west virginia department of environmental protection

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Jim Justice, Governor
Austin Caperton, Cabinet Secretary
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January 25, 2018

Re: WV Permit No. WV0116815
Registration Application No. WVR310820
Dominion Energy Transmission, Inc
Atlantic Coast Pipeline
Responsiveness Summary

Dear Commenter,

The State of West Virginia, Department of Environmental Protection (DEP), Division of Water and Waste Management (DWWM) issued a State General Water Pollution Control Permit to regulate the discharge of stormwater runoff associated with oil and gas related construction activities. This General Permit authorizes discharges composed entirely of stormwater associated with oil and gas field activities or operations associated with exploration, production, processing or treatment operations or transmission facilities, disturbing one acre or greater of land area, to the waters of the State. WV0116815 (Stormwater Associated with Oil and Gas related activities) was issued on May 13, 2013. It became effective on June 12, 2013 and expires on May 13, 2018.

Dominion Energy Transmission, Inc. (DETI), is proposing to construct approximately 98.7 miles (2,497 acres) of pipeline, new metering stations, and a compressor station (CS) within the state of West Virginia for transmission of natural gas to markets in Virginia and North Carolina. The AP-1 mainline will originate at a new interconnect with Atlantic Coast Pipeline (ACP) facilities in Harrison County, West Virginia. From the Harrison County interconnect point, the pipeline will extend southeast through West Virginia, crossing Harrison, Lewis, Upshur, Randolph, and Pocahontas Counties to the Virginia state line, where the pipeline will continue through Virginia and into North Carolina.

DWWM published a Class I legal advertisement (public notice) in the Exponent Telegram, Weston Democrat, The Record Delta, The Intermountain, and the Pocahontas Times. These public notices allowed the DWWM to receive public comments on the proposed project. The public notice/public comment period closed on December 31, 2017.

There were two public hearings held for the Oil & Gas Construction Stormwater General Permit Registration (WVR310820):

- Buckhannon Upshur High School on Monday December 18, 2017
- Pocahontas County High School on Thursday December 21, 2017

In total there were around 500 pages of comments submitted to the DWWM in response to ACP's proposed project. There were ~200 pages from 165 different commenters that had general comments/questions about the project. There were also ~300 pages of support from 280 different commenters.

Several of the comments received were outside of the scope of the general permit and/or DEP's overall regulatory authority. Examples include comments related to deforestation, blasting, post construction stormwater runoff effects, and general need for the project. DEP, via this general stormwater permit, or other authorities, is not empowered to limit tree cutting, to manage changing land uses, post construction runoff or evaluate the need for a project.

The DEP's DWWM would like to take this opportunity to thanks those who submitted written comments on Stormwater Associated with Oil and Gas Related Activities general permit registration application for Dominion Transmission, Inc. A Responsiveness Summary has been prepared. The DWWM has made every attempt possible to ensure that all questions/concerns related to Stormwater Associated with Oil and Gas Related Activities (registration #WVR310820) were addressed. The Responsiveness Summary highlights the issues and concerns that were identified through written and oral comments received during the comment period.

The attached Responsiveness Summary is organized such that comments frequently mentioned, or general in nature, or outside the scope of DEP's authority, are responded to first, Section A (General Comments Responses). More specific comments on the Construction Stormwater Permit Registration, and the DEP's response, are second, Section B (Construction Stormwater Permit Registration - Specific Comments and Responses). Oral comments received at the Public Hearings are summarized in Section C (Oral Comments and Responses). In many instances, multiple/similar comments were provided on specific sections or issues. Those comments and responses were summarized to the extent possible.

Again, thank you for your interest and comment on the Dominion Energy Transmission, Inc., Stormwater Permit Registration. If you have any further questions or concerns, please do not hesitate to contact Jon Michael Bosley of my staff at 304-926-0499 ext. 1059 or by email at Jon.M.Bosley@wv.gov.

Sincerely

Scott G. Mandirola
Director

## Section A: General Comments Responses

In many cases multiple comments were provided on specific sections or issues, and those responses have been categorized to the extent possible below:

A. **Water Quality, Tier III, Anti-Degradation Response:** The DEP's approach to construction general permits, whether for National Pollutant Discharge Elimination System (NPDES) or Oil and Gas, follows the same path as the Environmental Protection Agency's (EPA) construction general permit. Both EPA's and DEP's permits rely on best management practices (BMPs) to control the discharge of sediment or sediment-related parameters. EPA has taken this approach and provides a detailed explanation in their 2017 Construction General Permit (CGP) fact sheet and in the previously issued 2012 CGP fact sheet. Notably, the DEP NPDES Construction General Permit is approved by EPA and the Stormwater Associated with Oil and Gas related Construction Activities General Permit (Oil & Gas Construction Stormwater General Permit) is mirrored from it as a state-only permit. It is a state-authority-only issued permit as Oil and Gas activity is exempt from the federal requirement to obtain an NPDES permit.

EPA addresses construction stormwater permitting via a three-pronged approach which includes technology-based effluent limitations, water quality-based effluent limits (WQBELs) and Site Inspection Requirements and frequencies. Although it may sound as if specific limits are assigned to these discharges through technology based limitations or WQBELS, what is addressed in these sections of the permit and explained in the fact sheet are BMP's necessary to stop, minimize and/or control sediment from leaving the disturbed area and discharging into a stream. These non-numeric effluent limitations are designed to prevent the mobilization and stormwater discharge of sediment or sediment-related parameters, such as metals and nutrients, and prevent or minimize exposure of stormwater to construction materials, debris and other sources of pollutants on construction sites. Nationwide, source control through minimization of soil erosion is relied on as a pragmatic and effective way of controlling the discharge of these pollutants from construction activities.

EPA states in section 3.1 of the 2017 CGP that "EPA expects that compliance with the conditions in this permit will result in stormwater discharges being controlled as necessary to meet applicable water quality standards". In parallel, DEP believes the same rationale applies to a permit, approved by EPA, for use by a state with delegated primacy to implement the NPDES program. Further, applying this same rationale to a state-authority-only issued Oil & Gas Construction Stormwater General Permit is a natural and logical extension.

In the simplest of terms antidegradation involves protecting a stream's designated uses at a Tier 1 level if the stream is impaired for a particular pollutant of concern, keeping high quality streams better than criteria unless a lowering of water quality if justified based on socioeconomic considerations (Tier 2) and providing for only short term degradation of Outstanding National Resource Waters (Tier 3).

EPA's approach, in the 2017 CGP, to address discharges to a water impaired for sediment or sediment-related parameters, and/or nutrients, or to a water that is identified by the state, as Tier 2, or Tier 3 for antidegradation purposes is to comply with increased inspection frequencies and

stabilization deadlines outlined in the permit. As set forth in the EPA permit, the normal inspection frequencies are either to conduct a site inspection once every seven (7) calendar days or conduct a site inspection once every 14 days and within 24 hours of the occurrence of a storm event of 0.25 inches or greater. For a discharge to sensitive waters, EPA requires that the operator must conduct inspections once every 7 calendar days and within 24 hours of a storm event of 0.25 inches or greater. The operator must keep a record of rainfall measured in both instances.

The standard stabilization requirements in the EPA approach are to initiate the installation of stabilization measures immediately in any areas of exposed soil where construction activities have permanently ceased or will be temporarily inactive for 14 or more calendar days and complete the installation of stabilization measures as soon as practicable, but no later than 14 calendar days after stabilization has been initiated. For a discharge to sensitive waters EPA requires the completion of the installation of stabilization measures as soon as practicable, but no later than seven (7) calendar days after stabilization has been initiated. The rationale for the more stringent requirements for Tier 2 and 3 designated waters as explained in the EPA 2012 CGP fact sheet is as follows: "As stated in Part 3.1 of the [2012] permit, in the absence of information demonstrating otherwise, EPA expects that compliance with the conditions in this permit will result in stormwater discharges being controlled as necessary to meet applicable water quality standards (which include state antidegradation requirements). More specifically, by imposing on operators that discharge to Tier 2, Tier 2.5, or Tier 3 waters the requirement to comply with the additional requirements, on top of the permit's other effluent limits and conditions, to stabilize exposed areas faster and to conduct more site inspections than other sites, it is EPA's judgment that authorizing these discharges will not result in a lowering of water quality. Thus, EPA has determined that compliance with the CGP generally will be sufficient to satisfy Tier 2 and Tier 3 antidegradation requirements because the controls will not result in a lowering of water quality, making individualized Tier 2 or Tier 3 review unnecessary."

The Oil & Gas Construction Stormwater General Permit issued by the DEP requires that stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than seven days after the construction activity in that portion of the site has permanently ceased. It also requires at a minimum all erosion controls on the site are inspected at least once every seven calendar days and within 24 hours after any storm event of greater than 0.5 inches of rain per 24-hour period. These standard requirements are more stringent than the standard requirements for the EPA permit and nearly as stringent and protective as the EPA permit requirements to address discharges to waters impaired for sediment or sediment-related parameters, and/or nutrients, or to waters that are identified by the state, as Tier 2, or Tier 3 for antidegradation purposes. There is 1 tier 3 water in this project and it is crossed by an access road. The Stormwater Pollution Prevention Plan (SWPPP) for this project requires that additional protective measures will be employed at crossings of and in proximity to Tier 3 and trout streams. The additional measures include permanent seeding and mulching must be accomplished within 4 days of reaching final grade; temporary seeding and mulching must be accomplished within 4 days when areas will not be disturbed for more than 14 days; the use of reinforced filtration devices (defined as belted silt retention fence, triple stacked compost filter sock and/or super silt fence) at all downslope perimeters; stream crossings in these areas will be completed within 72 hours once the crossing has begun; and disturbance will be limited as much as practicable. Additionally, the SWPPP requires at a minimum all erosion controls in these areas are

inspected at least once every seven calendar days and within 24 hours after any storm event of greater than 0.25 inches of rain per 24-hour period. DETI, has also indicated in the SWPPP that the inspection frequency for the entire project will be seven calendar days and within 24 hours after any storm event of greater than 0.25 inches of rain per 24-hour period which exceeds requirements of the Oil & Gas Construction Stormwater General Permit and should help ensure compliance.

Since in EPA's 2012 CGP fact sheet it was determined that by imposing on operators that discharge to sensitive waters additional requirements to stabilize exposed areas faster and to conduct more site inspections than other sites, results in these discharges not resulting in a lowering of water quality, and since the additional requirements to stabilize exposed areas faster and to conduct more site inspections than other sites in the Oil & Gas Construction Stormwater General Permit registration in sensitive waters are equal to or more stringent than those used by EPA, it is DEP's position that following the requirements of the Oil & Gas Construction Stormwater General Permit registration will not result in the lowering of water quality. Thus, compliance with the Oil & Gas Construction Stormwater General Permit will be sufficient to satisfy Tier 2, and the additional controls outlined in the SWPPP associated with this registration, which exceed EPA required controls to satisfy Tier 3 antidegradation, are sufficient to not result in a lowering of water quality, making individualized Tier 2 or Tier 3 review unnecessary.

