ATLANTIC COAST PIPELINE, LLC
ATLANTIC COAST PIPELINE

and

DOMINION TRANSMISSION, INC.
SUPPLY HEADER PROJECT

Supplemental Filing
March 10, 2017

APPENDIX F

Correspondence for the Atlantic Coast Pipeline

APPENDIX F

Supplemental Summary of Public Agency Correspondence for the Atlantic Coast Pipeline

Agency/Contact Name(s)	Date of Correspondence	Format	Description
FEDERAL AGENCIES			
National Oceanic and Atmospheric Administration – Southeast Region			
Andrew Herndon, Stephanie Bolden, Fritz Rhode	3/1/17	Minutes	Meeting to discuss potential impacts on Atlantic sturgeon.
U.S. Fish and Wildlife Service			
Liz Stout	3/1/17	Letter	Letter regarding the WV Year 3 Bat Surveys.
Sumalee Hoskins	3/1/17	Letter	Letter regarding the VA Year 3 Bat Surveys.
John Ellis	3/1/17	Letter	Letter regarding the NC Year 3 Bat Surveys.
U.S. Forest Service – Monongahela and George Washington National Forests			
Jennifer Adams, Kent Karriker, Karen Stevens, Catherine Johnson, Cheryl Tanner, Whitney Bailey, Carol Croy, Fred Huber, Steve Croy, Mike Donahue	12/1/16	Minutes	Minutes from a meeting to discuss the status of the Biological Evaluation and associated underlying surveys and conservation measures.
Jennifer Adams, Russ MacFarlane, Angela Parrish	12/14/16	Minutes	Meeting to discuss use of a road with damaged waterbars.
Jennifer Adams, Kent Karriker, Julie Fosbender, James Willett, Katie Ballew, Mike Madden, Rebecca Robbins, Mary Helms, W.J. Colbert, Roni Etheridge	12/16/16	Minutes	Meeting to discuss law enforcement and access concerns on USFS lands.
Clyde Thompson, Jennifer Adams	2/10/17	Email and Letter	Transmittal email and letter describing the results of biological/wetland/waterbody surveys along an access road in the GWNF.
Kathleen Atkinson, Tony Tooke	2/22/17	Letter	Acceptance of ACP Construction Application.
Clyde Thompson	2/27/17	Letter	Responses to analysis of landslide data from recent flood event on the MNF.
Amy Coleman	3/6/17 back to 1/17/17	Email Chain	Transmittal of non-native invasive species data.
Clyde Thompson	3/6/17	Letter	Letter regarding the status of steep slope design coordination with the USFS.
Clyde Thompson	3/10/17	Letter	Transmittal of the Revised Management Indicator Species Report (note: the revised report is provided as Appendix C).
Clyde Thompson	3/10/17	Letter	Transmittal of the draft Biological Evaluation (note: the draft BE is provided in Appendix A; a public version of the draft is provided in Appendix B).
STATE/COMMONWEALTH AGENCIES			
WEST VIRGINIA AGENCIES			
West Virginia Division of Culture and History			
Susan Pierce	2/9/17	Letter	Comments on the addendum 4 historic architectural survey report.
Susan Pierce	2/23/17	Letter	Comments on a Phase II testing report for Site 46PH775.
West Virginia Division of Natural Resources			
Danielle Elliott	2/27/17 and 2/24/17	Email and Letter	Email dated 2/27/17 transmitting a letter dated 2/24/17 regarding geotechnical drilling at the Greenbrier River crossing.

APPENDIX F (CONTINUED)

Supplemental Summary of Public Agency Correspondence for the Atlantic Coast Pipeline

Agency/Contact Name(s)	Date of Correspondence	Format	Description
Carrie Brooks	2/27/17	Letter	Transmittal of Stream Activity Application for geotechnical drilling at the Greenbrier River Crossing.
Joe Scarberry	3/2/17	Letter	License and Right of Entry for geotechnical drilling at the Greenbrier River crossing.
VIRGINIA AGENCIES			
Virginia Department of Conservation and Recreation			
Rene Hypes	2/23/17	Letter	Comments on the Karst Terrain Assessment, Construction, Monitoring, and Mitigation Plan.
Rene Hypes	2/23/17	Letter	Comments on the Cochran's Cave Conservation Area and Moffett Lake Investigation Report.
Virginia Department of Game and Inland Fisheries			
Mike Pinder	3/2/17	Emails	Confirmation that candy darter is not located near the project.
Amy Ewing	3/7/17	Email	Concurrence with 2017 bat survey plan.
Virginia Department of Historic Resources			
Roger Kirchen	2/27/17	Letter	Transmittal of additional deliverables for the addendum 4 architectural reconnaissance survey report.
NORTH CAROLINA AGENCIES			
North Carolina Wildlife Resources Commission			
Vann Stancil	2/13/17 and 1/31/17	Email and Memo	Email dated 2/13/17 transmitting a memo dated 1/31/17 providing comments on the NC aquatics removal plan.
Gabriela Garrison	2/20/17	Email	Confirmation that no additional RCW surveys are required.
Gabriella Garrison, Vann Stancil	3/10/17	Letter	Transmittal of revised NC aquatics removal plan.

Federal Agencies

National Oceanic and Atmospheric Administration

ATLANTIC COAST PIPELINE
PROJECT MEETING MINUTES

MEETING WITH (COMPANY/AGENCY):
National Oceanic and Atmospheric Administration, Southeast Region

DATE:	LOCATION:
March 1, 2017	Web Meeting and Conference Call

ATTENDEES AND THEIR AFFILIATION:
Andrew Herndon – NOAA
Stephanie Bolden – NOAA
Fritz Rhode – NOAA
Richard Gangle – Dominion
Spencer Trichell – Dominion
Sara Throndson – ERM
Tracy Brunner - ERM

PREPARED BY:
Tracy Brunner

MEETING MINUTES:

The group discussed waterbodies with potential to have Atlantic sturgeon in North Carolina (Roanoke River, Neuse River, Cape Fear River, and Tar River). Andy H. noted that ahead of this meeting, they had discussed the Virginia waterbodies (Southern Branch Elizabeth River, James River, Nottoway River, and Nansemond River [EFH only]) with the Northeast Region of NOAA; they had no concerns with those waterbodies and did not expect any impacts from the project.

Dominion described the two waterbody crossing methods that would be used at waterbodies where Atlantic sturgeon are assumed present: HDD and cofferdam. Monitoring for inadvertent returns during drilling and responses to an inadvertent return were discussed. NOAA expressed concern with an inadvertent return potentially occurring in the waterbody during the spawning period. Dominion will provide geotechnical reports conducted at HDD crossings and the Inadvertent Return Contingency Plan to NOAA. NOAA also asked about water withdrawals and disposal; Dominion confirmed that water would not be withdrawn from these sensitive waterbodies, and municipal water would be used. Water used for hydrotesting would be released to a well vegetated upland area and drill mud would be hauled off site and disposed of at an appropriate landfill.

Roanoke River: NOAA asked about vibrations reaching the bottom of the river from the drilling activities. This was not identified as an impact in the Biological Assessment. Vibrations would occur at the drill rig set away from the waterbody; there is a vegetative buffer left in place between the drill workspace and the waterbody which would act as a buffer for noise.

Neuse River: NOAA asked about what the composition of the substrate was at the waterbody crossing, and Dominion committed to providing that information from other aquatic surveys that were completed at the crossing. NOAA noted that if there was rocky or gravel substrate this could be spawning habitat for the Atlantic sturgeon. NOAA stated that they were unsure if there

was a fall spawning run in the Neuse River, and would discuss internally what the appropriate recommended no in-water work window would be and provide it to Dominion.

Cape Fear River: During the comment period for proposed critical habitat, NOAA received information that may cause the unoccupied critical habitat to extend upstream and include the Cape Fear River project crossing location. This potential shift will be addressed in NOAA's response to the consultation in order to minimize delays for the project if it is included in the final rule. Since this waterbody is being drilled NOAA did not think this would be of concern.

Tar River: NOAA confirmed that Atlantic sturgeon cannot travel past the waterfall at Rocky Mount, or the dam that is upriver from the waterfall.

NOAA confirmed that all waterbodies with potential for Atlantic sturgeon were addressed in the BA. NOAA also noted that the measures being implemented to minimize or avoid impacts on Atlantic sturgeon (HDD and time of year restrictions) would also protect the shortnose sturgeon, if it were to occur in those waterbodies.

NOAA will confirm their internal process for completing section 7 consultation for the two species under their jurisdiction (Atlantic and shortnose sturgeon).

ACTION ITEMS

ACTION REQUIRED:	BY WHOM:
Provide geotechnical reports for HDD crossings	Spencer Trichell, Dominion
Provide substrate description at Neuse River	Spencer Trichell, Dominion
Project Inadvertent Return Contingency Plan	Spencer Trichell, Dominion
Provide recommended time of year restriction window at the Neuse River	Andrew Herndon, NOAA
Confirm section 7 consultation process for Atlantic and shortnose sturgeon	Andrew Herndon, NOAA

Attachments:

Agenda
Atlantic sturgeon and Essential Fish Habitat waterbody tables

cc: Project Files

U. S. Fish and Wildlife Service

Dominion Resources Services, Inc.
5000 Dominion Boulevard,
Glen Allen, VA 23060

March 1, 2017

BY EMAIL

Liz Stout
U.S. Fish and Wildlife Service
West Virginia Ecological Services Field Office
694 Beverly Pike
Elkins, WV 26241

Re: Atlantic Coast Pipeline - West Virginia Segment Protected Bat Species Presence/ Probable Absence Survey - Year 3 Remaining Surveys

Dear Ms. Stout:

Since 2014, Atlantic Coast Pipeline, LLC (Atlantic) has been conducting field routing, environmental, cultural resources, and civil surveys along the proposed pipeline route to collect information needed by the Federal Energy Regulatory Commission (FERC) and other regulatory and land managing agencies to review and permit the Atlantic Coast Pipeline (ACP) Project. Section 7 of the Endangered Species Act requires Federal agencies to verify that any actions authorized, funded, or carried out by the agencies do not jeopardize the continued existence of a federally listed threatened or endangered species, or result in the destruction or adverse modification of designated critical habitat for a federally listed species.

Atlantic plans to complete remaining surveys during the 2017 field season following the approved 2016 Revised West Virginia Segment Protected Bat Species Study Plan – Year 2 Present/Probable Absence Survey and 2016 Bat Hibernacula survey Study Plan. The study plan describes the scope and methods the ACP Project will continue to implement to address the federally listed northern long-eared bat, Indiana bat, gray bat, and Virginia big-eared bat as well as the Monongahela National Forest Regional Forester's Sensitive Species including little brown bat, tri-colored bat, and eastern small-footed bat. The 2016 Study Plan was approved by the U.S. Fish and Wildlife Service West Virginia Ecological Services Field Office on July 14, 2016.

