virginia, the proposed Atlantic Coast Pipeline would be constructed in steep terrain. Generally, the pipeline alignment runs along ridgelines and up and down slopes (as opposed to crossing laterally on side slopes).").

[4] DEIS, at p.5-2 ("[T]he proposed pipelines have been cited [sic] to maximize ridgeline construction.").

[5] DEIS, at p.4-36.

[6] DEIS, at Table 2.2.2-1, p.2-19.

[7] DEIS, at p.2-32.

[8] *See* Resource Report 7 (Soils), at Table 7.4.1-1 ("Acres of Soil Characteristics Affected by the Proposed Pipelines for the Atlantic Coast Pipeline and Supply Header Project"), originally submitted to FERC by Dominion/ACP in September 2015, and updated in Appendix I of their July 18, 2016 Supplemental Filing.

[9] DEIS, at p.2-32. *See also* BLACKBURN REPORT, at p.14.

[10] Resource Report 6 (Geological Resources), at p.6-32.

[11] See Explanation of Methodology, Dominion Pipeline Monitoring Coalition, *available at* https://dl.dropboxusercontent.com/u/420593850/DPMC_Story_Map_Images/Daniel_Shaffer/Operation_Overburden/Ridgetop_Removal_Simple.pdf

[12] See Explanation of Methodology, Dominion Pipeline Monitoring Coalition, *available at* https://dl.dropboxusercontent.com/u/420593850/DPMC_Story_Map_Images/Daniel_Shaffer/Operation_Overburden/Ridgetop_Removal_Simple.pdf

[13] DEIS, at p.2-19.

[14] DEIS, at p.2-32.

[15] DEIS, at p.2-33.

[16] DEIS, at p.4-36 (noting that excavated material is likely to swell in volume).

[17] DEIS, at p.4-4.

[18] *Comments on the DEIS for the Atlantic Coast Pipeline and Supply Header Project*, submitted by Appalachian Mountain Advocates et al. on Apr. 4, 2017, at Attachment 48, p.10.

[19] DEIS, at p.1-9.

[20] DEIS, at p.4-37.