Further, specific to West Virginia law pursuant to Section 3.7 of the Antidegradation Rule 60CSR5, a Tier 2 review is not required for general permit registrations. Section 3.7 states that "On or after July 2, 2001, the effective date of these implementation procedures, new and reissued WV/NPDES general permits will be evaluated to consider the potential for significant degradation as a result of the permitted activity. Regulated activities that are granted coverage by a WV/NPDES general permit will not be required to undergo a Tier 2 antidegradation review as part of the permit registration process." Although EPA has not approved this section for use in federal Clean Water Act NPDES permits the Oil & Gas Construction Stormwater General Permit is a state- only permit issued under the authority of the WV Water Pollution Control Act. As part of 60CSR5, which was passed by the Legislature and signed into law by the Governor in 2008, it is in effect and the law for state only permits.

Additionally, as discussed above the standard requirements in the Oil & Gas Construction Stormwater General Permit addressing stabilizing exposed areas and conducting site inspections are nearly as stringent as EPA's additional requirements that are used to meet a Tier 3 review, which allows no degradation. By implementing these controls on all disturbed area under the permit registration coverage Tier 2 antidegradation is fully addressed and an individual Tier 2 review and its associated baseline water quality is not required.

With respect to waters with Total Maximum Daily Loads (TMDLs) or 303(d) listings for sediment, when TMDLs are developed a waste load allocation for some amount of new construction stormwater acreage is included in the TMDL. This allocation is only for NPDES construction stormwater permits and has previously not been applied to Oil & Gas Construction Stormwater General Permits. TMDLs only directly dictate what happens to activities on the land that have a discharge permit. Activities like farming or logging may disrupt the soil, but are not regulated or

given effluent limits. They are considered nonpoint sources in the TMDLs and thus not given a waste load allocation.

In waters with approved TMDLs for sediment, DETI will be required to operate within the acreage limitations and/or disturbance alternatives as specified in the TMDL. In waters listed as sediment impaired, where TMDLs have not yet been developed, as per the SWPP commitments, DETI will utilize controls as described above in the EPA methodology for sensitive waters.

B. **Deforestation and Restoration Response:** The existing ground surface topography within the project area will be restored as practical to pre-construction conditions, which will help maintain the preconstruction surface flow. Any excess rock and soil will be evenly distributed over the restored right-of-way.

To protect stream integrity and prevent degradation and soil loss during construction, DETI, is required to install and maintain the erosion and sediment control best management practices (BMPs) that are identified on the Erosion and Sediment Control (E&S) plans. These BMPs include the following: silt fence, belted silt fence, super silt fence, compost filter sock, diversion berms, water bars, broad-based dips, aerial stream and wetland crossings, erosion control blanketing, hydraulically applied seed, enhanced seeding mixes, and landslide mitigation techniques. These devices are used throughout the region for all types of construction projects, including pipeline construction. In more sensitive watersheds or resource areas, such as trout streams, enhanced BMPs such as triple stacked filter sock, belted silt fence or super-silt fence will be used instead of the standard silt fence or compost filter sock to provide additional protection.

In an effort to provide enhanced protection and restoration, DETI has provided a project specific Restoration and Rehabilitation Plan (RRP).

By restoring the topography, installing and maintaining the BMPs, conducting weekly and post rainfall inspections, and implementing the RRP, DWWM believes that maximum protection will be provided to the project area's aquatic resources and any potential long-term cumulative impacts within the project area will be minimized.

DEP and other state/federal agencies are working with DETI to identify and protect sensitive resources in the project area.

C. **Landslide Mitigation Plan Response:** Portions of the AP-1 mainline in West Virginia will be constructed in steep, mountainous terrain. Slope instability in the form of landslides, landslips, or surficial slumping can present a significant hazard to pipeline routing, design, construction, and operation in steep slope areas if proper planning and mitigation is not considered in advance. When routing the ACP, the goal was to do so perpendicularly to topographic contours and to minimize routing on steep slopes to the extent practicable, in accordance with DETI's program for steep slopes, which includes considerations for slips associated with pipeline construction during routing as well as engineering design, preconstruction planning, construction, and post construction.

For the ACP Project, DETI committed to identifying mitigation measures beyond standard practices through a Best in Class (BIC) Program. The focus of the BIC Program is to proactively address steep slopes (defined as slopes with an inclination greater than 30 percent and greater than 100 feet in length) and landslide hazards related to pipeline construction, compressor station, and metering and regulation facilities that could potentially impact environmental resources, in particular streams, wetlands, and waterbodies. The BIC program is intended to incorporate the permit requirements and then exceed these regulatory standards, to mitigate for potential erosion and sediment discharges related to steep slope and landslide hazards.

D. **Karst Response:** The proposed ACP route crosses karst terrain in Randolph and Pocahontas counties in West Virginia. DETI has developed and is required to implement a Karst Terrain Assessment Construction, Monitoring and Mitigation Plan (Karst Plan), which identifies construction and restoration practices in karst areas. In accordance with this plan, erosion and sediment controls (ESC) will be installed prior to construction along the edge of the ROW and in other work areas upslope of known sinkholes or other identified karst features with a direct connection to the phreatic zone of the karst. Karst terrain within the AP-1 mainline is identified on the Construction Alignment Sheets as "geologic sensitive areas."

In addition to conducting surveys prior to construction to identify and map visible karst features, DETI proposes to monitor clearing, grading, and trenching activities to identify potential karst features that may have been unidentifiable on the surface during the preconstruction survey. If karst features are uncovered, they will be evaluated. An example mitigation method for a sinkhole would be to excavate the feature to expose its throat, and then plug the throat using graded rock fill to allow drainage and minimize alteration of flow patterns. DETI will monitor karst features in accordance with its Karst Plan. Enhanced erosion and sediment control BMPs have been added to provide additional protection of identified geologic features within 150 feet of the proposed workspace.

DETI proposes to provide post-construction monitoring of the pipeline in the vicinity of karst features. Typically the trench backfill is not compacted, so as to retain the permeability to precipitation and allow recharge to occur freely. Thus, minor differential settlement occurs regularly along pipelines, and is taken into account. The Karst Plan includes protocols for regular post-construction inspection. Specifically, the following procedures are identified on pages 14 through 16 of the plan.

An electrical resistivity investigation (ERI) will be conducted prior to tree clearing where conditions allow and on the parcels where access permission has been granted. The ERI is part of the construction phase, and is intended to be conducted prior to any earth disturbance. If the ERI indicates a significant subsurface void is present within the first 10-feet of bedrock, and the trench will intercept that feature as planned (i.e. where the bedrock is less than 10 – 12 feet below the existing surface, or the void will be intercepted by the trench under any circumstances) the centerline may be adjusted from 8 to 10 degrees depending on pipe classification. However, in some cases it may be impossible to avoid the feature (such as a linear solution conduit running perpendicular to the trench), and in that case the ERI serves as an "early warning" to allow ACP to prepare for remedial actions." Prior to the commencement of any earth disturbance activity, the area of the pipeline that

will be affected by the planned activities will be inspected by the karst specialist (KS) or the karst field geologist (KFG).

If a geologically sensitive feature is discovered during construction, by the ERI or other means and it is determined that the ACP pipeline alignment will be within 150 feet of any features, a formal modification (Form M) will be submitted within 30 days of identifying the feature.

E. **Stream Crossing Response:** Movement across waterbodies will be limited to necessary equipment only. BMPs for vehicles crossing streams and wetlands will be utilized when practical. For each identified crossing location, dry crossing techniques are preferred. Individual stream crossings will be completed in a continuous, progressive manner and completed within 72 hours under normal or low stream flow conditions.

DETI has proposed to employ a typical temporary equipment crossing at each stream location. The temporary equipment crossing will consist of timber mat bridges (with or without culverts), or a rock-flume crossing, depending on the depth of the stream channel and channel flow at the time of construction. Details regarding these crossing methods are found in the application. All stream crossings will be restored to approximate preconstruction grades and contours, and banks will be re-vegetated and stabilized.

DETI is required to obtain necessary stream permits including WVDNR Office of Land and Streams for the Public Land Corporation and the Section 404 U.S. Army Corps of Engineers Permits. DETI will conduct stream crossing actions as authorized by applicable permits and regulations.

The following techniques are a means of diverting flow over or around the open excavation: open cut, conventional bore, and dry crossing (flume method, dam-and-pump method, and cofferdam method). The limiting factors for these techniques are usually stream size, flow, and water depth.

F. **Blasting Response:** DETI has prepared a Blasting Plan for procedures and safety measures that DETI's construction contractors will adhere to while conducting blasting activities required for the construction of ACP. A copy of the current Blasting Plan is provided in the application. Blasting for this project is outside the scope of DEP's authority.

DETI has also developed specific blasting procedures in coordination with the appropriate agencies that address pre- and post-blast inspections; advanced public notification; and mitigation measures for building foundations, groundwater wells, and springs. Use appropriate methods (e.g., blasting mats) to prevent damage to nearby structures and to prevent debris from entering sensitive environmental resource areas.

G. **Access Road Response:** Some existing access roads are not wide enough to support the vehicular traffic necessary to construct the project. Therefore, upgrades to certain roads are required. The E&S plan provided to the DWWM have grouped access roads into four categories – 1) Existing roads no improvements, 2) Existing roads minor improvements, 3) Existing roads major improvements, 4) New Roads. Appropriate E&S controls will be provided for roads in categories 2, 3 and 4. Roads in

categories 1 have adequate existing drainage controls. New or improved drainage controls will be provided for roads in categories 3 and 4. Additional BMPs would be installed as necessary to prevent any off-site movement of sediments. A "Graded and Maintained" roadway may require widening, grading, and/or crushed stone placement. The sheet flow along these roadways will be controlled with drainage channels, broad based dips, culverts and waterbars. Additional BMPs would be installed as necessary to prevent potential uncontrolled release of sediments.

The ACP Project proposes to utilize a total of 136.13 miles of access roads within West Virginia during construction. An estimated 2.57 miles of new roadway within West Virginia will be constructed. The Project will involve 4.86 miles of hybrid existing/new access roads within West Virginia (this includes access roads where a portion of the road is existing, and a portion is new, to-be-constructed). In some cases, existing roads will require improvement (such as grading, gravelling, replacing or installing culverts, minor widening, and/or clearing of overhead vegetation) to safely accommodate construction equipment and vehicles. Roadwork on public lands will conform to the design standards of the land managing agency.

DETI proposes to utilize existing roads to the extent practicable, but some new roads will need to be built in remote areas. Access road upgrades requiring grading of earth, cleaning of roadside channels, widening or similar earth disturbance shall be shown within the project limit of disturbance (LOD) and have appropriate E&S controls installed. Existing access roads requiring only the resurfacing with gravel or asphalt are not required to be included within the LOD.

In areas where streams parallel the access roads, the roads have been shifted to avoid placing fill within the streams. Erosion and sediment control BMPs are also proposed along the access road. The slope of the roads will be constructed to drain to the inside, away from the road. The drainage will then be directed to a culvert, to controlled discharge locations.

H. **General Water Pollution Control Permit - Section G.4.e.2.B Response:** DETI has provided the DWWM the required information in accordance with the General Water Pollution Control Permit, Section G.4.e.2.B which includes a description of measures that will be included in both the E&S plans and the SWPPP. In accordance with G.4.e.2.B, the project has been designed using professionally accepted engineering and hydrologic methodologies. These measures will be installed during construction to control pollutants in stormwater discharges after the project is completed. DETI has also provided the DWWM with the information necessary to provide a technical basis for the stormwater management plan. Spacing requirements for the BMPs are provided on the E&S Control Detail Sheets included with the General Water Pollution Control Permit application.