Remaining surveys planned for 2017 include minor route changes based on the current proposed route and remaining surveys that could not be completed in 2016 due to land access permissions. Roost tree mapping and pedestrian surveys for hibernacula have been ongoing through the winter of 2016 and into 2017.

Summer acoustic surveys will be initiated on May 15, 2017 (June 1 on the Monongahela National Forest) and mist net surveys will be initiated on June 1, 2017 or as soon thereafter as predicted weather conditions will allow.

Project and Company Background

Atlantic Coast Pipeline, LLC (Atlantic) is a company formed by four major U.S. energy companies – Dominion, Duke Energy, Piedmont Natural Gas, and Southern Company Gas. The company was created to develop, own, and operate the proposed Atlantic Coast Pipeline (ACP), an approximately 600-mile-long, interstate natural gas transmission pipeline system designed to meet growing energy needs in Virginia and North Carolina. For more information about the ACP, visit the company's website at www.dom.com/acpipeline. Atlantic has contracted with Dominion Transmission, Inc. (DTI), a subsidiary of Dominion, to permit, build, and operate the ACP on behalf of Atlantic.

Dominion looks forward to continuing to coordinate with you on this project. Please contact Richard B. Gangle at (804) 273-2814 or Richard.B.Gangle@dom.com, if there are questions regarding this study plan. Please direct written responses to:

Richard B. Gangle
Dominion Resources Services, Inc.
5000 Dominion Boulevard
Glen Allen, Virginia 23060

Sincerely,

Robert M. Bisha
Technical Advisor, Atlantic Coast Pipeline

Cc: Cliff Brown, West Virginia Department of Natural Resources
Craig Stihler, West Virginia Department of Natural Resources
Jennifer Adams, U.S. Forest Service
Kent Karriker, Monongahela National Forest
Cathy Johnson, Monongahela National Forest
Richard B. Gangle, Dominion

Dominion Resources Services, Inc.
5000 Dominion Boulevard,
Glen Allen, VA 23060

March 1, 2017

BY EMAIL

Sumalee Hoskins
U.S. Fish and Wildlife Service
Virginia Ecological Services Field Office
6669 Short Land
Gloucester, VA 23061

Re: Atlantic Coast Pipeline - Virginia Segment Protected Bat Species Presence/Probable Absence Survey - Year 3 Remaining Surveys

Dear Ms. Hoskins:

Since 2014, Atlantic Coast Pipeline, LLC (Atlantic) has been conducting field routing, environmental, cultural resources, and civil surveys along the proposed pipeline route to collect information needed by the Federal Energy Regulatory Commission (FERC) and other regulatory and land managing agencies to review and permit the Atlantic Coast Pipeline (ACP) Project. Section 7 of the Endangered Species Act requires Federal agencies to verify that any actions authorized, funded, or carried out by the agencies do not jeopardize the continued existence of a federally listed threatened or endangered species, or result in the destruction or adverse modification of designated critical habitat for a federally listed species.

Atlantic plans to complete remaining surveys during the 2017 field season following the approved Virginia Segment Protected Bat Species Study Plan – Year 2 Present/Probable Absence Survey. The study plan describes the scope and methods the ACP Project will continue to implement to address the federally listed northern long-eared bat, Indiana bat, gray bat, and Virginia big-eared bat as well as the state listed endangered bats including little brown bat, tri-colored bat, and Rafinesque's big-eared bat. The eastern small-footed bat will also be addressed for the George Washington National Forest because it is an Occurrence Analysis Results species. The 2016 Study Plan was approved by the Virginia Department of Game and Inland Fisheries on May 19, 2016, and U.S. Fish and Wildlife Service Virginia Ecological Services Field Office on July 27, 2016.

Remaining surveys planned for 2017 include those that incorporate changes based on the current proposed route and remaining surveys that could not be completed in 2016. Mist net and summer acoustic surveys will be initiated on May 15, 2017, or as soon thereafter as predicted weather conditions will allow.

Project and Company Background

Atlantic Coast Pipeline, LLC (Atlantic) is a company formed by four major U.S. energy companies – Dominion, Duke Energy, Piedmont Natural Gas, and Southern Company Gas. The company was created to develop, own, and operate the proposed Atlantic Coast Pipeline (ACP), an approximately 600-mile-long, interstate natural gas transmission pipeline system designed to meet growing energy needs in Virginia and North Carolina. For more information about the ACP, visit the company's website at www.dom.com/acpipeline. Atlantic has contracted with Dominion Transmission, Inc. (DTI), a subsidiary of Dominion, to permit, build, and operate the ACP on behalf of Atlantic.

Atlantic looks forward to continuing to coordinate with you on this project. Please contact Richard B. Gangle at (804) 273-2814 or Richard.B.Gangle@dom.com, if there are questions regarding the project. Please direct written responses to:

Richard B. Gangle
Dominion Resources Services, Inc.
5000 Dominion Boulevard
Glen Allen, Virginia 23060

Sincerely,

Robert M. Bisha
Technical Advisor, Atlantic Coast Pipeline

Cc: Richard B. Gangle, Dominion
Amy Ewing, Virginia Department of Game and Inland Fisheries
Rick Reynolds, Virginia Department of Game and Inland Fisheries
Jennifer Adams, U.S. Forest Service
Troy Morris, U.S. Forest Service

Dominion Resources Services, Inc.
5000 Dominion Boulevard,
Glen Allen, VA 23060

March 1, 2017

BY EMAIL

John Ellis
U.S. Fish and Wildlife Service
Raleigh Ecological Services Field Office
P.O. Box 33726
Raleigh, NC 27636

Re: Dominion Transmission, Inc., Atlantic Coast Pipeline
North Carolina Segment Protected Bat Species Presence/Probable Absence Survey - Year 3 Remaining Surveys

Dear Mr. Ellis:

Since 2014, Atlantic Coast Pipeline, LLC (Atlantic) has been conducting field routing, environmental, cultural resources, and civil surveys along the proposed pipeline route to collect information needed by the Federal Energy Regulatory Commission (FERC) and other regulatory and land managing agencies to review and permit the Atlantic Coast Pipeline (ACP) Project. Section 7 of the Endangered Species Act requires Federal agencies to verify that any actions authorized, funded, or carried out by the agencies do not jeopardize the continued existence of a federally listed threatened or endangered species, or result in the destruction or adverse modification of designated critical habitat for a federally listed species.

Atlantic plans to complete remaining surveys during the 2017 field season following the approved 2016 North Carolina Segment Protected Bat Species Study Plan – Year 2 Present/Probable Absence Survey. The study plan describes the scope and methods the ACP Project will continue to implement to address the federally listed northern long-eared bat, Indiana bat, as well as the state listed Rafinesque's big-eared bat and southeastern myotis. The 2016 Study Plan was approved by the U.S. Fish and Wildlife Service Raleigh Ecological Services Field Office and North Carolina Wildlife Resources Commission on May 26, 2016.

Remaining surveys planned for 2017 include those that incorporate changes based on the current proposed route and remaining surveys that could not be completed in 2016. Mist net and summer acoustic surveys will be initiated on May 15, 2017, or as soon thereafter as predicted weather conditions will allow.

Project and Company Background

Atlantic Coast Pipeline, LLC (Atlantic) is a company formed by four major U.S. energy companies – Dominion, Duke Energy, Piedmont Natural Gas, and Southern Company Gas. The company was created to develop, own, and operate the proposed Atlantic Coast Pipeline (ACP), an approximately 600-mile-long, interstate natural gas transmission pipeline system designed to meet growing energy needs in Virginia and North Carolina. For more information about the ACP, visit the company's website at www.dom.com/acpipeline. Atlantic has contracted with Dominion Transmission, Inc. (DTI), a subsidiary of Dominion, to permit, build, and operate the ACP on behalf of Atlantic.

Atlantic looks forward to continuing to coordinate with you on this project. Please contact Richard B. Gangle at (804) 273-2814 or Richard.B.Gangle@dom.com, if there are questions regarding this study plan. Please direct written responses to:

Richard B. Gangle
Dominion Resources Services, Inc.
5000 Dominion Boulevard
Glen Allen, Virginia 23060

Sincerely,

Robert M. Bisha
Technical Advisor, Atlantic Coast Pipeline

Cc: Richard B. Gangle, Dominion
Gabriela Garrison, North Carolina Wildlife Resources Commission

U.S. Forest Service – Monongahela and George Washington National Forests

ACP CONSERVATION MEASURES MEETING NOTES

Date/Time: Thursday, December 1, 2016 @ 2:30pm-4:30pm (Eastern)
Location: Conference Call & GoTo Meeting

Attendees	Forest Service	Jennifer Adams, Kent Karriker, Karen Stevens, Catherine Johnson, Cheryl Tanner, Whitney Bailey, Carol Croy, Fred Huber, Steve Croy, Mike Donahue
	Dominion	Richard Gangle, Spencer Trichell, Brittany Moody, Gregory Park
	ERM	Sara Throndson, Pat Robblee, Maggie Voth, Kara Hempy-Mayer, Stu Buchanan
	Galileo Project	Maria Martin, Peter Rocco

Background

The meeting was scheduled to discuss the status of Atlantic Coast Pipeline's (ACP) Biological Evaluation (BE) and associated underlying surveys and conservation measures. On November 22, 2016 the BE was published on the Federal Energy Regulatory Commission (FERC) eRegister and made available for Forest Service (FS) review.

Discussion

Kent indicated that FS does not intend to review this version of the BE for the following reasons:

- The sedimentation analysis currently being worked on will inform the discussion of aquatic species. These species are not addressed in much detail in this version of the BE.
- Surveys for a 1.5 mile segment on National Forest need to be completed.
- Site and species specific conservation measures need to be incorporated.
- Additional avoidance measures and narrative on how ACP routed to avoid impacts to special status species is needed.

Regarding the additional surveys, Richard said ACP only recently received permission to access that the 1.5 mile-long segment in the Fort Lewis area of the George Washington National Forest (GWNF). It appears that the earliest survey window for species which might be present is around May to June. FS confirmed that species surveys in the area cannot be conducted outside of their approved survey windows.

Action Item: **ACP** identifies what species need to be surveyed, and when surveys would take place on GWNF lands. This survey includes access roads in addition to the pipeline ROW.

Regarding avoidance, the FS stated that they would be looking for the BE to describe direct and indirect species avoidance measures for each species. If complete avoidance is not possible, then the BE should demonstrate why, incorporate minimization measures, and include discussion of mitigation efforts and quantified impacts. This is required per both the Forest Plan Standards and the FS Manual Direction. Kent said FS avoidance to the greatest practical extent is required by FS policy contained in forest plans and manuals. He said the onus is on ACP to document avoidance.

Regarding specific conservation measures, the FS wants to see more detail on the measures incorporated into the BE; Richard suggested ACP would include more detail but still reference the source plans containing the complete description. Jennifer stated that references must be to

plans that are specific to National Forest System (NFS) lands and not to plans that cover the entire ROW. For example, the FS provided timber cruise information specific to NFS lands. Richard acknowledged FS's comment on the Construction, Operations and Maintenance (COM) Plan asking for this.

Jennifer said the FS is under the impression ACP intends to submit the BE and then prepare an addendum after completing the additional survey work. Spencer said ACP is not sure if they would do an addendum or update the BE and asked for the FS preference. Fred replied the FS evaluates the effects to sensitive species and needs to have all of the information relevant to the evaluation. Spencer asked if there was value in submitting a BE with information on the species ACP has complete data for. Jennifer suggested it would be better to wait; the FS also wants to review the sedimentation analysis since it will inform the analysis of aquatic species. Richard referenced his November 30 email in which he indicated the sedimentation analysis would be done by early January, 2017.

Richard said the recent filing of the BE was in response to a FERC data request. ACP intended to submit a BE to the FS in January 2017, but could work out another delivery date if the FS wants the next version to have more information. He suggested ACP wait to submit the next BE until the aquatic species analysis is done and more discussion on avoidance measures can be incorporated. The version after that one would include analysis on the species within the corridor to be surveyed. Jennifer confirmed this is the FS preference.

Cathy noted that northern flying squirrel was not included in the BE. ERM clarified that removal of that species from the BE was intentional, since the northern flying squirrel was not on the Regional Forester Senstive Species (RFSS) list for either forest. Cathy stated that whenever a federally listed species is delisted, it goes on the RFSS list automatically. ERM agreed to add northern flying squirrel to the BE for the MNF, and requested an updated RFSS list for both forests.

Action: **FS** provides updated RFSS lists for MNF and GWNF.

Cathy asked about the analysis and conservation measures for on the northern flying squirrel and Allegheny woodrat; some of the measures discussed during field trips have made it into the BE, but she said the FS wants to see survey for property boundaries since there were questions based on different sources. Cathy also indicated that population monitoring will be needed for Allegheny woodrat; during a field trip, ACP personnel assured Cathy and Cheryl that no widening or other road work would take place along the existing access road by the woodrat habitat, but monitoring would still be needed during construction because of increased traffic. Cathy said the FS wants to see final version of the road modifications since the FS has been told it was different from the maps available. Sara said population monitoring can be done for the Monongahela National Forest (MNF) since it is a FS sensitive species. The FS said that since the legal status of the woodrat differs in the GWNF (the species is locally rare, not RFSS listed), conservation measure recommendations would also be different. Population monitoring for woodrats in the GWNF would not be required by the GWNF for a non-RFSS listed species. There is potential this species could become an RFSS species during the life of the Project, however. Kent said the MNF's sensitive species list may be updated in April, 2017. FS indicated that avoidance measures related to locally rare species also should be documented; FS would prefer full avoidance but may not have regulatory authority to require avoidance for locally rare species. The GWNF clarified that the only FS requirement for locally rare species is that

potential impacts be addressed in the environmental impact statement (EIS); complete avoidance of locally rare species is not required.

FS identified a need for additional roost survey work for the threatened and endangered (TE) species and RFSS bat species, in accordance with the approved bat survey plan. In particular, Cheryl visited a portion of the eastern end of the route through the MNF which traverses habitat where the FS has captured bats in the past, and identified some primary roosts that had not been identified by ACP. Cathy indicated that more discussion was needed on avoidance and minimization measures for bats, and that Forest Plan direction for snag retention and other protective measures needs to be addressed. ERM noted that FS data, including additional capture locations, had been received and stated that subsequent roost tree mapping surveys would include these new areas.

Action: **Cheryl**, Cathy, **Kent** and **Jennifer** further discuss Indiana bat and RFSS bat species analysis needs.

Whitney noted that the FS is looking for site-specific and species-specific measures for each TE species. Cathy noted that for TE species, the FS has specific Forest Plan standards to meet in addition to any measures that result from consultation with the U.S. Fish and Wildlife Service (FWS)

Spencer said ACP has been drafting a biological assessment (BA) with feedback from the FWS. He expects the January, 2017 iteration will be the one that initiates formal Section 7 Consultation. Spencer asked when the FS would need the BE as part of the National Environmental Policy Act (NEPA) process. Kent said the BE is an internal document that informs the FS decision; it needs to be finalized before the decision is made However, the effects analysis needs to be disclosed to the public. This could be done by incorporating the analysis into the environmental impact statement (EIS) or by attaching the BE to the EIS. It is important to allow the public an opportunity to review and comment on it.

Richard noted there is no comment period for the Final EIS and asked how the FS would collect comments on the BE analysis. Jennifer clarified that the analysis in the BE would be incorporated in the Final EIS. It may have to be accompanied by language stating the analysis has not been previously released. Commenters on the analysis may have automatic standing in the FS objection process since it would be new information. Jennifer said she told the FERC about this situation in the spring of 2016. Spencer noted the draft EIS is going out in December, 2016 and asked if there would be another avenue to provide public review of the BE prior to the final EIS. Jennifer said FS NEPA experts are discussing options.

Jennifer asked when ACP anticipates Section 7 consultation would be complete. Richard said the FWS would publish a Biological Opinion 135 to 150 days after receipt of the BA. This would put conclusion of the Section 7 process around the time the Final EIS is published. He added he does not know specifics on the Section 7 consultation process since FERC is handling it. He does know that some species do not have complete survey information yet since there are areas that until recently ACP has not been able to access. Spencer said the FWS indicated a BA could be issued even if some areas need to be surveyed. In this scenario, ACP would survey before construction and provide the results to the FWS who would determine whether the BA would need revisions. Kent and Jennifer indicated the FS wouldn't be able to issue a decision until Section 7 is complete.

Richard said ACP anticipates completion of the Section 106 process in August or September, 2017. FERC is leading that process. Jennifer said each forest will handle consultation separately.

Attendees summarized the next steps.

1. FS reviews ACP's sedimentation analysis.
2. ACP updates the BE to reflect the revised sedimentation analysis and effects to aquatic species, incorporates more site and species specific information, details of conservation measures from other plans, and documentation on avoidance measures.
3. FS reviews the updated BE.
4. ACP revises the BE and incorporates information from the additional survey work (anticipated early summer 2017).
5. Forest Service will review the updated BE.

Richard added ACP is reviewing FS comments on the COM Plan and that he will work with Jennifer to setup a comment review meeting.

ACP TEMPORARY ROAD DAMAGE CALL
Date: December 14, 2016
Location: Conference Call

Attendees	Forest Service	Jennifer Adams, Russ MacFarlane, Angela Parrish
	Dominion	Richard Gangle, Brittany Moody, Greg Park
	Galileo	Maria Martin, Alexa Esquivel

Background
Forest Service staff was at the White Way timber sale yesterday doing site prep and found that waterbars on a temporary access timber harvest road had been compromised. Harvesting operations had ceased in October and waterbars had been pushed up to put that road to bed for the season.

Discussion
Russ has not seen the waterbar damage in person but the reports he received indicate that the tracks in the damaged area indicate that it was not caused by an ATV. It was presumed that this activity was connected to the ACP pipeline because there was evidence of fresh flagging where the temporary road and the corridor intersect. It is clear the timber sale contractor is not responsible for the waterbar damage because there are inspection reports completed after the last time he was working in the area. FS is concerned about quickly repairing the waterbars to prevent soil and water damage.

Angela mentioned that it would be helpful to get some clarity on the timing of ACP's work in the area. She also mentioned that the road in question is gated and requires a key to access. There are no photos yet of what the road damage looks like. The location of the damage seems appears to be the road that cuts in at MP 120.3 but a more accurate location is needed. Richard mentioned that if the FS staff member who goes into the field to take the damage photos can also take a GPS reading that would be very useful to ACP.

Angela indicated that the road has no stone on it so re-establishing the waterbars should be fairly easy. There should be FS oversight of the process to ensure that the waterbars are restored according to FS specifications. It would also be helpful to FS to know if there is additional geotech work that remains to be done.

Richard indicated that the geotech boring work has not yet begun although the 299 application has been submitted. The only work that has been done thus far is to go out and look at those specific sites to determine what type of footprint would be needed to get equipment in and to access the area where the geo bore would need to happen. Richard estimated that actual boring work wouldn't begin until late January if weather permits. Greg indicated that there has been survey work done in the area recently but nothing involving heavy equipment.

Angela indicated that FS would also like to know what additional work ACP anticipates doing that would involve use of the damaged road. Jennifer added that there may need to be some procedures in place for FS staff to be there before and after to check road conditions. Russ mentioned that timber sale contractors are held to a high standard and others working in the forest will also be held to that same standard.

Richard indicated that if the damage was caused by ACP, they are committed to remediating it.

Action Items

- FS will provide ACP with photos of the waterbar damage.
- FS will provide ACP with a GPS pinpoint, and/or map showing the location of the damage.
- ACP will review their work in the area and determine if they caused the damage.

ACP LAW ENFORCEMENT MEETING

Date/Time: December 16, 2016 @ 12:30pm- 2:30pm US Eastern Standard Time
Location: Conference Call

Attendees	Forest Service	Jennifer Adams, Kent Karriker, Julie Fosbender, James Willett, Katie Ballew, Mike Madden, Rebecca Robbins, Mary Helms, WJ Colbert, Roni Etheridge
	Dominion	Richard Gangle, Andrew Hoehl, Brittany Moody, Carole McCoy, Greg Park, Phyllis Hinterer, Thomas Ponceroff
	ERM	Pat Robblee
	Galileo Project	Maria Martin, Peter Rocco

Meeting Purpose

The Forest Service (FS) requested this meeting to talk about law enforcement and access concerns related to the construction and operational phases of the proposed Atlantic Coast Pipeline (ACP). FS intends this discussion to help inform future revisions to ACP's Construction, Operations, and Maintenance (COM) Plan. The FS wants to make sure access to the right-of-way (ROW) remains restricted in order to protect the ROW, ensure public safety, and limit the potential for the public to use the ROW to access previously difficult to reach areas with sensitive resources (e.g., cultural sites or biological). Access points between the ROW and National Forest System (NFS) lands and sensitive sites would require long-term monitoring and barriers may need repair and improvement during operations. Surveillance equipment including cameras and night vision equipment may be required to assist with monitoring.

Action Items

- **FS** further documents access and law enforcement concerns, including areas with high value resources and begins to estimate effort to monitor access, protect the resources, repair and mitigate effects. Also discusses who might be responsible for repairing damaged barriers such as gates during the operational phase.
- **FS** discusses internally how to recover expenses for long term ROW monitoring and protection of sensitive sites via the cost recovery agreement.
- **Katie** sends Jennifer guidance on closure order processing.
- **Jennifer** incorporates closure order processing in her project timeline.
- **ACP** revises the COM Plan. See below.
- **ACP** provides information to help inform the development of closure orders. See below.
- **ACP** invites FS to the first responded meetings being scheduled in the spring of 2017.
- **Julie** provides info on notification procedures for emergencies to Jennifer. **Jennifer** coordinates distribution of this information.
- **FS** provides specifications on signage, gates, barriers and locks to ACP.
- **ACP** provides a map or schematic of the ROW and access points to NFS lands.