I. **Best Management Practices for Drainage Areas Greater than 3,600 cubic feet Response:** In accordance with G.4.e.2.A.ii.e, Sediment basins/traps are not typically used for pipelines or linear projects in general. Linear projects use other regulatory-acceptable best management practices (BMPs). The linear aspect of the disturbance for these projects would make it difficult and generally ineffective to place a sediment basin in a location that would catch the drainage throughout the project sites since they traverse the terrain in a linear fashion.

J. **Trout Stream Response:** Impacts to high quality streams are reduced to the fullest extent practical and minimized by using instream diversions during construction, performing constructing activities during low flows, avoiding the streams during seasonal restrictions, and using more stringent E&S BMPs around the resources. The streams will be restored to preconstruction conditions by using approved construction techniques.

Enhanced E&S BMPS will be utilized around sensitive resources such as streams and wetlands. Reroutes and shifts around forested wetlands and scrub shrub wetlands have also been incorporated into the proposed alignment to reduce impacts. In addition, impacts to sensitive resources will be reduced by adhering to seasonal restrictions (for restricted streams) and planning construction during low-flow conditions. During construction, the existing stream substrate is separated and stockpiled. After the pipe is installed the pipe trench is backfilled and the stream material is the last material restored. This technique returns the native stream material to the stream.

## Section B: Construction Stormwater Permit Registration – Specific Comments and Responses

Comment #1: Final mitigation or avoidance measures of geologically sensitive areas are not included in the application and are still being developed by geotechnical engineers.

**Response #1: See Section A. Response D.**

Comment #2: The use of riprap is proposed for stream bank stabilization instead of WVDEP's preferred method of restoration using natural stream channel design techniques.

**Response #2: Following initial stream bank stabilization, Atlantic and DETI will restore the banks of waterbodies to preconstruction contours to the extent practicable. In steep-slope areas, regrading may be required to reestablish stable contours capable of supporting preconstruction drainage patterns. Riparian areas will be revegetated with native species across the entire width of the construction corridor. Restoration of riparian areas will be designed to restore stream bank integrity, including both shore crossings up to the ordinary high water mark; withstand periods of high flow without increasing erosion and downstream sedimentation; and include temporary erosion control fencing, which will remain in place until stream bank and riparian restoration is complete. Permanent bank stabilization and erosion control devices (e.g., natural structures, rock riprap, and/or large woody debris) will be installed as necessary on steep banks in accordance with permit requirements to permanently stabilize the banks and minimize sediment deposition into waterbodies.**

**Application of riprap for bank stabilization will comply with the United States Army Corps of Engineers (USACE), or its delegated agency, permit terms and conditions.**

Comment #3: High quality (Tier 3) waters will be crossed and must undergo an anti-degradation review as required by the permit.

**Response #3: An anti-degradation review was completed for this permit. The only Tier 3 waterbody associated with the Project in West Virginia is Slaty Fork which is crossed by an access road (ID AR #05-001-C 009.AR1) near its headwaters. DEP has requested and DETI has agreed to implement enhanced BMPs exceeding minimum requirements to reduce or eliminate potential impacts to the Tier 3 waterbody.**

**Also, See Section A. Response A.**

Comment #4: No water quality monitoring is proposed. Although not required, good practice dictates that monitors should be installed at sensitive stream crossings similar to the efforts being conducted along proposed pipeline routes in VA.

**Response #4: Water Quality Monitoring is not required by the General WV Water Pollution Control Permit No. WV0116815 or EPA's Stormwater Construction General Permit.**

Comment #5: No stormwater discharge calculations are provided to determine the impact of impervious/nearly impervious areas created by the proposed construction.

**Response #5: See Section A. Response H.**

Comment #6: The WV Water Quality Standards specify that water should be tested for turbidity. There is no statement in the ACP documents that turbidity measurements will be obtained prior to and following the proposed construction.

**Response #6: A turbidity analysis is not required by the General WV Water Pollution Control Permit No. WV0116815 or from EPA's Stormwater Construction General Permit.**

**To protect stream integrity, prevent degradation and soil loss, during construction, DETI proposes to install and maintain erosion and sediment control BMPs that are identified on the E&S plans. These BMPs include silt fence, belted silt fence, super silt fence, compost filter sock, diversion berms, water bars, broad-based dips, sumps and rock checks, erosion control blanketing, hydraulically applied seed, enhanced seeding mixes, and landslide mitigation techniques. These devices protect the stream from sediment loads, help reduce turbidity and are used throughout the region for all types of construction projects, including pipeline construction.**

Comment #7: No sediment traps or sediment basins are included as Best Management Practices (BMPs)

**Response #7: Section A. Response I.**

Comment #8: Anti-degradation review is required by the state of West Virginia. Will stringent anti-degradation review occur?

**Response #8: See Section A. Response A.**

Comment #9: Will there be quick legal action occur when there is an infraction, rather than allowing the company to casually correct things at its leisure, regardless of impending environmental problems?

**Response #9: The DEP Environmental Enforcement (EE) Office will be monitoring the Atlantic Coast Pipeline as often as time and resources allow. EE will remain in contact with DETI, third party inspectors, FERC, etc., for the duration of the project.**

Comment #10: The Atlantic Coast Pipeline's stormwater permit application does not meet WVDEP's stormwater permit requirements.

**Response #10: Please see Section A. Response H.**

Comment #11: The pipeline itself cutting across some of the most pristine streams, karst-laden terrain, and steep-sloped mountains in the state. The small intermittent stream that comes off the Monongahela National Forest into our property is the northern-most head of Knapps Creek, which would be crossed by the proposed ACP route about 500 yards south of our property line. The proposed ACP route courses east

through the national forest along a narrow path that I and my sons have walked, hunted, and enjoyed for four decades. I know it so intimately well, and admit to nostalgia, for the ACP would massively alter it. The path is narrow with steep slopes on each side, and then drops down into a deep narrow valley before rising again to the ridge line (and state line) of Allegheny Mountain. I am also personally familiar with the narrow strip of the Monongahela to the west of me and then as it abuts Seneca State Forest on very steep-sloped Michael Mountain. I have intimate knowledge of these sections where the ACP route is proposed. Our well water comes from the Michael Mountain range, according to our well-driller. A layer of karst underlies some of that range on the east side (see map) Our water is low-flow but has been consistent and reliable for these 40 years.

Comments and Recommendations:

1. As with many of our neighbors, our home is within the pipeline Blast Zone.

I request that WVDEP take direct responsibility or direct to an appropriate agency a plausible forest fire fighting plan, evacuation routes, training and equipping local and regional emergency personnel, and developing an emergency protocol, and notification of the public of such a plan.

2. DEIS page 4-25 points out that 73% of the ACP route in West Virginia "cross areas with a high incidence of and a high susceptibility to landslides" (4-25), which ACP still has not determined how to satisfactorily construct. 82% of the 5 mile route through the Monongahela National Forest would be on ridges. 18% would be on side slopes which "are susceptible to natural landslides, and thus, the potential for project-induced landslides (cut slope and fill slope failures) is high. Because of the steep slopes, there is potential for failure of trench backfill and the backfill in the rest of the temporary right-of-way." (4-35). Further on we read, "small fills on steep slopes can produce catastrophic debris flows. During a rainstorm, when a fill slope slumps or slides downhill and liquefies into debris flow, the debris flow has a "snowball effect" that increases the debris flow volume and destructive power as it gouges downslope scraping off and incorporating colluvium, weathered bedrock, trees, stream banks and bedload." (4-36). I will point out the heavy flood rain in June 2016, and then again a few months later with an 8-inch rainfall in this section of the ACP-routed section of the Monongahela National Forest. Both heavy rainfalls flooded sections of Rt. 92 near where we live. A walk up Bird Run (USFS) near Rt. 84 visibly shows the massive debris washed out from flooding even with no recent logging or land disturbance. The steep slopes, thin erodible soils, and high potential of rain deluge portend serious degradation of fragile lands and streams.

Please require ACP demonstration projects that prove these steep slopes can be protectively stabilized throughout the construction process and during operations, including scenarios of severe weather, to prevent landslides and sedimentation runoff.

I request that a full assessment of Karst in Seneca State Forest and all of Michael Mountain be conducted prior to any DEP permitting, including underground water impact.

3. Clover Lick Mountain is a region in my Pocahontas County that is inadequately and deficiently addressed in the DEIS. This region exemplifies many other deficient or inadequately addressed areas throughout the more rugged proposed ACP route. I make a few comments that should be addressed.

ACP has not provided comprehensive Erosion and Sedimentation Control plans (ESC), but only partial and only recently submitted.

I request DEP require comprehensive, plausible, provable storm water management plans for the Clover Lick area and all other similar rugged mountainous terrain throughout the proposed interstate route, including pipeline corridor, access roads, stockpile yards, and staging areas.

West Virginia ESC requirements specify placement of slope breakers at 75-foot intervals for slopes greater than 25%, but acknowledge that installation is difficult on slopes greater than 35%. A substantial part of the ACP construction corridor, including in the Clover Creek area, has slopes exceeding 40% where installation of slope breakers is not practicable. I request that DEP require ACP, prior to any construction, to successfully demonstrate its methods for controlling stormwater and sediment runoff on such steep slopes.

Mauch Chunk soil is prevalent in much of the Clover Lick area, is considered the most sediment-prone soil in the Monongahela National Forest. I request that I request that DEP require ACP, prior to any construction, submit a provable Best Management Practices Plan, following a thorough survey of this region.

I request independently-conducted dye tracing to establish karst interconnection in this region, which prioritizes protecting drinking water. (protecting water is your job)

I understand that the proposed ACP corridor follows about 19 miles of ridgeline and spurs in West Virginia, and a corresponding 19 miles in Virginia. Construction of a massive pipeline corridor and pipe trench on these narrow ridgelines would require significant "mountaintop removal" excavation to flatten sufficiently to construct and maintain. I request detailed provable and workable Best Management Plans that addresses the use of explosives, the disposal or repositioning of overburden, and storm management, final grading, and revegetating.

4. Local roads will be negatively impacted by heavy machinery and materials yet the mitigation for this is simply to have "Atlantic coordinate with appropriate transportation authorities to assess the need for road repair". (4-401 4.9.6) In addition, the access roads in my nearby Seneca State Forest are heavily used by tourists, which will impact their use. Access roads must all be designed to withstand stormwater erosion.

5. Finally, I am very incensed that logging is already occurring that is related to the ACP. I attach pictures below to that effect, taken on December 30, 2017, near Rt. 66 in the Snowshoe area, behind Par-Mar store, to access property owned by Kermit and Karen Friel, who have signed an easement for ACP. Logging is occurring on that pipeline right-of-way. Where is the stormwater and sediment control permit? The stream in the pictures is a Tier 3 stream tributary of Slatyfork, and it is trout spawning time.