- **Julie/FS** reviews existing plans from other pipelines and provides framework/guidance to assist ACP with revising the COM Plan.
- **FS** drafts short summary of language related to operation phase monitoring. See below.

Discussion Summary

- Of particular concern for the FS are ROW access points, existing roads or other motor vehicle routes. Also of concern are ROW access points on private lands. These points may allow the public to access NFS lands that would otherwise be inaccessible. It may be difficult for the FS to monitor and have access to the ROW if the access point is on private land. The FS would prefer that ROW access points are on NFS lands as much as possible.
- In addition to the formal access points, the FS would also like information on areas where the terrain might offer additional access points to members of the public identified.
- Mike noted there are 3 or 4 large prehistoric sites that would become more visible and accessible after ROW construction. He noted FS cultural resource staff are already stretched thin and it would be challenging for them to monitor and address potential effects from increased access to the sites. He mentioned that word about sites gets around quickly in the relic hunting community.
- Kent noted the FS has seen poaching and trash dumping in areas opened up by ROWs.
- James suggested one of the ways the FS can protect both the ROW and the resources is by implementing closure orders. To do so, the FS will need to determine what areas need to be closed, what is the purpose of the closure, and what types of activities would need to be limited. He said the process to implement closures is complicated and lengthy. It is also transparent and public. Katie mentioned information she recently received that indicated it could take up to 2 years to process a closure order.
- Jennifer and Mark mentioned the FS and others agencies are concerned about potential affects to the Appalachian Trail, which was recently listed on the National Registry of Historic Places. There are concerns with potential recreation and heritage resource effects. Greg ACP would drill under the trail and the ROW ends about 800’ from the trail, limiting access to the Appalachian Trail. Jennifer said the COM Plan should address these concerns.
- Rarely will the FS be a first responder to an emergency; typically the first responders are local law enforcement and emergency services. James said the FS will want more information related to pipeline related safety concerns such as evacuation distances to help inform training and response protocols. It would also be helpful for closure orders. Additional information on Dominion’s policies and standards regarding closure requirements during construction and maintenance would be helpful for the orders too.
- ACP will include contact information for their construction and operations teams in the COM Plan. The COM Plan will also need to include emergency notification and response procedures. Richard said Dominion typically conducts initial and refresher

training for local emergency services. Greg said ACP will begin those trainings this spring.

- Jennifer asked how ACP plans to deal with public protests. Carol indicated that ACP will be responsible for security if protests occur. Jennifer asked that ACP provide details in the COM Plan about how they would deal with protests that might occur at both the construction site and also at the Forest Supervisor's office.
- Greg said that during the construction phase, it is typically the responsibility of the construction contractor to arrange for onsite security. The type of security provided is situational. FS asked for more detail on security protocols in the COM Plan.
- Richard said Dominion typically repairs or replaces gates that they damage or remove during construction. The FS would like more detail on this in the COM Plan.
- Richard asked what kind of plans Columbia has for limiting access and responding to emergencies. He said any further framework or guidance the FS can provide would make for a better COM Plan.
- The FS would also like some language in the COM Plan related to operation phase monitoring of access points and sensitive sites. FS will try to draft some text, but ACP should draft the language if they don't have it in time for the next iteration of the COM Plan.

Jaclyn Martin

From: John Cassady
Sent: Friday, February 10, 2017 6:33 PM
To: cnthompson@fs.fed.us; jenniferpadams@fs.fed.us
Cc: Robert M Bisha (Services - 6); Richard B Gangle (Services - 6); Pat Robblee
Subject: Atlantic Coast Pipeline Project (ACP) - GWNF Geotechnical Investigations
Attachments: Geotech Access Rd Waterbody-Bio Report .pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Attached are the results of biological/wetland/waterbody surveys for an access road associated with the ACP's proposed geotechnical investigations on the George Washington National Forest. A letter report documenting the results of a cultural resources survey for the same area is being sent under separate cover.

John Cassady
Senior Regulatory Specialist

Environmental Resources Management (ERM)
1500 SW 1st Ave., Suite 885 l Portland l Oregon l 97201
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The world's leading sustainability consultancy

Dominion Resources Services, Inc.
5000 Dominion Boulevard.
Glen Allen, VA 23060

February 10, 2017

Clyde Thompson, Forest Supervisor
U.S. Forest Service
Monongahela National Forest
Forest Supervisor's Office
200 Sycamore Street
Elkins, WV 26241

RE: Atlantic Coast Pipeline, LLC, Atlantic Coast Pipeline Project
George Washington National Forest Geotechnical Investigation

Dear Mr. Thompson:

On October 20, 2016 Atlantic Coast Pipeline, LLC (Atlantic) submitted an Application for Transportation and Utility Systems and Facilities on Federal Lands (Standard Form 299) to conduct subsurface geotechnical investigations. The geotechnical investigations will allow Atlantic to determine slope stability conditions and design mitigation as necessary to ensure the integrity of the proposed pipeline and the National Forest Service (NFS) lands that the pipeline would cross.

As stated in that application, cultural and biological resource surveys had been completed for all work areas associated with the proposed geotechnical investigations, with the exception of a portion of one of the proposed access roads at the MP 120.3 location. The surveys of that road have now been completed, and this letter summarizes their results.

Figure 1 shows the proposed geotechnical work areas at the MP 120.3 location. It also shows the original survey corridor, which encompasses most of the work areas, and the portion of an old graveled logging road proposed for access to one of the drill sites, which lies outside of the original survey corridor and is the subject of this letter.

A cultural resources survey for the area in and immediately adjacent to this road was conducted in December, 2016. A survey report is being sent separately to the USFS. No cultural resources were identified during the survey.

A wetland/waterbody and biological resource survey was conducted along the road in December, 2016. No sensitive species or wetlands were identified. The road crosses an intermittent waterbody that was dry at the time of the survey. A low-water crossing already exists at this location, with no culvert or bridge present. Tires are embedded within the channel at the downstream edge of the existing road to help maintain cobble in the low water crossing. The attached photographs and data sheets document the waterbody survey.

This submittal should complete the information necessary for the GWNF to issue a permit for the proposed work. Atlantic proposes to complete the geotechnical investigation prior to the end of March, which will avoid the bat spring emergence period and migratory bird nesting season. Atlantic has designed the footprint of the drill sites to minimize ground disturbance, which would be minor and temporary in nature. As noted in the SF-299 application, erosion controls would be installed at each drill

site. Immediately following completion of drilling at the boring sites, restoration activities will be performed as described in the SF-299 application. Therefore, Atlantic believes no sensitive species will be affected by the geotechnical investigations.

Atlantic looks forward to continuing to work with you on the ACP. Please contact Richard B. Gangle at (804) 273-2814 or Richard.B.Gangle@dom.com if there are questions regarding this report. Please direct written responses to:

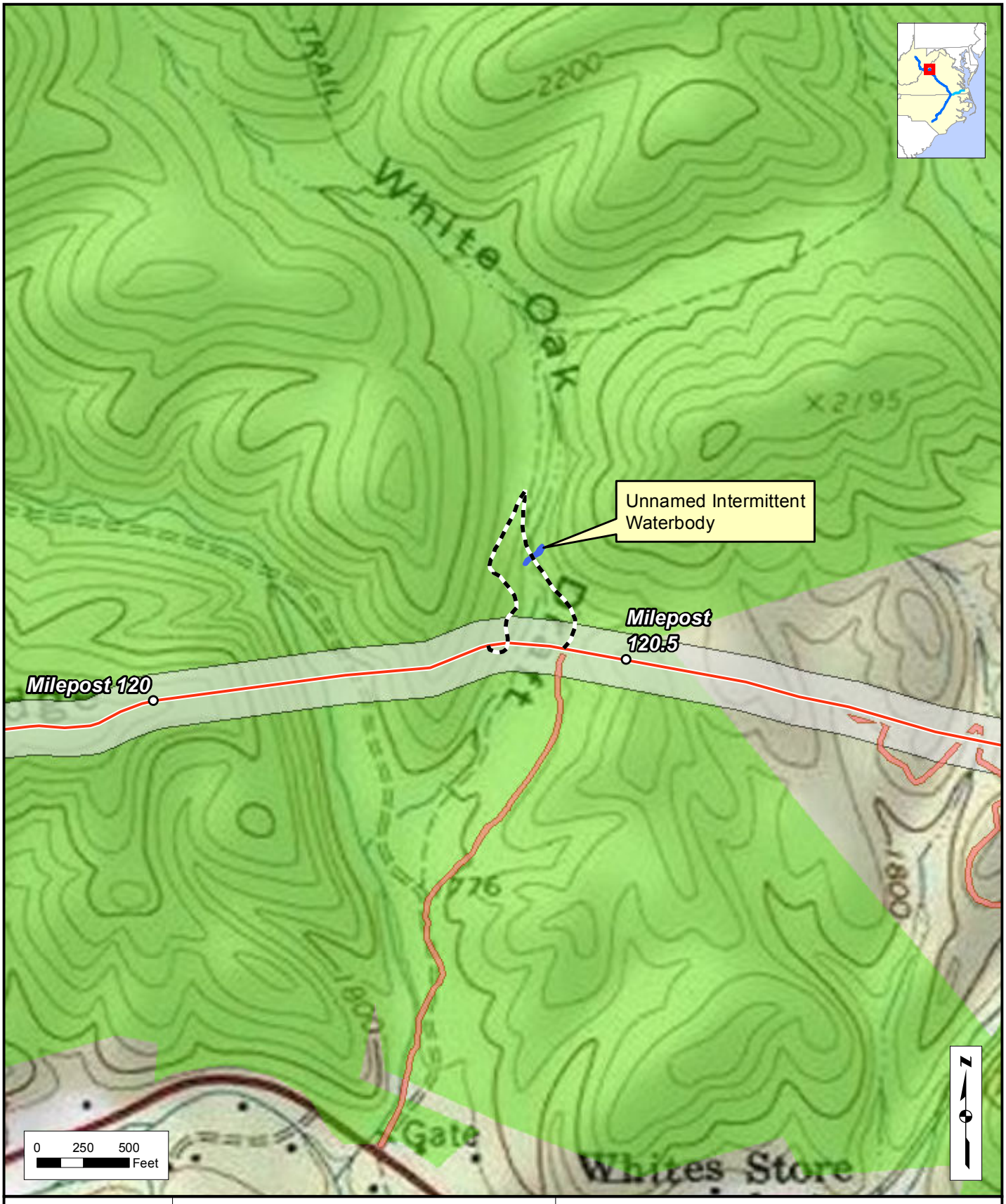
Richard B. Gangle
Dominion Resources Services, Inc.
5000 Dominion Boulevard
Glen Allen, Virginia 23060

Sincerely,

Robert M. Bisha
Technical Advisor, Atlantic Coast Pipeline

Attachments

Cc: Jennifer Adams, Special Projects Coordinator, U.S. Forest Service
Richard B. Gangle, Dominion Resources Services, Inc.



Proposed ACP Route

Borehole Access Road (Newly Surveyed)

Access Road (Previously Surveyed)

Original Survey Corridor

GWNF Ownership

Atlantic Coast Pipeline

Figure 1

Borehole Access Road
Biological/Waterbody Survey Area

FILE: M:\Clients\D-F\DOM\SRPP_ArcGIS\2016\12\06_Heavy_Equip_Access_ACP_Heavy_Equip_Access.mxd, REVISED: 02/06/2017, SCALE: 1:8,759 DRAWN BY: TAH

Atlantic Coast Pipeline

Daily Progress Report

Wetland and Waterbody Surveys

DRAFT

EMAIL NIGHTLY TO:

Joe Holler at joe.holler@erm.com
Mike Buckless at michael.buckless@nrg-llc.com
Luke Knapp at lknapp21@yahoo.com
Greg Park at gregory.s.park@dom.com
Jeff Arrington at jarrington94@gmail.com
Rick Hollenkamp at rehollenkamp@gmail.com
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Collin Constantin at cpconstantin@doyleland.com
Dan Post at dapostconsulting@gmail.com
Rob Hollenkamp at rdh710@aol.com

Date	**Total Miles Completed** (nearest tenth)	**State**	**County**
12/20/2016	0.40 miles access road - GWNF	Virginia	Augusta
Survey Corridor Version (date)	**Total Person Hours Worked** (field & office combined)	**Crew Letter and Member Initials**	**Total Miles Driven**
12/04/2016	8.5	Team A – GB, AS	White Barco = 80 miles

Survey Progress

List all tracts within 300-foot-wide survey corridor along survey segment(s) (between survey begin and end GPS points)

Tract Number	**Survey Complete** (Y/N)	**Survey Type** (walk over, remote only, skipped)	**Comments** (e.g., no survey permission but visually cleared, no survey permission and apparent water features, locked gate, partially complete at end of field day):
07-001.AR1 – GWNF extension to proposed access road 07-001.AR1-AR9	Y	walk over	We received a request to survey a proposed extension to this previously delineated access road on the GWNF for "Heavy Equipment Access"; the entirety of the proposed extension was surveyed today. The extension begins as a maintained, gravel Forest Road heading due north from centerline where it crosses stream saua439 (no culvert or bridge present). However, where the proposed extension makes an abrupt hairpin turn to the south the road is a very narrow and long ago decommissioned dirt two track logging road for ~ 300 feet. After this point the proposed extension leaves the decommissioned logging road and stays on the side slope until reaching centerline next to stream saua428. The old logging road continues to the ridge top where the proposed extension deviates.
07-001.AR1	N/A	see comments	We navigated to a discreet point on the GWNF to visit an aerially delineated raptor stick nest – see survey results below.

Survey Results		
Feature ID	**Tract Number(s)**	**Comments** (e.g., intermittent stream, natural pond, PFO wetland, PFO/PEM wetland complex, weed occurrence of *Carduus nutans*, suitable habitat for *Helenium virginicum*)
saua439	07-001.AR1 access road extension 07-001.AR1-AR9	Intermittent stream – UNT to Buckhorn Creek; continues out of the proposed access road corridor in both directions; existing gravel road crosses stream with no culvert or bridge present – vehicles are driven through stream channel. There are buried tires within the channel at the downstream edge of existing road – these were placed to help maintain cobble in low water crossing. This stream is perennial where it crosses centerline downstream (saua428); however at this road crossing no water was present and the topography indicates there is considerably less interaction with ground water at this point, thus classified as intermittent.
STICK-UNK_03	07-001.AR1	Unknown raptor stick nest identified during aerial delineation – field checked today. This nest is located near the top of a mature northern red oak at a height of ~ 80 feet. Tree is rooted on a steep slope (65%) near the top of a draw. There was no evidence present to indicate that the nest was active at the time of the visit (i.e. owl pellets, rodent bones, excrement on ground beneath nest). The nest is located approximately 150 feet downslope from the coordinates we received from the aerial survey.

Anticipated Progress and Schedule			
Tract Number	**Anticipated Date of Completion**	**Milepost range**	**Tract permission and Comments**(include tract for access)
TRO tracts	TBD	TBD	Follow routing on TRO tracts; top priority
26-060-A092- Kitty and Bruce Kirk Unnamed tract to the SW of 26-060-A092 27-008- Charles Moore 27-009-iHeart Media Tower LLC 27-009.5- Willis Broadcasting Corporation	12/21/16	Lateral ~ 65 – 70 discrete points	Field check of two aerially identified raptor nests

10-058 – Wiley 10-058.AR – Wiley 10-059 – Wiley	12/22/16	218.2 – 218.4	Field check of an aerially identified raptor nest and survey of proposed access road 10-059.AR-AR1 pending communication between land and property owner

Tailgate Safety Meeting		
Time	**Topic**	**Attendees** (full names):
0630	**traversing steep slopes**	**Gavin Blosser, Adrianna Stolarski**
Embedded Ticks	**GB – 0** **AS – 0**	

Morning Daily Vehicle Inspection		
Time	**Defects**	**Inspector name**
0630	**White Barco truck – no defects**	**Gavin Blosser**

Comments (e.g., landowner encounters, civil survey or Right-of-Way coordination, centerline staking visibility and agreement with digital line, impediments to survey progress):

We attended the morning meeting in Waynesboro, VA. We visited one aerially surveyed raptor nest on the GWNF off of Mt. Torrey Road in Augusta County to field check. We surveyed a proposed extension to a previously delineated access road on the GWNF off of US250 in the White Oak Draft area in Augusta County. We recorded one intermittent stream.

Daily Timeline:
0630 – 0700: truck inspection, safety meeting
0700 – 0830: morning meeting in Waynesboro, VA
0830 – 0900: drive to field site; may involve additional time to stage vehicles, find parking, etc.
0900 – 1300: conduct field work; includes any travel between sites
1300 – 1330: return to hotel in Waynesboro, VA
1330 – 1530: data management, reports, communications, planning, logistics, equipment maintenance

Spread 1 – West Virginia

Mike Cozad – Spread Supervisor

MJCozad@doyleland.com

(724) 584-3378 - Cell

Dan Post – Survey Coordinator

dapostconsulting@gmail.com

(304) 532-5482 - Cell

Spread 2 - Northern VA

Rick Hollenkamp – Survey Coordinator

rehollenkamp@gmail.com

(817) 915-7159 - Cell

Rob Hollenkamp – Spread Supervisor
rdh710@aol.com
(817) 915-7159 - Cell

Spread 3 - Southern VA

Collin Constantin
cpconstantin@doyleland.com
Cell: (504) 914-0162

Spread 4 - North Carolina

Clark Cooney
CCOONEY@DOYLELAND.COM
(919) 205-1950 - Office
(712) 254-0723 – Cell

Gregory S. Dean - Survey Coordinator
gregdeangunner@ymail.com
(517) 712-4927 – Cell

saua439 facing northeast upstream

saua439 facing southwest downstream

saua439 facing northwest across

Linear Waterbody Data Sheet

Survey Description

Project Name:	Waterbody Name:	Waterbody ID: saua439	Date:
Atlantic Coast Pipeline	UNT to Buckhorn Creek		12/20/2016

State:	County:	Company:	Crew Member Initials:	Photos:
Virginia	Augusta	ERM/NRG	GB, AS	5 photos

Tract Number(s):	Nearest Milepost:	Associated Wetland ID(s):
07-001.AR1; proposed access road 07-001.AR1-AR9	120.4	none

Survey Type: *(check one)* ☐Centerline ☐Re-Route ☒Access Road ☐Other:

Physical Attributes

Stream Classification: *(check one)* ☐Ephemeral ☒Intermittent ☐Perennial

Waterbody Type: *(check one)* ☐River ☒ Stream ☐ Ditch ☐ Canal ☐ Other:

OHWM Width: 13.0 ft.

Height: 1.5 ft.

N/A☐

OHWM Indicator: *(check all that apply)*

☒ Clear line on bank ☐Shelving ☐Wrested vegetation ☒Scouring ☐Water staining

☐Bent, matted, or missing vegetation ☐Wrack line ☒Litter and debris ☐Abrupt plant community change ☐Soil characteristic change

Width of Waterbody - Top of Bank to Top of Bank:	Width of Waterbody - Toe of Slope to Toe of Slope:	Width of Waterbody - Water Edge to Water Edge:	Depth of Water: *(Approx.)*
20.0 ft.	10.0 ft.	_____ ft. N/A☒	_____ ft. N/A☒

Sinuosity: *(check one)*	Water velocity: *(Approx.)*	Bank height	Bank slope
☒Straight ☐Meandering	_____ fps N/A☒	Right: 3.5 ft. Left: 5.0 ft.	Right: 65 degrees Left: 60 degrees

Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics):

Some areas of loose cobble and soil – considered normal for stream of this gradient

Qualitative Attributes

Water Appearance: *(check one)* ☒No water ☐Clear ☐Turbid ☐Sheen on surface ☐Surface scum ☐Algal mats ☐Other:

Substrate: *(check all that apply)*	☒ Bedrock	☒ Boulder	☒ Cobble	☒ Gravel	☐ Sand	☐ Silt/ clay	☐ Organic	☐ Other:
% of Substrate:	5 %	65 %	25 %	5 %	_____ %	_____ %	_____ %	_____ %

Width of Riparian Zone: 85 ft. N/A☐

Vegetative Layers: *(check all that apply)* ☒ Trees: ☒ Saplings/Shrubs: ☒ Herbs

Avg. DBH of Dominants: *(approx.)* 13.0 in. 1.5 in. _

Dominant Bank Vegetation *(list)*:

White oak, northern red oak, chestnut oak, sweet birch, sycamore, hemlock, white pine, yellow poplar, ironwood, witch hazel, greenbrier, blackberry, tree of heaven, Japanese stilt grass, Christmas fern, deer tongue grass, wood aster

Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools)**:**

Coarse woody debris, leaf packs

Aquatic Organisms Observed *(list)*:

none

Forest Service

Eastern Region
Regional Office
626 East Wisconsin Avenue
Suite 800
Milwaukee, WI 53202

Southern Region
Regional Office

File Code: 2720; 1950 **Date:** FEB 22 2017
Route To:

Subject: Acceptance of Atlantic Coast Pipeline, LLC Pipeline Construction Application FERC Docket No. CP15-554

To: Forest Supervisor, Monongahela National Forest

We received the Monongahela and George Washington and Jefferson National Forests recommendation to accept and process the special use permit application from Atlantic Coast Pipeline, LLC (ACP-LLC) dated June 16, 2016 (enclosed). Authorization to accept the proposal as an application and proceed with review and processing is granted. Please submit the estimated cost recovery processing fee for approval.