**Response 11:**

**1. DETI has prepared a Blasting Plan for procedures and safety measures that DETI's construction contractors will adhere to while conducting blasting activities required for the construction of ACP. A copy of the current Blasting Plan is provided in the application. Blasting is outside the scope of DEP's authority however DETI has also developed specific blasting procedures in coordination with the appropriate agencies that address pre-and post-blast inspections; advanced public notification; and agencies that address pre-and post-blast inspections; advanced public notification; and mitigation measures for building foundations, groundwater wells, and springs. Use appropriate methods (e.g., blasting mats) to prevent damage to nearby structures and to prevent debris from entering sensitive environmental resource areas.**

**2. See Section A. Response C., and Section A. Response D.**

**3. ACP provided a complete set of comprehensive Erosion and Sedimentation Control plans with the original submittal and have updated the plans. The mitigation designs, provided by ACP, show implementation of the Steep Slope Hazard Mitigation Program in the field during construction and will follow a detailed work flow process provided in Appendix O. In summary, the plans are intended to provide a comprehensive and programmatic approach to address all locations along the pipeline alignment. This includes Incremental Control measures that provide targeted mitigation for steep slope related hazards that are above and beyond the standard erosion and sediment controls necessary to meet regulatory requirements.**

**The proposed ACP route crosses karst terrain in Randolph and Pocahontas counties in West Virginia. DETI has developed and will implement a Karst Terrain Assessment Construction, Monitoring and Mitigation Plan (Appendix J or Karst Plan), which identifies construction and restoration practices in karst areas. This section discusses the best management practices (BMPs) to be utilized for mitigating, remediating, and minimizing impacts to karst features that may be encountered during construction activities. The Karst Plan identifies the relatively flat-bedded geology of the Allegheny Front and Appalachian Plateau provinces formed almost exclusively by the carbonate rocks of the Mauch Chunk and Greenbrier Groups. The procedures outlined in the Karst Plan will be used to avoid and minimize any impact of pipeline construction that present a risk in karst areas. These measures shall apply to any karst feature which allows the unfiltered and unimpeded flow of surface drainage into the subsurface environment. Anywhere that the ACP alignment is within 150 feet of a geologically sensitive karst feature in West Virginia, the WVDEP has been provided or will be provided via Form M Modification site specific mitigation design measures prior to disturbance.**

**Dye testing was used to define the direction of ground-water flow for the mapping associated with this project. All lands on or near limestone karst bedrock were analyzed against the features of the West Virginia Association of Speleological Survey WVASS database. All WVASS ground water trace data was plotted and analyzed in ArcGIS as shown in the attached map. Where significant karst features were noted like Canis Majoris and Piddling Pit each feature was visited, photographed and located. This data was used to fully geo-reference both the published cave maps**

**and the working draft data from Dr. Greg Springer at Ohio University. These locations are also being updated on the master karst database and the separate groundwater trace databases.**

**Excess soil will be spread on site and disturbed areas will be returned to their approximate original slope and contours. No repositioning of overburden or "mountaintop removal" is being proposed for the AP-1 alignment.**

**4. See Section A. Response G.**

**5. The Stormwater section has no jurisdiction over logging operations. Tree cutting does not require a stormwater construction permit as long as stump removal does not take place. However, this information has been forwarded to our Environmental Enforcement office.**

Comment #12: Close water-quality monitoring is required at each stream, river and wetland crossing. Where are the site-specific contingency plans for infractions, spills, etc.?

**Response 12: Water Quality Monitoring is required by the General WV Water Pollution Control Permit No. WV0116815 or EPA's Stormwater Construction General Permit. These permits require BMP's to control runoff from leaving the site.**

**The Spill prevention and Response Procedures are in the SWPPP. DETI will report any noncompliance which may endanger health or the environment to the appropriate contact immediately after becoming aware of the circumstances. If a spill occurs, the USFWS office in West Virginia shall also be contacted along with the West Virginia Division of Wildlife Resources.**

Comment #13: Two of the WV counties through which the pipeline is scheduled to go is heavily karstified. The ACP documents woefully insufficiently address the karst issue.

**Response 13: See Section A. Response D.**

Comment #14: Will there be quick legal action occur when there is an infraction, rather than allowing the company to casually correct things at its leisure, regardless of impending environmental problems?

**Response #14: The DEP Environmental Enforcement (EE) Office will be monitoring the Atlantic Coast Pipeline as often as time and resources allow. EE will remain in contact with DETI, third party inspectors, FERC, etc., for the duration of the project. Additionally, DEP is in the process of hiring additional Inspectors to focus on pipeline activity.**

Comment #15: Invasive species management plan is incomplete and inadequate

**Response #15: A Restoration and Rehabilitation Plan was prepared for the ACP Project to address post-construction restoration and rehabilitation activities. The plan will be implemented in conjunction with the 2013 versions of the Federal Energy Regulatory Commission's (FERC)**

**Upland Erosion Control, Revegetation, and Maintenance Plan (Plan) (FERC, 2013a) and Wetland and Waterbody Construction and Mitigation Procedures (Procedures) (FERC, 2013b) as well as Atlantic's and DETI's other construction, restoration, and mitigation plans (e.g., Spill Prevention, Control, and Countermeasures Plan, Invasive Species Management Plan, and Winter Construction Plan). In addition, where site specific erosion and sediment control requirements are more stringent than the FERC Plan and Procedures, the more stringent requirements will be implemented. The measures described in this plan reflect generally accepted best management practices (BMP) for restoration and rehabilitation of pipeline projects.**

**DETI has developed specific procedures in coordination with the appropriate agencies to prevent the introduction or spread of invasive species, noxious weeds, and soil pests resulting from construction and restoration activities.**

**DETI has also consulted with the appropriate federal or state agencies to develop a project-specific wetland restoration plan. The restoration plan includes measures for re-establishing herbaceous and/or woody species, controlling the invasion and spread of invasive species and noxious weeds (e.g., purple loosestrife and phragmites), and monitoring the success of the revegetation and weed control efforts.**

**DETI will use only forb species that are native to the area or region where they will be planted, to try to source seed from local growers, as available, and to avoid the introduction of non-native and potentially invasive species to the extent practicable.**

**Additional mowing will be completed in the first two years to reduce the height of the weeds and to prevent them from going to seed. This will greatly reduce weed competition. Spot use of herbicides should be an option to control woody and invasive plants.**

**DETI will use mechanical mowing or cutting along their rights-of-way for normal vegetative maintenance. Atlantic and DETI will monitor the rights-of-way for infestations of invasive species that may have been created or exacerbated by construction, restoration, or maintenance activities, and will treat such infestations in consultation with landowners and applicable agencies in accordance with its Invasive Species Management Plan.**

Comment #16: The stormwater permit application for the ACP is incomplete and lacks critical site-specific final mitigation plans or avoidance measures of geologically sensitive areas, including steep slopes, karst terrain, and B2 trout waters.

**Response #16: See Section A. Responses C., Section A. Response D. and Section A. Response J.**

Comment #17: The underground sinks of Clover Creek, which are vital to a native trout population, particularly in the summer dry seasons. My family member has seen trout use these sinks. I'm concerned that blasting will damage the underlying karst and cause these sinks to dry up. What exactly are the mitigation plans or avoidance measures for these impacts?

**Response #17: In accordance with Atlantic's and DETI's *Karst Monitoring and Mitigation Plan*, and in addition to the measures described above, the following procedures will be implemented in areas of karst terrain:**

- **Blasting will be conducted in a manner that will not compromise the structural integrity or alter the karst hydrology of known or presumed habitat for federally listed threatened and endangered species in the subterranean karst environment (e.g. Madison cave isopod).**
- **Excavations will be inspected for voids, openings or other tell-tale signs of solution (karst) activity.**
- **If rock removal intercepts an open void, channel, or cave, construction activities will cease in the vicinity of the void, channel, or cave until a remedial assessment is performed by a qualified geologist or engineer with experience in karst terrain.**
- **Use of explosives will be limited to low-force charges designed to transfer the explosive force only to the rock which is designated for removal (e.g., maximum charge of 2 inches per second ground acceleration).**
- **If the track drill used to prepare drill holes for explosive charges encounters a subsurface void larger than 6 inches within the first 10 feet of bedrock, or a group of voids totaling more than 6 inches within the first 10 feet of bedrock, then explosives will not be used until a subsurface exploration is conducted to determine if the voids have connectivity to a deeper karst structure. The subsurface exploration will be carried out with track drill probes, coring drill, electrical resistivity, or other techniques capable of resolving open voids in the underlying bedrock. If a track drill or coring rig is used, then all open holes will be grouted shut after the completion of the investigation.**

Comment #18: In WV, approximately 14 miles of the proposed pipeline will run through geology with acid-producing sulfide minerals. This assessment does not include the geology of access roads. According to the Final EIS (p 4-32) "Runoff of ARD could alter soil chemistry, affecting revegetation of disturbed areas, rendering areas more susceptible to erosion, as well as potential negative impacts to nearby wetlands, waterbodies, and both terrestrial and aquatic vegetation and wildlife…." Furthermore, "Acid-producing rocks, soil, and ARD could potentially accelerate the corrosion of the steel pipe installed by ACP and SHP." I question the adequacy of the proposed mitigation measures, which also fail to account for a time-horizon analysis as though the plans to apply a cover of sand around the pipe will be sufficient for the duration of the pipeline.

**Response #18: The Environmental Inspectors (EIs) will survey work areas prior to construction for signs of acid-producing materials including sparse vegetation and/or red iron discharges or staining on side slopes. During construction, the EIs will monitor excavation activities and open trenches to identify potential acid-producing formations. The EIs will also monitor stockpiled materials for signs of oxidation and acid drainage. DETI will implement a number of measures to avoid or minimize potential impacts resulting from construction activities in areas containing acid-producing rocks or soils. These include the following:**

- **Segregating the top 12 inches of topsoil or all of the soil to the top of an acid producing layer in the trench, whichever is reached first;**
- **Segregating rock or soil from the top of the acid-producing layer to the bottom of the acid-producing layer or to the bottom of the trench, whichever is reached first;**
- **Segregating rock or soil below the acid-producing layer to the bottom of the trench;**

- **Backfilling the trench with acid-producing materials first to a maximum of 12-inches below the surface;**
- **Placing a cover of sand or other clean material around and over the pipe to avoid corrosion; and/or**
- **Applying lime to the topsoil or replacing a minimum of 12 inches of acid-free topsoil.**

**DETI will attempt to limit the duration of stockpiled materials to 30 days or less in areas that contain acid-producing rock or soils. This will reduce the likelihood that these materials are oxidized and acidic drainage is produced. In addition, implementation of the measures outlined in the Plan and Procedures, such as erosion and sediment controls, will prevent tracking of acid producing materials along the ROW and minimize or avoid impacts on sensitive resources in these areas.**

**Acidic fill materials in the pipeline trench could accelerate corrosion of steel pipe. DETI will install cathodic protection systems at various points along the proposed pipelines to inhibit external corrosion of the underground facilities. The outside of the steel pipe will also be coated with fusion-bonded epoxy that protects the surface of the pipe against corrosion. During operations, DETI will conduct routine inspections and cathodic protection surveys along the pipelines to confirm proper operating conditions consistent with federal requirements for corrosion mitigation.**

Comment #19: I'm especially concerned about landowners and residents whose springs and well water in this karst terrain depends on the stability of the existing karst structure. In my requests below, I ask that ACP do more than just guarantee protections to one landowner along the route but define what these protections are and pay for baseline water monitoring of all landowners within a minimum of two-miles of the pipeline route in the karst terrain of Randolph and Pocahontas Counties.