Special Uses Program Manager Jim Twaroski is the Region 8 point-of-contact for this project. He can be reached at jtwaroski@fs.fed.us or (404) 347-2871. Lands Special Use Program Manager Laura Hise is the Region 9 point-of-contact for this project. She can be reached at lhise@fs.fed.us or (304) 456-4795. They are available to assist you and your Unit Project Coordinator Jennifer Adams as needed.

KATHLEEN ATKINSON
Regional Forester Eastern Region

TONY TOOKE
Regional Forester Southern Region

Enclosure

cc: Joby Timm; Timothy Abing; Judi Henry; Tony Erba; Kent Karriker; Jennifer Adams; Karen Stevens; Karen Overcash; Julie Fosbender; JoBeth Brown; Alex Faught; Todd Hess; Jim Twaroski; Jessica Soroka; Carrie Gilbert; Laura Hise

Dominion Resources Services, Inc.
5000 Dominion Boulevard,
Glen Allen, VA 23060

February 27, 2017

Clyde Thompson, Forest Supervisor
U.S. Forest Service
Monongahela National Forest
Forest Supervisor's Office
200 Sycamore Street
Elkins, WV 26241

RE: Atlantic Coast Pipeline, LLC, Atlantic Coast Pipeline Project
Responses to Forest Service Analysis of Landslide Data from Recent Flood Event on the Monongahela National Forest

Dear Mr. Thompson:

This letter provides a response to the United States Forest Service (USFS) letter dated December 23, 2016 (ascension number 20161227-5025) regarding the analysis of landslide data from the June 23, 2016 high-intensity rainfall event. Atlantic Coast Pipeline, LLC (Atlantic) and their professional geotechnical engineers have performed a review of the letter and data provided by the USFS and conducted select site visits in preparing this analysis. Atlantic is committed to best-in-class measures to avoid slips. However, as described in more detail in the attached document, our analysis shows that many of the Forest Service's conclusions – while important – are not appropriate for comparison to the Atlantic Coast Pipeline Project.

Atlantic appreciates the comments from the USFS and looks forward to continuing to work with you on the ACP. Please contact Richard B. Gangle at (804) 273-2814 or Richard.B.Gangle@dom.com if there are questions regarding this letter.

Please direct written responses to:

Richard B. Gangle
Dominion Resources Services, Inc.
5000 Dominion Boulevard
Glen Allen, Virginia 23060

Sincerely,

Leslie Hartz
Vice President, Pipeline Construction

Cc:

Jennifer Adams, Special Projects Coordinator, U.S. Forest Service
Richard B. Gangle, Dominion Resources Services, Inc.

Enclosures: Analysis of the Forest Service Landslide Data

Analysis of the Forest Service Landslide Data

OVERVIEW

Geosyntec Consultants, Inc. (Geosyntec) has prepared this review of the 23 December 2016 letter from the United States Forest Service (Forest Service) to the Federal Energy Regulatory Commission (FERC) titled "Forest Service Analysis of Landslide Data from a Recent Flood Event on the Monongahela National Forest", and attachments (the Landslide Analysis). The Landslide Analysis is based on the Forest Service's compilation of data from 48 landslides in four groups along forest road systems in southeastern West Virginia (see Figure 1 in Attachment A). These landslides were reported by the Forest Service to have occurred following the high-intensity precipitation event in southern West Virginia on 23 June 2016. The Forest Service indicated that the purpose of their analysis was to illustrate the potential for high-intensity precipitation events like the one in June 2016 to cause slope stability problems along the proposed Atlantic Coast Pipeline (ACP) Project route. The Forest Service identified slope, geology, and soil properties at each of the 48 landslide locations and suggested that a comparison can be drawn to the portion of the proposed ACP Project that traverses the Monongahela National Forest (MNF) because of similar slope, geology, and soil properties.

In addition to the 23 December 2016 Forest Service letter to FERC, Geosyntec was also provided with a tabulation of the Latitude/Longitude GPS coordinates of the 48 Landslide Points (see Table 1 in Attachment B) and 164 GPS geotagged photos presented in 14 Sets (A thru N as listed in Table 2). As an initial step in evaluating the relevance of the landslide data the Forest Service analyzed to the ACP Project, Geosyntec plotted the locations of all 48 Landslide Points on four maps (see Figures 2, 3, 4 and 5). One of the Landslide Points (#36 – on Figure 1) fell in a location that was significantly distant from the others and may reflect incorrect GPS coordinates. For this reason, Geosyntec excluded this Point from its analysis. Geosyntec then plotted the locations of all 164 photos (see Figures 2, 3, 4 and 5). The 4 groups are referenced as follows and discussed below:

FS Group 1 (FR 719 on Figure 2- approximately 3 miles NE of White Sulphur Springs, WV);
FS Group 2 (FR 101 on Figure 3- approximately 10 miles E of Craigsville, WV);
FS Group 3 (FR 86 on Figure 4 -approximately 15 miles E of Craigsville, WV); and,
FS Group 4 (FR/SR 150 on Figure 5 -approximately 5 to 10 miles NW of Marlinton, WV).

Geosyntec also requested, specific information regarding the Forest Service's observations of each landslide including:

- Dimensions (length, range of width, estimated thickness);
- Estimated displacement during June 2016 precipitation event; and,
- Brief description of type of ground disturbance in each landslide area, i.e., road cuts and/or fills, culverts, prior slope instability, and other similar information that could provide information about the root cause and the mechanism that led to triggering of each landslide.

This information is included as Attachment D. No site-specific information on the landslide characteristics was available from the Forest Service, so on 18 and 19 January 2017 a Geosyntec representative joined a small team from ACP to visit a number of the landslide locations across three of the four groups to make independent observations. The results of our review of the 23 December 2016 Landslide Analysis indicate that:

- The positional accuracy of landslide and photograph location point data provided by the Forest Service ranges from reasonably good to very poor (the Forest Service acknowledged in the Landslide Analysis that there may be some mapping errors);
- The GPS coordinate data and photographs do not represent 48 landslides. We were able to visit 24 of the points. Some locations were not visited because they were along or near roads closed to

travel by the USFS, or the GPS coordinates were clearly incorrect. After carefully observing the plotted locations of all 48 Landslide Points in GIS and on Google Earth, reviewing all 164 photographs, and visiting the 24 Landslide Points, we could only identify 14 unique sites where we consider that ground movement might have occurred during, or as a result of, the 23 June 2016 high-intensity precipitation event. We have categorized the ground movement at these 14 unique sites as follows;

- 2 road fill failure sites
- 2 culvert washout sites
- 2 reactivated pre-existing road fill slope movement sites
- 2 road fill erosion site
- 3 cut slope failure sites
- 1 cut slope erosion site
- 2 reactivated pre-existing landslide sites

- The Landslide Analysis is essentially a presentation of six separate univariate analyses that are not (and cannot be) compared quantitatively (neither deterministically nor probabilistically). Attributes such as slope inclination, underlying geologic conditions, and surficial soil characteristics are important factors in evaluating the potential or susceptibility of land sliding to occur at an individual site, and these are important attributes to consider in causative evaluation of landslides that have occurred. However, there are numerous other factors that must also be considered, and these attributes and factors must be analyzed in a multivariate fashion to evaluate the degree to which an individual site is susceptible to land sliding; and,
- Generally, the ground movement sites do appear to be along existing road systems, as the Forest Service stated in the Landslide Analysis, and are commonly associated with road cut and fill failures and culvert washouts. These are circumstances that will not occur along the ACP Project pipeline route because construction of the pipeline will not leave permanent cuts, fills or culverts. Design and construction of pipeline access roads will address these issues.

DISCUSSION OF LANDSLIDE GROUPS

In the subsections below, details of our review of the point data, the photographs and site visit observations are presented for each of the four groups. We illustrate conditions at each of the 14 identified unique ground movement sites by the Representative Photos included in Attachment C. Most sites are illustrated by photos obtained by Geosyntec, but for sites that we did not visit we used photos from the Forest Service photo sets. The source of each photo is indicated on the photo sheets in Attachment C.

Group 1 – FR 719

Group 1 is located in proximity to FR 719, approximately 3 miles NE of White Sulphur Springs, WV (refer to Figure 2). We visited this area on Wednesday afternoon 18 January 2017. Locked gates prevented vehicle access, and only 7 of 18 points were visited on foot.

The first location visited was Point 39, where we were unable to identify a landslide. The GPS coordinates may be inaccurate. It appears that the 6 photos from Set G attributed to this location were actually taken at the location of Culvert Washout Site "G" discussed below.

The second location visited we refer to as Road Fill Failure Site "H/L", which was not assigned a Point by the Forest Service. The 6 photos in Set H and the 20 photos in Set L reflect observations made by Geosyntec that this is a road fill failure. A sliver fill constructed over a steeply dipping bedrock slope

failed, probably due rapid infiltration of surface runoff into, or along the base of the fill, during the June 2016 high-intensity precipitation event (see Photo 01).

The third location visited was the cluster of 3 Points 40, 41 and 42, where we were also unable to identify a landslide. The GPS coordinates may be inaccurate. It appears that the 4 photos from Set G attributed to this location were actually taken at the location of Culvert Washout Site "G" (see Photo 02).

The fourth location visited was Point 1, where we were also unable to identify a landslide. The 4 photos from Set A attributed to this location illustrate road fill failure. The GPS coordinates are apparently inaccurate and the actual location of this site could not be determined (see Photo 03).

The fifth location visited we refer to as Debris Flow Culvert Washout Site which was not assigned a Point and no photos of this site were provided by the Forest Service. We did not identify a landslide at this site (see Photo 04).

The sixth location visited was the cluster of 2 Points 10 and 11, where we were also unable to identify a landslide. The 4 photos from Set C attributed to this location illustrate road fill erosion which is consistent with Geosyntec's observations, and we refer to this site as Road Fill Erosion Site "C" (see Photo 05).

The cluster of 2 Points 43 and 44 is coincident with locations attributed to 2 photos from Set G and 2 photos from Set H. Geosyntec was unable to visit this site, however, the photos clearly illustrate Culvert Washout Site "G" and Road Fill Failure Site "H/L", respectively. The GPS coordinates for the photos are inaccurate.

Geosyntec was unable to visit the cluster of 2 Points 2 and 3, as the road was closed to vehicular use by the USFS. However, the 7 photos of Set A attributed to this location appear to clearly show the same site of road fill failure attributed to Point 1 above. The GPS coordinates for the photos are likely inaccurate.

Geosyntec was unable to visit the cluster of 6 Points 4, 5, 6, 7, 8 and 45, due to the road closure and limited time. However, the 11 photos of Set B attributed to this location appear to clearly show a site of road fill erosion (see Photo 06), and the 8 photos of Set I appear to show a site of cut slope erosion (see Photo 07). The GPS coordinates for the photos may be inaccurate.

Similarly, Geosyntec was unable to visit Point 9 due to the road closure. However, the 6 photos of Set C attributed to this location appear to show the site of Road Fill Erosion Site "C" at Landslide Points 10-11, discussed above. The GPS coordinates for the photos are likely inaccurate.

Group 2 – FR 101

Group 2 is located in proximity to FR 101, approximately 10 miles E of Craigsville, WV (refer to Figure 3). We visited this area on Thursday morning 19 January 2017.

Fifteen (15) Points (13 thru 27) are associated with Group 2 and 28 photos from Set D are attributed to the same location as these Points. All 28 photos clearly show the same cut slope failure site which we refer to as the FR 101 Cut Slope Failure Repair Site. The GPS coordinates for many of the photos and many of the Points are likely inaccurate, as there are not 15 landslides at this location. There is only 1 recent cut slope failure which has now been repaired (see Photo 08).

Group 3 – FR 86

Group 3 is located in proximity to FR 86 (also referred to as Public Road 86), along the Williams River, approximately 15 miles E of Craigsville, WV (refer to Figure 4). Locked gates prevented vehicle access to the sites in this Group and foot access was not possible due to the distances that would have needed to be traversed in the limited time available. However, we suspect that the GPS coordinates for Point 46 are inaccurate, and we suspect that the GPS coordinates for the 11 photographs of Set J attributed to this location are also inaccurate. Further, we believe the GPS coordinates for Point 47 are also inaccurate (there was no photo attributed to this location).

We infer that Point 46 and the associated 11 photos of Set J actually represent conditions at approximately MP 14.7 on the south side of the Williams River approximately one third mile south of that point where a pre-existing landslide to the south of FR 86 may have recently re-activated (see Photo 09).

We suspect that Point 47 is associated with the 11 photos of Set K at approximately MP 15.9 on the north side of the Williams River approximately one half mile south of that location where a cut slope failure recently occurred (see Photo 10).

Group 4 – FR/SR 150 Highland Scenic Highway

Group 4 is located in proximity to FR 150, also known as the WV SR 150 Highland Scenic Highway, approximately 5 to 10 miles NW of Marlinton, WV (refer to Figure 5). We visited this area on Thursday afternoon 19 January 2017.

The first location visited was the cluster of 9 Points, 29 thru 35, 37 and 38. There are 21 photos in Set F attributed to this location. These photos show a road cut slope failure, however, a foot traverse of the cut and the mountainside above clearly indicate a very large pre-existing landslide at this location. The construction of the Highland Scenic Highway resulted in significant excavation into the toe of this landslide and there is evidence that cut slope stability problems likely developed during construction and may be an ongoing maintenance issue here. There are not 15 landslides at this location as suggested by the Point information from the Forest Service. There is only 1 recent cut slope failure at the toe of a very large pre-existing landslide that we refer to as the FR 150 Highland Scenic Highway Landslide. We have classified this site as a re-activated pre-existing landslide (see Photo 11). However, based on our limited observations we cannot assess what movement occurred elsewhere across the landslide, beyond that at the cut slope, following the June 2016 high-intensity precipitation event.

The second location visited was Point 28 on the west side of the Williams River on FR 86 at the Tea Creek Campsite Bridge. There is recent small scale cut slope instability at this location (see Photo 12), however, the 3 photos of Set D attributed to this location are actually taken at the FR 101 Cut Slope Failure Repair site.

The third location visited was the site of the 4 photos in Set M showing the Honeycomb Rocks Slip Road Fill Slope Movement site. There is no Landslide Point for this location, however, a large highway fill was constructed here and it appears that there have been ongoing slope and culvert maintenance issues at this site. The photos show recent erosion damage to a geosynthetic and rip rap lined culvert discharge channel and site observations indicate that a large shot-rock buttress was constructed across much of the lower highway fill slope a number of years ago. We did not observe a landslide at this site and would describe what is shown in the Forest Service photos as road fill erosion, however, we have classified this as a pre-existing fill slope movement site (see Photo 13).

The fourth location visited was Point 48 which corresponds to the Red Lick Slip Road Fill Movement site. The 3 photos from Set N and the 2 photos from Set E, and our observations during the site visit

indicate that a very large highway road fill was constructed at this location over a shallow bedrock surface where extensive groundwater flow is present. We did not observe a landslide at this site, but our observations suggest that movement of the road fill is an ongoing maintenance concern, and movement may have accelerated temporarily during the 23 June 2016 high-intensity precipitation event (see Photo 14).

It was not possible for us to visit Landslide Point 12 due to its isolated location and we suspect that the GPS coordinates for this location are incorrect. The 1 photo of Set F that is attributed to this location was actually taken at the FR 150 Highland Scenic Highway Landslide.

RELEVANCE OF LANDSLIDE ANALYSIS TO ACP PROJECT

The Forest Service suggests in the Landslide Analysis that their evaluation of what they claim to be 48 documented landslides illustrates a correlation between the occurrence of landslides during the high-intensity precipitation event on 23 June 2016 and the potential for similar high-intensity precipitation events to cause slope stability problems along the proposed ACP Project route. The Forest Service relies on assumed similarities in slope, geology, and soil between the sites they identified and sites along the ACP Project route. However, based on our independent review and analysis, the Forest Service's conclusions are not substantiated.

- The Forest Service claims that they analyzed 48 landslides; however, across the study area Geosyntec identified only 14 unique sites where ground movement may have occurred during, or as a result of, the 23 June 2016 high-intensity precipitation event. We identified locations where the GPS coordinates of multiple Landslide Points overlay one another, and we found numerous positional accuracy issues with the GPS coordinate information. Our review of the Forest Service's GPS geotagged photos and the results of our field visit observations confirm that individual ground movement sites were counted 2, 3, 4, 10 and even up to 15 times to arrive at the total number of 48 landslides. This is not appropriate or scientifically defensible.
- The Forest Service has classified landslides at sites where road fills moved, road fills washed out, culverts washed out, pre-existing fill slope movements were re-activated, cut slopes moved and cut slopes washed out. Only 2 of the 14 unique ground movement sites identified by Geosyntec were classified as pre-existing landslides by Geosyntec. Classifying road fill and cut slope movement, road fill and cut slope erosion, and culvert washouts as landslides is not appropriate not applicable to pipeline construction.
- The Landslide Analysis is essentially a presentation of six separate univariate analyses that are not (and cannot be) compared quantitatively (neither deterministically nor probabilistically). Attributes, such as slope inclination, underlying geologic conditions, and surficial soil characteristics are important factors in evaluating the potential or susceptibility of land sliding to occur at an individual site, and these are important attributes to consider in causative evaluation of landslides that have occurred. However, there are numerous other factors that must also be considered, and these attributes and factors must be analyzed in a multivariate fashion to evaluate the degree to which an individual site is landslide susceptible. Some of these other factors include: (i) surface water drainage; (ii) degree of saturation and groundwater conditions at the time of slope movement; (iii) whether slope geometry is concave or convex; (iv) whether there is evidence of pre-existing land sliding; (v) whether localized steepening, such as caused by permanent hillside road cuts and fills, is present; (vi) the extent to which disturbance has weakened the surficial soil and underlying geology; and, (vii) the extent to which the potential detrimental effects of such disturbance have been mitigated. Univariate analysis is not scientifically robust.
- Relevance of the Landslide Analysis to the ACP Project has not been established. Construction of the pipeline in the MNF will not result in permanent cut slopes, fill slopes or culvert

installations. Excavations along the pipeline route will be temporary and the original line and grade of the ground surface will be re-established to the extent practical so it is extremely unlikely that ground movements of the types observed at the 12 road fill, cut slope and culvert sites will occur along the pipeline route. Design and construction of pipeline access roads will address these issues. At the 2 sites where pre-existing landslides were identified, and may have been re-activated by the 23 June 2016 high-intensity precipitation event, observations by Geosyntec indicate that comparison to the ACP Project route through the MNF is not appropriate. First, ACP's experienced routers would not select a route across landslide terrain that appeared as active as that observed at the 2 pre-existing landslide sites (FR 86 MP 14.7 Williams River Road landslide, and SR 150 Highland Scenic Highway landslide). Second, during both the Geohazard Analysis Program desktop LiDAR analysis stage, and during the field reconnaissance stage conducted by Geosyntec, active landslide terrain of the type present at the 2 pre-existing landslide sites would have been identified and delineated. Third, the Professional Soil Scientists who conducted the Order 1 Soil Survey on behalf of ACP were instructed to note active landside terrain of the type present at the 2 pre-existing landslide sites, if it existed. No such observations were reported by the Professional Soil Scientists.

Attachment: Attachment A – Figures
Attachment B – Tables
Attachment C – Representative Photos
Attachment D – USFS response to ACP request for data (email dated 1/10/17)

Attachment A

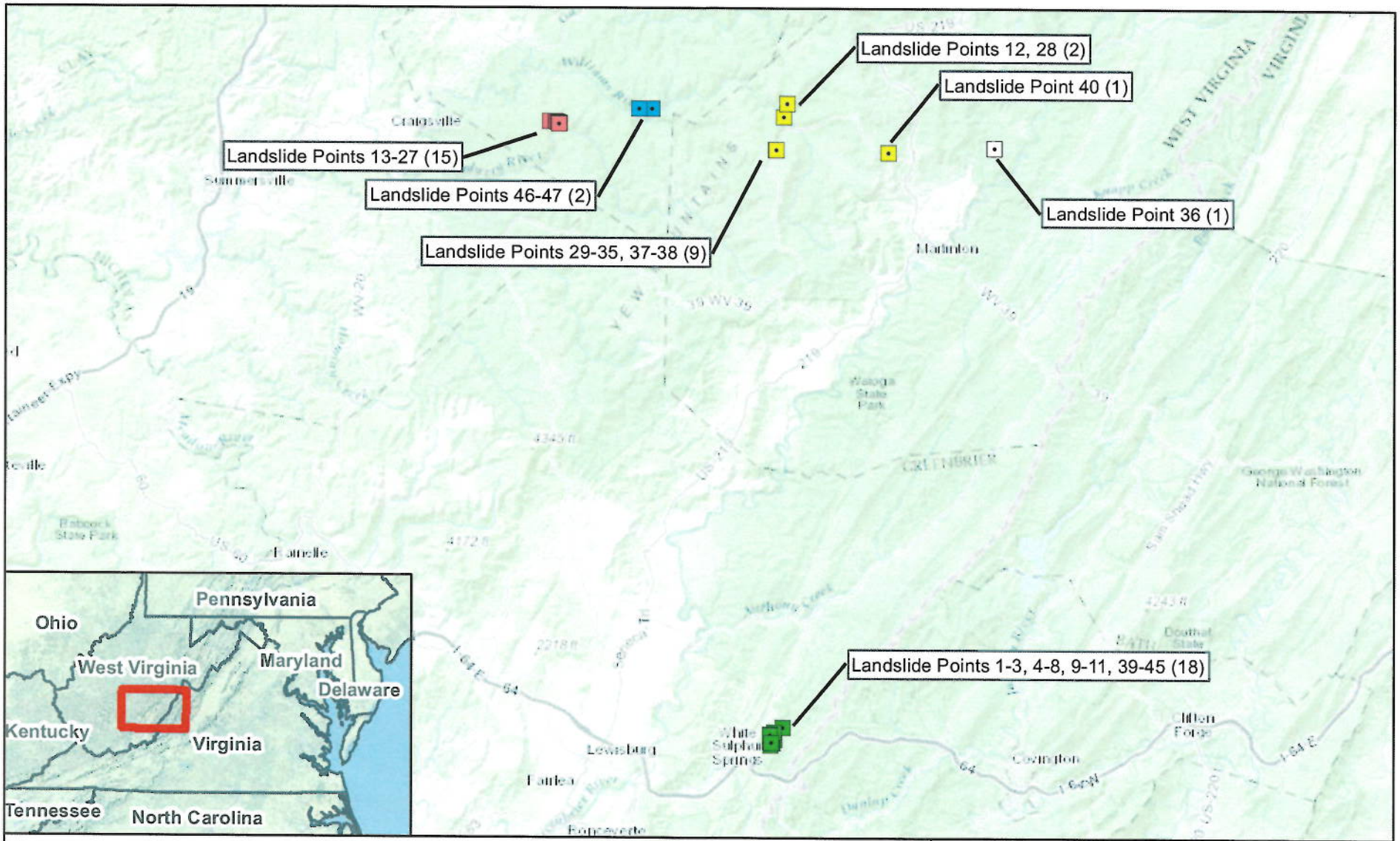
Figure 1 – Forest Service Landslide Analysis Review Key Plan Map