**Response #19: See Section A. Response D. Baseline Water Quality Monitoring is not required by the General WV Water Pollution Control Permit No. WV0116815 or EPA's Stormwater Construction General Permit.**

Comment #20: The stormwater permit application does not guarantee that it has the sediment and erosion control measures in place needed to prevent chronic and permanent erosion on the steep slopes to be crossed, particularly in the Elk River and Greenbrier River watersheds, particularly with the likelihood of increased epic weather events and increased flooding potential in the region

**Response #20: Streams will be protected by Belted Silt Retention Fence (BSRF), and Rolled Erosion Control Product (RECP). Critical slopes will be protected by BSRF, Turf Reinforcement Mat (TRM), RECP, and slope breakers. Critical slopes include areas that would be prone to slips or sloughing. Special attention will be given to those slopes that are near surface waters. The discharge of soils from failed slopes into surface waters is a serious occurrence and may result in environmental non-compliance.**

**Portions of the AP-1 mainline in West Virginia will be constructed in steep, mountainous terrain. Slope instability in the form of landslides, landslips, or surficial slumping can present a**

**significant hazard to pipeline routing, design, construction, and operation in steep slope areas if proper planning and mitigation is not considered in advance. When routing the ACP, the goal was to do so perpendicularly to topographic contours and to minimize routing on steep slopes to the extent practicable, in accordance with DETI's program for steep slopes, which includes considerations for slips associated with pipeline construction during routing as well as engineering design, preconstruction planning, construction, and post construction.**

**DETI's Best-in-Class (BIC) Program was designed to proactively address slopes greater than 30 percent and greater than 100 feet in length and to identify mitigation measures beyond standard practices. Details of the BIC Program are provided in Appendix O and Section 15.13 of this SWPPP.**

Comment #21: High quality (Tier 3) waters will be crossed and B2 Trout Waters Impacted and must undergo an anti-degradation review as required by the permit.

**Response #21: An anti-degradation review was completed for this permit. The only Tier 3 waterbody associated with the Project in West Virginia is Slaty Fork which is crossed by an access road (ID AR #05-001-C 009.AR1) near its headwaters. DEP has requested and DETI has agreed to implement enhanced BMPs exceeding minimum requirements to reduce or eliminate potential impacts to the Tier 3 waterbody.**

**Also, see Section A. Response A., and Section A. Response J.**

Comment #22: A Request for Special Permit Conditions

1) Require Financial Risk Assurance Bonds Upfront:
2) Do not allow construction in WV until all state permits for VA and NC are approved:
3) Require the same high-quality standards as the U.S. Forest Service across all private and state lands of the ACP:
4) Require Atlantic to pay for baseline water testing and monitoring:
5) Conduct complete aquatic baseline assessments:
6) Follow Your Own Rules:

**Response #22:**

1. **A requirement for Financial Risk Assurance Bonds is not required by the General WV Water Pollution Control Permit No. WV0116815 or EPA's Stormwater Construction General Permit.**
2. **It is not required that other state permits are obtained before construction can begin in West Virginia, it is only required that they obtain a WV Water Pollution Control Permit No. WV0116815.**
3. **All work shall be completed in accordance with DWWM standards, the West Virginia Department of Environmental Protection regulations and all other applicable, federal and state requirements. The BIC program is intended to incorporate the permit requirements and then exceed these regulatory standards, in order to mitigate for potential erosion and sediment discharges.**

4. **Baseline water testing and monitoring is not required by the General WV Water Pollution Control Permit No. WV0116815 or EPA's Stormwater Construction General Permit.**
5. **Aquatic baseline assessments are not required by the General WV Water Pollution Control Permit No. WV0116815 or EPA's Stormwater Construction General Permit.**
6. **This plan was prepared in accordance with guidelines for the West Virginia General Water Pollution Control Permit for Stormwater Associated with Oil and Gas Related Activities (Permit No. WV0116815).**

Comment #23: I have been reading about the Atlantic Coast Pipeline that will cut a huge swath through the State of West Virginia. My conclusion is that there are not enough safeguards spelled out in the ACP stormwater and sediment control permit. For one, it fails to protect geologically sensitive areas. Also, it fails to mandate best management practices for stream bank stabilization. And worst of all, it does not require monitoring of water quality.

**Response #23: DETI's stormwater and sediment control permit was completed in accordance with DWWM standards, the West Virginia Department of Environmental Protection standards and regulations and all other applicable, federal and state requirements. Also see Section A. Response D. Monitoring of water quality is not required by the General WV Water Pollution Control Permit No. WV0116815 or EPA's Stormwater Construction General Permit. BMP's are required which are designed to avoid the mitigation of pollutants from the discharged area.**

Comment #24: I am writing in support of the Atlantic Coast Pipeline and to urge the West Virginia Department of Environmental Protection to grant approval of this game-changing project.

The ACP will be huge for the economy and prosperity of our workers in West Virginia and around the region. Not only will it create jobs and economic benefits, it will help West Virginia continue to move toward cleaner forms of energy and more energy diversity.

That's why my fellow West Virginians and I support this infrastructure project. And I could not in good conscience support the ACP if I thought it would be unsafe or environmentally damaging. The exhaustive reviews at both the federal and state levels have shown that the Atlantic Coast Pipeline team is taking every precaution for environmental safety and protection.

When it comes to streams and rivers, the ACP project team has reviewed each crossing to ensure the chosen construction method is appropriate given the site-specific characteristics of that stream. The ACP's stream and wetland crossing techniques and pipeline construction methods meet state and federal requirements designed to protect water quality.

I believe West Virginia truly needs this historic project, and I believe in the careful review the project is undergoing. I ask that you approve the ACP.

**Response #24: The DEP appreciates your interest in the Atlantic Coast Pipeline Project and your comments regarding some of the purported economic, and water crossings aspects of the project.**

Comment #25: The Independent Oil and Gas Association of West Virginia (IOGAWV), represents nearly 600 companies engaged in the extraction and production of natural gas and oil in West Virginia and the companies and individuals which support those extraction activities. As its executive director, I write to support the approval of the Atlantic Coast Pipeline (ACP) and necessary permits needed for the construction of the pipeline.

IOGAWV is aware these public meetings are critical steps in getting final certifications for the Atlantic Coast Pipeline project. IOGAWV firmly believes the proposed Atlantic Coast Pipeline is a vitally important infrastructure project for West Virginia producers and West Virginia. Energy efficient, clean burning natural gas produced in West Virginia will, in part, provide the much needed additional supplies of natural gas for the south's public utilities that will enable them to meet the ever growing energy demands of the millions of residential, commercial and industrial customers they serve.

Natural gas produced in West Virginia and transported across the ACP will be the catalyst to creating much-needed investment, tax revenue and jobs that are critical to the WV economy. In addition, natural gas is clean, abundant and reliable. Construction of the Atlantic Coast Pipeline is a step towards energy independence for our country. The Atlantic Coast Pipeline is a crucial infrastructure project that has had nearly three years of review and input by various federal, state and local bodies, and will have a positive impact on our communities, the economy and ultimately the environment.

IOGAWV urges you to not delay this very necessary pipeline project.

**Response #25: The DEP appreciates your interest in the Atlantic Coast Pipeline Project and your comments.**

Comment #26: I am writing to support approval of Stormwater Pollution Prevention Plan (SWPPP) and General Water Pollution Control Permit for the Atlantic Coast Pipeline (ACP). I believe this project will play a crucial role in supplying clean and efficient energy and will be built and operated in a way that safeguards our natural resources.

I am confident that the SWPPP measures for the protection of waterbodies and wetlands, and for construction on steep slopes and in karst terrain, will ensure that construction and operation of the pipeline do not negatively impact these important natural resources. The plan also includes protocols for crossing streams, rivers and wetlands. These protocols will protect water quality, as well as fish and other aquatic organisms.

Dominion Energy, the partner in charge of construction and operation of the ACP, has developed best-in-class measures for work on steep slopes to meet the challenge of pipeline construction in the mountainous terrain of West Virginia. The best-in-class measures go above and beyond federal and state regulatory standards to address proactively sediment and erosion control on steep slopes and areas with landslide hazards. These measures have been integrated into the General Permit and SWPPP.

The pipeline's developers also hired karst experts to assist with surveying and understanding the karst terrain in West Virginia. Surveys have been conducted to avoid karst features where possible. Measures will be taken to avoid any impacts to caverns, sinkholes and springs. The pipeline is engineered, through its design and materials, to withstand sinkhole formation without compromising pipe integrity or safety. In addition, a karst expert will be on site during construction in karst areas. There are more than 4,100 miles of natural gas transmission lines in potential karst areas of the Mid-Atlantic, and this provides further confidence that the ACP can be built and operated in such terrain in a safe and environmentally sound manner.

Further, the ACP's developers will restore the ground surface after construction as closely as practicable to original contours. This work is aimed at restoring natural overland water flow patterns, aquifer recharge and drainage patterns. Restoration measures will include the re-establishment of final grades and drainage patterns, as well as the installation of permanent erosion and sediment control measures to minimize post-construction erosion and to control post-construction storm water runoff. Rights-of-way will be replanted with permanent vegetative cover within the timeframes set forth in the WVDEP requirements. These replantings will be considered successful only when vegetation is uniform, mature enough to survive and able to inhibit erosion. Dominion Energy is committed to constructing the entire ACP project, including both the pipeline and associated facilities, in a manner that will minimize sedimentation, prevent future erosion, and protect waterbodies, wetlands, fish and other aquatic organisms.

Thank you for considering my views on the SWPPP and General Permit for the pipeline. I urge you to issue them at the end of your thorough and timely review. These approvals will help move this urgently needed energy infrastructure nearer to construction.

**Response #26: The DEP appreciates your interest in the Atlantic Coast Pipeline Project and your comments regarding the SWPPP/GPP, Karst Areas, and ACP restoration.**

## SECTION C. Public Comments and Responses

Comment 1: The West Virginia DEP is not serving to protect West Virginia residents and property from damage associated that will occur with storm water runoff caused by the construction of the ACP. This concern is based upon three points, the July 2017 flooding events in McDonald, Pennsylvania. My review of storm water project mitigation techniques and best practices based upon my working knowledge as a professional engineer, and as a member of my local town's commission's Environmental Quality Board, consulting upon MS4 storm water management practices. And also my personal experience since '93 with mountain flood events encountered at my cabin along Shaver Fork between Elkins and Parsons. You may not know, but there were recent flooding events this summer in McDonald, Pennsylvania, southwest corner of PA, that offer a catastrophic picture that should not be repeated with the ACP Pipeline construction. The McDonald flooding events are related to construction of Pennsylvania Turnpike's construction of the southern beltway project. Best management practices BMP based upon two year, 24 hour storm requirements proved to be willfully inadequate as reported by both the Pittsburgh Post-Gazette and Washington Observer Reporter. As a result of this prolonged drain event, many homes and businesses were severely damaged, some condemned. Particularly disturbing, is that this construction impacted hills, not the steep mountain slopes that will be traversed by ACP. The McDonald situation is very real for me as I worked in this community building Habitat for Humanity homes. To witness such personal home destruction is heartbreaking. In my home state of West Virginia, given destruction given the flood plain occupancy and a less robust economic setting would be devastating. Erosion controls involving high efficiency siltation fencing and hay bales are totally inadequate.

If BMT --- BMP measures failed in McDonald which has a less deep sloped terrain and less extreme rain events than which will be encountered in ACP construction, then BMP for the ACP is totally inadequate. WVDEP should enact two measures to effectively protect the public. One, is the establishment of an emergency escrow fund. Number two, establish continuous monitoring of water quality and storm water mitigation measures over streams which --- streams that will be crossed. It's two pronged approach here, one to continuously monitor the water flow and quality and reporting stations installed at stream crossings such as stream gauges and turbidity meters. Also, to initiate a tracking system to record any submitted information as well 1 as the response, actions and results of such actions. Both systems should be in place prior to any construction groundbreaking activity to identify and document storm water mitigation compliance and non-compliance issues.

Number one, the much steeper slops which will allow storm water to gather and develop greater force due to gravity and length of slope that will overcome --- overcome siltation fencing and hay bales.

Number two, the tier three high quality streams that will be --- that provide drinking water to many local residents.

Number three, time of construction means nothing to storm water management practices in the mountains. Mother Nature doesn't take a vacation. And, the hazardous materials that will be swept away by runaway storm water. So, in conclusion, I just want to thank you all very much and again suggest mitigation that can be done by two forms that being the establishment of an escrow fund as well as stream monitoring.

**Response 1:** **Number 1 - All non-impervious areas in the ROW disturbed by the Project will be restored to their approximate original conditions and their preconstruction contours. Existing impervious areas disturbed by the Project will be restored with similar construction materials and to approximate original conditions, and contours. In addition, temporary and permanent slope breakers or right-of-way diversions will be constructed at the DWWM required spacing. Temporary and permanent slope breakers are intended to reduce runoff velocity and divert water off the construction right-of-way thereby limiting the sub-watershed sizes and reducing the slope length compared to preconstruction configurations.**

**Number 2 - The only Tier 3 waterbody associated with the Project in West Virginia is Slaty Fork which is crossed by an access road (ID AR #05-001-C 009.AR1) near its headwaters. DWWM has requested and DETI has agreed to implement enhanced BMPs exceeding minimum requirements to reduce or eliminate potential impacts to the Tier 3 waterbody.**

**Number 3 - DETI's Erosion and Sediment Control Plan was designed to control project runoff and sedimentation, while providing protection to the aquatic resources within the Limits of Disturbance (LOD) and adjacent to the LOD. The controls include construction procedures: such as minimizing the amount of disturbance, proper grading and restoration, diverting/protecting stream flows during stream crossings, and operating efficiently. DETI's construction techniques are consistent with the State's construction stormwater requirements. By implementing the procedures, sequencing, and erosion BMPs listed in the Erosion and Sediment Control Plan impacts to the states aquatic resources should be minimal during construction. Site inspections will also occur after the project area has been restored and reseeded. If any BMPs are not properly functioning – they will be repaired or replaced to provide the appropriate sediment control and stream protection, minimizing impacts to water quality. Please also see Section A. Response A.**

**Enacting or requiring the establishment of an emergency escrow fund is outside of the scope of the general permit and DEP's overall regulatory authority.**

Comment 2: I have heard a lot of people talk about environmental protection and one of the things that stuns me is this permit. This permit there is no monitoring activities associated with this permit at this time. Now, monitoring may be requested by the Director and it really should be requested by the Director since these constructions will happen for more than one year.

**Response 2:** **The DEP Environmental Enforcement (EE) Office will be monitoring the Atlantic Coast Pipeline as often as time and resources allow. EE will remain in contact with DETI, third party inspectors, FERC, etc., for the duration of the project.**

**During construction, the site will be protected using state approved BMPs including but not limited to compost filter socks, silt fence, belted silt fence, ditches, rock checks, sumps, culverts and water bars. The BMPs will be monitored and repaired/replaced when they are under performing or no longer functioning. Hillside erosion will be controlled using water bars, ditches, culverts, seeding/mulching, erosion control blanketing, hydroseeding and hydro-mulching. Water quality**

**will be protected by incorporating the BMPs referenced above and through monitoring by the onsite Environmental Inspector.**

**The Project entails land clearing, surface construction, and excavation approximately 10 feet below ground to install the pipeline. The nature of this construction project is such that there is minimal risk of encountering an aquifer along the vast majority of the alignment. Where groundwater is encountered in the shallow subsurface (e.g., perched aquifers, flood plains near rivers and streams), the backfilled excavation will convey water to allow it to resume its natural flow path and will not disrupt the major hydrologic balance. DETI has identified the assessment, avoidance, mitigation, and monitoring that will be applied to this Project to protect hydrologic resources. By planning and execution of construction practices, it is believed that groundwater will not be impacted.**

Comment #3: As I understand, your requirements say that geologically sensitive areas should be avoided by pipelines due to their potential for instability. The region which is being proposed to lay this huge 42-inch pipeline is predominantly karst limestone and dolomite which is characterized by underground drainage systems with sinkholes and caves. This is not the type of terrain that your requirements allow. The sheer height of some of the mountains on the proposed route from Millcreek to near Helvetia are going to cause landslides and huge amounts of sediment to enter our streams and ultimately the Tiger River where I live. It's also the water source for the City of Elkins. In case you didn't know, sediment is the worst problem for fish and macro invertebrates in our streams. Another problem is that bank stabilization should be done with natural channel design method, not the riprap that is being proposed in this permit. These permits require tier three stream crossings to have antidegradation review. I would like to see that in print that it is required and I insist that monitor devices for flow and turbidity be installed at all stream crossings of this pipeline and that provisions be made for anti-degradation review.
The Department of Environmental Protection should carefully monitor how these pipelines are built, how the trees are removed, the time of year of construction, and especially sediment control and mitigation for storm water events. Don't waive your right to approve this, see that Dominion follows your regulations.

**Response #3: Karst - The proposed ACP route crosses karst terrain in Randolph and Pocahontas counties in West Virginia. DEP is very aware of the concerns raised and the desire for enhanced karst protections.**

**DETI has developed and will implement a Karst Terrain Assessment Construction, Monitoring and Mitigation Plan (Appendix J) of the SWPPP, which identifies construction and restoration practices in karst areas. In accordance with this plan, erosion and sediment controls (ESC) will be installed prior to construction along the edge of the ROW and in other work areas upslope of known sinkholes or other identified karst features with a direct connection to the phreatic zone of the karst. DETI will implement multiple avoidance and protective measures during construction to prevent impacts to karst and water resources and minimize alteration of flow patterns. Karst terrain is identified on the Construction Alignment Sheets, Drawing Set #1, as "geologic sensitive areas.**

**DEP is very aware of the concerns raised and the desire for enhanced karst protections. DEP staff made a thorough review of the Karst Terrain Assessment Construction, Monitoring and Mitigation Plan which resulted in six (6) enhancements specific to the monitoring and mitigation plan that are**

**specified to be addressed either in the plan or by DETI action. DEP will periodically have agency geologists onsite during construction and the karst management plan requires DEP be contacted when unanticipated karst features are encountered.**

**Best Management Practices in the Erosion and Sediment Control Plan, and the Karst Terrain Assessment Construction, Monitoring and Mitigation Plan are designed to prevent uncontrolled releases to surface waters and karst features in order to protect the underlying aquifer. DETI will deploy karst experts, as on-site inspectors, during all phases of construction in karst terrain to monitor karst resources, identify potential connectivity to the subterranean environment, prevent uncontrolled surface water releases, prevent impacts to karst features and ensure that prescribed measures (referenced above) are in-place to protect karst features, surface water and groundwater resources. Known public or private drinking water wells within 150 feet, Well Head Protection Areas and Source Water Protection Areas have been identified.**

**Finally, while much has been assembled in the way of enhanced karst protection, DEP has no specific authorities in the stormwater construction permit to protect karst more than other others. One must also bear in mind that numerous water, sewer and other smaller pipelines have been constructed in the state with no known lasting impacts to karst systems/features.**

**Regarding landslides, in recent years DEP has responded to numerous instances of landslides on pipelines and other oil & gas construction related projects. West Virginia's precipitation rates, clay soils, and steep terrain are key factors contributing to landslide development. In response to these occurrences, in 2016 DEP added Chapter 8 to its Best Management Practices Manual to include information identifying West Virginia's slip prone soils and, in the case of pipelines, to require bleeder drains in every other trench plug. As part of its registration application DETI has addressed slope stability for the project in the Stormwater Pollution Prevention Control Plan. DETI identifies potentially problematic areas and soils and presents typical details to be employed during construction to minimize the risk of earth movement and specifies the use of these mitigation measures at predetermined locations along the pipeline. The mitigation measures are consistent and go beyond what is recommend in DEP's updated BMP Manual.**

Comment #4: Perhaps you'd been to Pickens, I hadn't actually planned to say this, but if you had been to Pickens of Helvetia you know --- if you go into Millcreek you know what the hills look like and that's where they're going to run that pipeline. You might not know that the Pickens Helvetia area is the second cloudiest spot in the United States --- the contiguous United States outside of the Olympic Peninsula which is a great place to visit if you want to go be a tourist somewhere. And the amount of vegetation, the amount of --- the number of trees that are going to be destroyed to put this pipeline in are, I believe --- and I said this in my other comments, written and otherwise. That they're going to interfere with the cloud production and that's going to interfere with the precipitation. That's going to interfere with our water.

These --- what I wanted to talk about was access roads. These access roads are going to cut across the hills. Sometimes they're streets, sometimes they're roads, sometimes they're gravel, sometimes they're old logging roads. They are animal trails in some cases. They are going to be widened to accommodate this equipment into the pipeline site itself.

**Response #4: See Section A. Response B. and. Section A. Response G.**

Comment #5: First, final mitigation or avoidance measures for geologically sensitive areas are not included and are still being developed. Second, site specific designs are still being developed for locations with unique geo-hazards and the potential for instability. Third, the ACP wants to use riprap instead of the DEP's preference for natural stream channel design techniques. Fourth, high quality tier three waters will be crossed. We need an anti-degradation review as required by the permit. Is that going to happen? I don't know. Fifth, there's no water quality monitoring proposed. The bare minimum if this goes through should be something like what the U.S. Geological Survey and the Virginia DEQ are doing at their proposed pipeline crossings, which would be installing and maintaining a network of water quality monitors that measured conditions before, during and after construction of pipelines. We need to be proactive in preventing the degradation of our water instead of the usual reactive approach. Our slopes are too steep to handle this construction without having massive erosion and sedimentation.

**Response #5: See Section A. Response D., Section A. Response C., and Section A. Response A.**

**Following initial stream bank stabilization, Atlantic and DETI will restore the banks of waterbodies to preconstruction contours to the extent practicable. In steep-slope areas, regrading may be required to reestablish stable contours capable of supporting preconstruction drainage patterns. Riparian areas will be revegetated with native species across the entire width of the construction corridor. Restoration of riparian areas will be designed to restore stream bank integrity, including both shore crossings up to the ordinary high water mark; withstand periods of high flow without increasing erosion and downstream sedimentation; and include temporary erosion control fencing, which will remain in place until stream bank and riparian restoration is complete. Permanent bank stabilization and erosion control devices (e.g., natural structures, rock riprap, and/or large woody debris) will be installed as necessary on steep banks in accordance with permit requirements to permanently stabilize the banks and minimize sediment deposition into waterbodies.**

**Application of riprap for bank stabilization will comply with USACE, or its delegated agency, permit terms and conditions. Natural stream channel design is required in the WV specific conditions of the 401.**

**Water Quality Monitoring is not required by the General WV Water Pollution Control Permit No. WV0116815 or EPA's Stormwater Construction General Permit.**

Comment #6. We need to adhere to the laws requiring anti-degradation reviews and there needs to be clear designs ahead of time. The fact that DEP has still not got complete designs from these sites and yet they're holding a hearing on water pollution permit seems to me just if not outrageous, at least pretty ridiculous and embarrassing perhaps. DEP has to include detailed water quality provisions that are enforceable, stringent and monitored.

**Response #6: See Section A. Response A., Section A. Response H.**

Comment #7: there needs to be restoration, establishment, enhancement and/or in certain circumstances, preservation of streams and other aquatic resources for the purposes of offsetting adverse impacts. These and other final mitigation or avoidance measures of geologically sensitive areas are not included in the application and are still 1 being developed by geotechnical engineers. This is not substantive enough to ensure that our water sources will be protected if the permit is granted with this insufficient application. Site specific designs are still being developed for locations with unique geo-hazards and great potential for instability. The use of riprap is proposed instead of WVDEP's preferred method of restoration using natural stream channel design for stream bank stabilization. High quality tier three waters will be crossed and must undergo an anti-degradation review as required by the permit. Also, no water quality monitoring is proposed. Monitoring may not be required, but it can be requested. I am requesting it right now for the people. Monitors should be installed at sensitive stream crossings similar to the efforts being conducted along proposed pipeline routes in Virginia. There are nine stream crossings. Nine. This monitoring effort must collect baseline water quality data. And if the pipeline is constructed, monitor water quality in these streams before, during and after pipeline construction. This data must be publicly available. In near real time via USGS National Water Information 1 System web interface.

**Response #7:**

**See Section C. Response 5.**

Comment #8. There's land farming bioremediation, there's going to be overburden and spoil relocation from blown up mountains, which they are proposing to blow up 10 to 60 plus feet to put down this pipeline.

These pipelines are also going to be on soil types from these mountains that are prone not only to erosion, because it's acidic soils. But also landslides.

**Response #8: Best Management Practices established in the Erosion and Stormwater Pollution Prevention Plan with Site-Specific Erosion and Sediment Control Plan are designed to minimize adverse impacts due to sedimentation and potential environmental pollutants resulting from stormwater runoff and to reduce potential sediment and environmental pollutant runoff after Project completion.**

**Please see Section A. Response F.**

Comment #9: And there are no adequate engineering controls which have been developed and described which can prevent serious erosion and environmental degradation of a lot of the steep slopes that the pipeline has proposed to traverse.

**Response #9: Please see Section A. Response C.**

Comment #10: Dominion's Atlantic Coast Pipeline application does not meet the requirements of West Virginia DEP's oil and gas Construction Stormwater Permit. Final mitigation and avoidance measures for geologically sensitive areas are not included. Site-specific designs for locations with unique geohazards or potential instability are not completed. Dominion proposes to use riprap

instead of West Virginia DEP's preferred method, natural stream channel design techniques. No water quality monitoring is proposed by Dominion. I'm requesting West Virginia DEP to require all necessary permit data be submitted prior to evaluating the permit application.

**Response #10: See Section C. Response 5.**

Comment #11: I'm requesting that West Virginia DEP's technical staff be allowed to conduct a thorough review of the stormwater permit, including specific measureable limits in the permit to protect waters, and provide immediate cease and desist triggers for violations that degrade water quality. The ACP has routed intention by Dominion over several large coarsed areas in Randolph and Pocahontas Counties, inclusive of Elk River, Clover Lick Creek and 16 their tributaries. The Elk River sinks underground in various spots along the Old Field, Big Spring and Slatyfork branches continuing through the Dry Fork section down to Elk Springs. Similarly, Clover Lick Creek sinks underground in various spots. The neighboring springs that feed its waters are beautiful. It is evidence that ground waters and surface waters interface throughout these areas. Complete studies have not been done. The 1997 dye tests listed in FERC's final EIS are a literature search for information, not an assessment of the water flows through the region. The thermal formal dye testing with public notification should be done to determine water flow in connection to the private wells, springs and surface waters prior to issuing the water permit.
Dominion has identified 8.6 miles of bedrock and karst that they have requested permission to blast. FERC's EIA documented that Dominion's karst mitigation plan was incomplete and that additional data was needed. The probability of contaminating private drinking water, springs, surface water and ground water is most acute at Clover Lick, where the steepness of the pipeline is one of the two places where FERC's EIS considered landslides and spoils contamination to be unavoidable given Dominion's proposed construction practices.
The placement of the ACP on Clover Lick Mountain, along Clover Lick Creek, and across the Greenbrier River provides a perfect source for contamination affecting many residents. No engineer would intentionally select the route along Clover Lick Mountain and Clover Lick Creek given slopes greater than percent, dropping onto karst typography, following the trout stream with numerous springs and underground sinks, down to the Greenbrier. Section 2.19 of requirements governing water quality standards define trout waters as waters sustaining around trout populations. Excluded are waters which receive annual stockings of trout that do not support year-round trout populations. Appendix A of West Virginia Code 47-2-4 lists B2 trout waters --- listing B2 trout waters clearly states this list contains known trout waters, and is not intended to exclude any waters which meet the definition in Section 2.19.

Clover Lick Creek supports a breeding population of brook trout. My husband and others have fished its waters and can attest to the fact shock sampling of the creek confirmed trout population, brook trout presence.

As stated before, as Dominion has not completed the necessary surveys of aquatic life, their application should not be considered until all of the required studies and information is submitted. I am requesting that Clover Lick be properly labeled as the trout water it is. Comment: Furthermore, I am requesting water quality monitoring be required with monitors installed at

sensitive stream crossing, similar to those required in Virginia along the pipeline route. As a tier three waters - and that tier three waters require antidegradation review.
I'm requesting that a maximum ten NTU turbidity limit be included for Clover Lick Creek, as research documents adverse effects on trout when turbidity increase ten NTUs above baseline.

**Response #11:**

**Please see Section A. Response A., and Section A. Response D.**

**Potential impacts to high quality streams (such as trout streams) are reduced or eliminated by using instream diversions during construction, preforming constructing activities during low flows, avoiding the streams during seasonal restrictions, and using more stringent E&S BMPs around the resources. The streams will be restored to preconstruction conditions by using approved construction techniques. All stream banks are immediately stabilized and restored as soon as the pipeline is installed and the temporary crossing is removed.**

**The only Tier 3 waterbody associated with the Project in West Virginia is Slaty Fork which is crossed by an access road (ID AR #05-001-C 009.AR1) near its headwaters. DEP has requested and DETI has agreed to implement enhanced BMPs exceeding minimum requirements to reduce or eliminate potential impacts to the Tier 3 waterbody.**

**A turbidity and sedimentation analysis is not required by the General WV Water Pollution Control Permit No. WV0116815 or EPA's Stormwater Construction General Permit.**

**To protect stream integrity, prevent degradation and soil loss, during construction, DETI proposes to install and maintain erosion and sediment control BMPs that are identified on the E&S plans. These BMPs include silt fence, belted silt fence, super silt fence, compost filter sock, diversion berms, water bars, broad-based dips, aerial stream and wetland crossings, erosion control blanketing, hydraulically applied seed, enhanced seeding mixes, and landslide mitigation techniques. These devices protect the stream from sediment loads, help reduce turbidity, and are used throughout the region for all types of construction projects, including pipeline construction.**

Comment #12: And we're here to talk about a stormwater permit, a blanket permit for more than 2,500 acres of bare, denuded land that they're going to try and cover up with some seed mixes. And you know what? It's all going to be like a spread of invasive species. Japanese stiltgrass, garlic mustard, aquatic invasives. And this has not been addressed. This is not going to be addressed by the sewer and water permit. There are a full range of cumulative impacts that that 401C water permit review would have seen to.

...talks about the sinks that the trout depend on during the dry season. And the blasting that's going to take place within a mile of these sinks. And you know, what mitigation measures are there when that underground rock gets cracked and the water dries up in the sink?

As part of the permit conditions, I'd like to ask, even if the DEP does approve the stormwater permit, that the DEP not allow any clearing or construction on the pipeline route until all of the permits in Virginia and North Carolina are approved.

And I have one more really important comment. And that is the forest service has put together some special use permit conditions that are really rigorous. And there are high water quality control standards as part of the forest services conditions. And I ask that the DEP, as part of my wish list, follow and have all of this same high four service standards, including equipment specifications for steep slopes, adjustments to stream buffers, installing 12-inch diameter compost filter socks. And we want to see those site specific designs for steep slopes.

Require the pipeline developer to meet newer requirements for a stormwater permit. Don't give them a pass. Don't approve their permit application before it's complete. Pocahontas County is one big geologically sensitive area. You and you alone have the authority to require the developers plans for minimizing and mitigating impact to geologically sensitive and unstable areas before you approve their permit. Before. You have the power to require water monitoring at stream crossings. Please use your power. This land is your land. This land is your water. The DEP's motto is promoting a healthy environment. First step, enforce your own rules. Thank you.

**Response 12:** **A Restoration and Rehabilitation Plan was prepared for the ACP Project to address post-construction restoration and rehabilitation activities. The plan will be implemented in conjunction with the 2013 versions of the Federal Energy Regulatory Commission's (FERC) Upland Erosion Control, Revegetation, and Maintenance Plan (Plan) (FERC, 2013a) and Wetland and Waterbody Construction and Mitigation Procedures (Procedures) (FERC, 2013b) as well as Atlantic's and DETI's other construction, restoration, and mitigation plans (e.g., Spill Prevention, Control, and Countermeasures Plan, Invasive Species Management Plan, and Winter Construction Plan). In addition, where state specific erosion and sediment control requirements are more stringent than the FERC Plan and Procedures, the more stringent requirements will be implemented. The measures described in this plan reflect generally accepted best management practices (BMP) for restoration and rehabilitation of pipeline projects.**

**DETI has developed specific procedures in coordination with the appropriate agencies to prevent the introduction or spread of invasive species, noxious weeds, and soil pests resulting from construction and restoration activities.**

**DETI has also consulted with the appropriate federal or state agencies to develop a project-specific wetland restoration plan. The restoration plan shall include measures for re-establishing herbaceous and/or woody species, controlling the invasion and spread of invasive species and noxious weeds (e.g., purple loosestrife and phragmites), and monitoring the success of the revegetation and weed control efforts. Provide this plan to the FERC staff upon request.**

**DETI proposes to use only forb species that are native to the area or region where they will be planted, to try to source seed from local growers, as available, and to avoid the introduction of non-native and potentially invasive species to the extent practicable.**

**Additional mowing is required in the first two years to reduce the height of the weeds and to prevent them from going to seed which will greatly reduce weed competition. Spot use of herbicides should be an option to control woody and invasive plants.**

**DETI will use mechanical mowing or cutting along their rights-of-way for normal vegetative maintenance. Atlantic and DETI will monitor the rights-of-way for infestations of invasive species that may have been created or exacerbated by construction, restoration, or maintenance activities, and will treat such infestations in consultation with landowners and applicable agencies in accordance with its Invasive Species Management Plan.**

**Please see Section A. Responses D., Section A. Response F., and Section A. Response J.**

Comment 13: These areas that you're proposing to go through, I don't know if anyone has walked them or if anyone has been to them. There's a river, I think you said, that disappears underground for six miles. There's a cave about every 100 feet. Eight rivers start in this county. All water flows out of this county. This is the value of being here, is water. That is our value.

Suffocating sediment release from construction into waterways, the compressor stations in Lewis County, and Lewis County will be releasing methane. Parts of this pipeline are also going to be built on acidic soils, which is going to put the pipeline at risk of erosion. Or it's going to be built on soils that are prone to landslides.

This is hundreds and thousands of soil from these mountains getting blown up. This is hundreds of thousands of cubic yards that they are considering. People want to call it mountain top removal because they're not blowing up the mountains to get to the coal seams. I don't know what else to call it. It is mountain top removal. You're blowing up ridge tops to lay down a pipeline. It's insanity.

Access roads on slopes along the mountain, along the ridgelines of the mountains are also putting trout streams at risk. The construction corridor on ridgelines in West Virginia could be 125 feet or more. And this is going to be built --- 15 percent slopes alone can be prone to landslides. And they're wanting to put down this pipeline that's listed as much steeper than that. Blowing up mountains also takes away natural water filtration systems. And it's going to completely redirect the groundwater in some areas. And we've already talked about the karst stream here that needs site-specific review, as well as other geologically sensitive areas that have not yet been finished getting reviewed. So why are we approving anything if they're not done? We shouldn't be helping Dominion do the job that they should be doing themselves in getting these site-specific tests done.

I also just want to say real quick, this involves the Monongahela National Forest Watershed, the Big Ridge, and George Washington National Forest, Potomac River, Shenandoah River, the Kanawha watershed, Seneca State water --- I mean, Seneca state forest, the Greenbrier River, Buchanan River, West Fork River, loss of shade for the trout, the Indiana bat, the long-eared bat, the brown bats that are all endangered, the endangered salamanders, clubshell and snuffbox mussels are also endangered, running buffalo clover, pogonias. All of this is at risk for putting these pipelines down.

**Response 13: Please see Section A. Response D, Section A. Response C., Section A. Response F., and Section A. Response G.**

**Best Management Practices in the Erosion and Sediment Control Plan, and the Karst Terrain Assessment Construction, Monitoring and Mitigation Plan are designed to prevent uncontrolled**

**releases to surface waters and karst features in order to protect the underlying aquifer. DETI will deploy karst experts, as on-site inspectors, during all phases of construction in karst terrain to monitor karst resources, identify potential connectivity to the subterranean environment, prevent uncontrolled surface water releases, prevent impacts to karst features and ensure that prescribed measures (referenced above) are in-place to protect karst features, surface water and groundwater resources.**

**As required under Section 7 of the Endangered Species Act of 1973 (as amended), projects that require Federal authorization must undergo consultation with the United Fish and Wildlife Services (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) to evaluate that any action they authorize is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. DETI has consulted with the USFWS West Virginia Ecological Services Field Office to identify federally listed endangered, threatened, and proposed species as potentially occurring in the Project area. Nine federally listed species have been identified as having the potential to occur within the ACP footprint:**

1. **Cheat Mountain salamander;**
2. **Indiana bat;**
3. **northern long-eared bat;**
4. **little brown bat (not federally listed, but included in consultations and surveys at the request of the USFWS);**
5. **clubshell mussel;**
6. **snuffbox mussel;**
7. **running buffalo clover;**
8. **small whorled pogonia; and**
9. **Virginia spirea.**

**DETI has prepared a Biological Assessment (BA) at the request of the FERC, to initiate formal consultation with the USFWS and NOAA Fisheries. As part of consultations with the USFWS, species-specific field or habitat surveys have or will be completed for several species as identified by USFWS West Virginia Ecological Services Field Office. Additional steps for avoidance, or mitigation will be discussed as part of the consultations with the USFWS as applicable.**

**Additionally, the United State Forest Service (USFS) maintains Regional Forester Sensitive Species (RFSS) lists for the Monongahela Nation Forest (MNF) in accordance with FSM 2670.32, for the management of sensitive species. DETI has prepared a Biological Evaluation (BE) to examine potential impacts on the RFSS on USFS lands. Several RFSS listed species were evaluated as part of the BE. As part of consultations with the MNF, species specific field or habitat surveys have or will be completed for several species as identified by the MNF. Additional steps for avoidance, or mitigation will be discussed as part of the consultations with the MNF as applicable.**

**The West Virginia Division of Natural Resources (WVDNR) does not have a state threatened and endangered species program, but defers to the USFWS' list of federally listed threatened and**

**endangered species. In accordance with the West Virginia Mussel Survey Protocols (WVMSP), all native freshwater mussels are protected in the state.**

Comment 14: Our pristine creeks and rivers, clean water and steep, rocky terrain is no place to allow the oil and gas industry to construct this unneeded monstrosity of a pipeline. Specifically, I'm worried about the proposed route over Michael Mountain. It's steep and rocky. Like much of the terrain of Pocahontas County along the proposed route, stormwater and sediment control is of huge concern, not only during construction, but from then on. The massive rainfall events we've seen in Pocahontas County in just recent years have caused major destruction. Insert excavated steep slopes with no vegetation to absorb and slow water, and that will lead to serious runoff and sedimentation issues.

Also, specifically, I'm concerned about the proposed crossing of the Greenbrier River. It's still unclear how the ACP plans to safely secure a 42-inch pipe under the raging water of the Greenbrier River at flow stage. And that's just regular flow stage, not to mention a 100-year flood, not to mention a 500- year flood. Not to mention the threat of rocks, logs, and debris building up against it potentially dislodging or puncturing the pipeline. A scalar analysis has yet to be done on Greenbrier River. A first study has yet to be done for Pocahontas County. How is that?

**Response #14: In recent years DEP has responded to numerous instances of landslides on pipelines and other oil & gas construction related projects. West Virginia's precipitation rates, clay soils, and steep terrain are key factors contributing to landslide development. In response to these occurrences, in 2016 DEP added Chapter 8 to its Best Management Practices Manual to include information identifying West Virginia's slip prone soils and, in the case of pipelines, to require bleeder drains in every other trench plug. As part of its registration application DETI has addressed slope stability for the project in the Stormwater Pollution Prevention Control Plan. DETI identifies potentially problematic areas and soils and presents typical details to be employed during construction to minimize the risk of earth movement and specifies the use of these mitigation measures at predetermined locations along the pipeline. The mitigation measures are consistent and go beyond what is recommend in DEP's updated BMP Manual.**

**Also see Section C. Response 1.**

**DETI will follow the Procedures to avoid or minimize impacts on water quality. Construction activities will be scheduled so that the trench is not excavated across the waterbody until immediately prior to pipe laying activities. The duration of in-stream construction activities will be limited to 24 hours across minor waterbodies (those 10 feet in width or less) and 48 hours across intermediate waterbodies (those between 10 and 100 feet in width). Site-specific crossing drawings for major waterbody crossings are included as Appendix K.**

**A scalar analysis is not required by the General WV Water Pollution Control Permit No. WV0116815 or EPA's Stormwater Construction General Permit. The pipeline will be buried in a trench therefore protected from the threat of rocks, logs and debris.**

Comment #15: So during my time, I wanted to touch really on the point. The FERC document impact statement points out that 73 percent of the ACP route in West Virginia, quote, cross areas with a high incidence of and a high susceptibility to landslides. And which ACP has not determined how to satisfactorily construct. Eighteen (18) percent of the five-mile route through the Monongahela National Forest would be on slide slopes, quote, are susceptible to natural landslides. And thus, the potential for project-induced landslides, slope failures, is high.

Further on we read, quote, small fields and steep slopes can produce catastrophic debris flows. During a rainstorm when they build slopes, monster slides downhill and it multiplies the debris flow. The debris flow has a snowball effect that increases the debris flow by and destructing power. It's a gouging, scraping off and incorporating bedrock, trees, stream banks. I'll point out that the heavy rain floods that we had in June of 2016, and then a couple months later in my area, Frost area, an eight-inch rainfall in the section of the ACP routed section. Both heavy rainfalls flooded sections of Route 92 that's over the road by the ACP route. And a walk up Bird Run near Route 84 visibly shows a massive debris washed out from flow. You can go see it yourself. Its steep slopes extend from soils and high potential of rain deluge for serious degradation of our fragile lands and streams.

I would like to request DEP full cooperation of citizen monitoring at the scene is constructed. Other comments I will put in writing concerning that it's on a karst laden stream, and the need for dye testing, and well testing prior to construction in April by the applicant.

**Response #15: Please see Section A. Response C.**

**Regarding landslides, in recent years DEP has responded to numerous instances of landslides on pipelines and other oil & gas construction related projects. West Virginia's precipitation rates, clay soils, and steep terrain are key factors contributing to landslide development. In response to these occurrences, in 2016 DEP added Chapter 8 to its Best Management Practices Manual to include information identifying West Virginia's slip prone soils and, in the case of pipelines, to require bleeder drains in every other trench plug. As part of its registration application DETI has addressed slope stability for the project in the Stormwater Pollution Prevention Control Plan. DETI identifies potentially problematic areas and soils and presents typical details to be employed during construction to minimize the risk of earth movement and specifies the use of these mitigation measures at predetermined locations along the pipeline. The mitigation measures are consistent and go beyond what is recommend in DEP's updated BMP Manual.**

**DEP met with several citizen groups on January 24, 2018. One of the points of topic will be how they can assist with project monitoring.**

**Please see, Section C. Response #1.**

Comment #16: Good evening. My name is Ted Lewis. I'm a senior principal with GeoConcepts Engineering. We're working on behalf of Dominion to conduct the karst surveys and studies for the project.

Our firm is located in Loudoun County, Virginia and we specialize in karst studies. Most of our projects involve building roads or buildings over karst. We got involved in this project because we did --- we helped a conservation fund about four years ago develop the avoidance and

minimization measures for pipelines when working in areas where the Madison Cave isopod is present, which is a federally endangered species that only lives in karst ground water. The avoidance and minimization measures were adopted by the ACP project where the strategy is to protect the ground water and protect the karst features, regardless of whether the Madison Cave isopod is present. And the goal is to minimize impact to the ground water. We completed several studies. The first study we completed is the karst mitigation plan. The karst mitigation plan provides the methodology for conducting karst surveys along the alignment. It also provides the protocols for addressing or mitigating karst features that are encountered during construction or that form during construction. And it also provides the karst mitigation conservation procedures that the construction project will have to implement.

The second study we completed is a karst survey report, which documents all of the karst features that are present along --- within a quarter-mile of the alignment. This survey also provides a specific GPS location and provides the condition of the karst features. It also provides a risk rating for each karst feature depending on a series of factors that determine how it's going to be protected. We also are in the process of conducting an electric resistivity imaging geophysical survey along the alignment so that we can look for karst features below the ground surface that aren't present. This survey data will be used during construction to help mitigate and determine if remediation of specific karst features are needed.

During construction, our firm will have full-time karst geologists on site whenever there's excavations in the karst geology, and our role is to identify undocumented karst features opened up during construction, but also to verify that the mitigation and conservation procedures that are included in the mitigation plan are being implemented.

In addition, we will providing daily reports of our observations. After construction, our karst specialists will be responsible for walking the entire pipeline where karst is present and looking at the karst features that were documented. And we'll be there one year after construction is complete, two years after construction, and five years after construction in order to document that the karst features haven't changed or been negatively impacted. And that's our role during construction.

**Response #16: The DEP appreciates your interest in the Atlantic Coast Pipeline Project and your comments regarding Karst Areas.**