Figure 2 – Forest Service Landslide Analysis Review Landslide and Photo Locations FR 719

Figure 3 – Forest Service Landslide Analysis Review Landslide and Photo Locations FR 101

Figure 4 – Forest Service Landslide Analysis Review Landslide and Photo Locations FR 86

Figure 5 – Forest Service Landslide Analysis Review Landslide and Photo Locations SR 150



Legend

Landslides* Reported by US Forest Service

- FS Group 1 (FR 719) - Figure 2
- FS Group 2 (FR 101) - Figure 3
- FS Group 3 (FR 86) - Figure 4
- FS Group 4 (FR 150) - Figure 5

* Landslides reported in 23-Dec-2016 letter to FERC

Ungrouped (GPS data probably inaccurate)

N

0 10 Miles

Forest Service Landslide Analysis Review
Key Plan Map

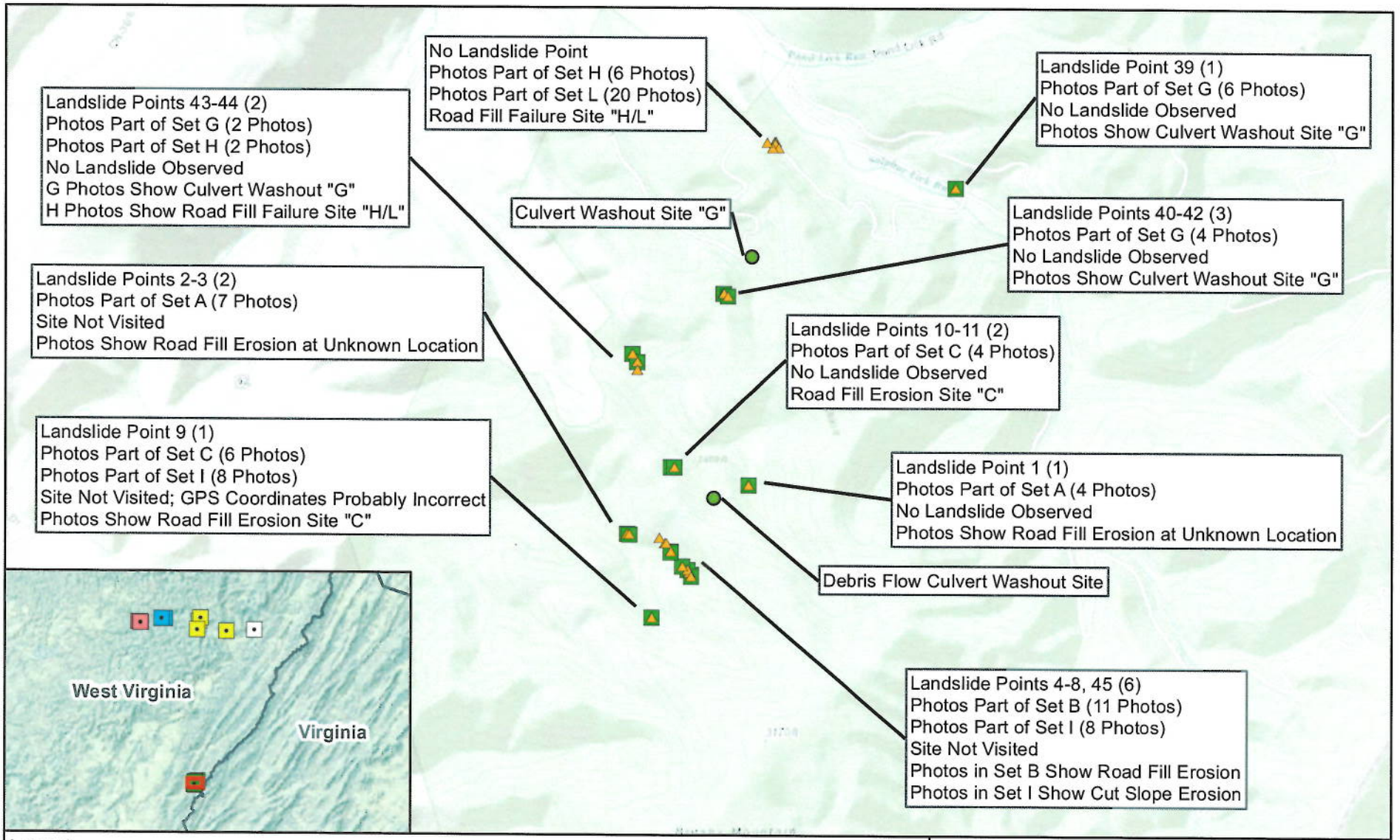
Webster, Pocahontas, and Greenbrier Counties
West Virginia

Geosyntec consultants

Figure 1

TXG0007.012.6200 | February 2017

H:\Dominion_ACP Network\GIS\MXD\FS_Landslide_Response_Fig_1.mxd 2/2/2017 8:26:20 AM



Legend

Landslide* Locations Provided by US Forest Service

FS Group 1 (FR 719)

Photo Locations Provided by US Forest Service

Photos (7 sets referenced to FR 719 sites)

* Landslides reported in 23-Dec-2016 letter to FERC

N

0 1,680 Feet

Forest Service Landslide Analysis Review
Landslide and Photo Locations FR 719

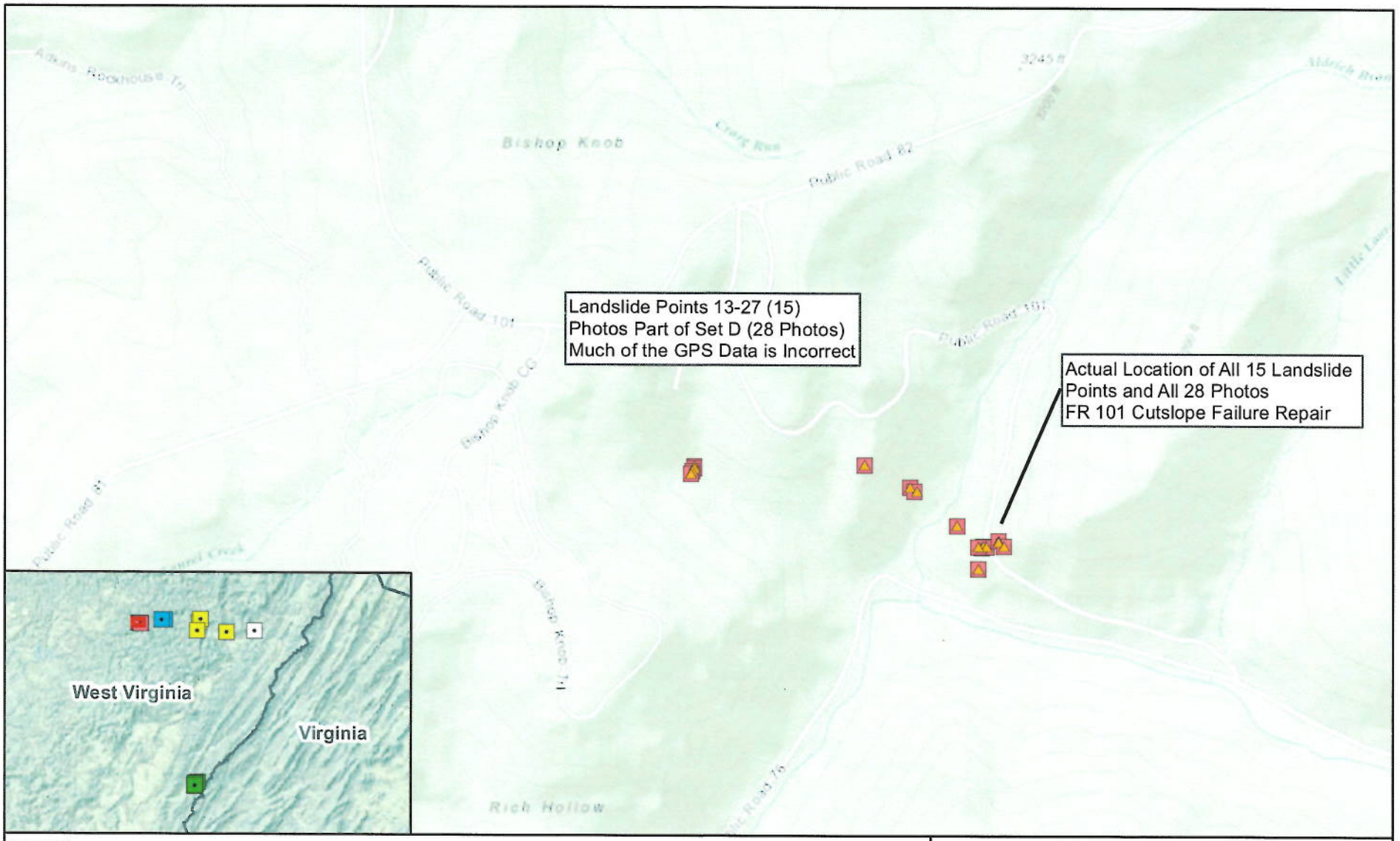
Greenbrier County
West Virginia

Geosyntec consultants

TXG0007.012.6200 | February 2017

Figure 2

H:\Dominion_ACP Network\GIS\MXD\FS_Landslide_Response_Fig_2.mxd 2/2/2017 3:25:41 PM



Legend

Landslide* Locations Provided by US Forest Service

- FS Group 2 (FR 101)

Photo Locations Provided by US Forest Service

- Photos (1 set referenced to FR 101 Slide Repair)

* Landslides reported in 23-Dec-2016 letter to FERC

N

0 1,260 Feet

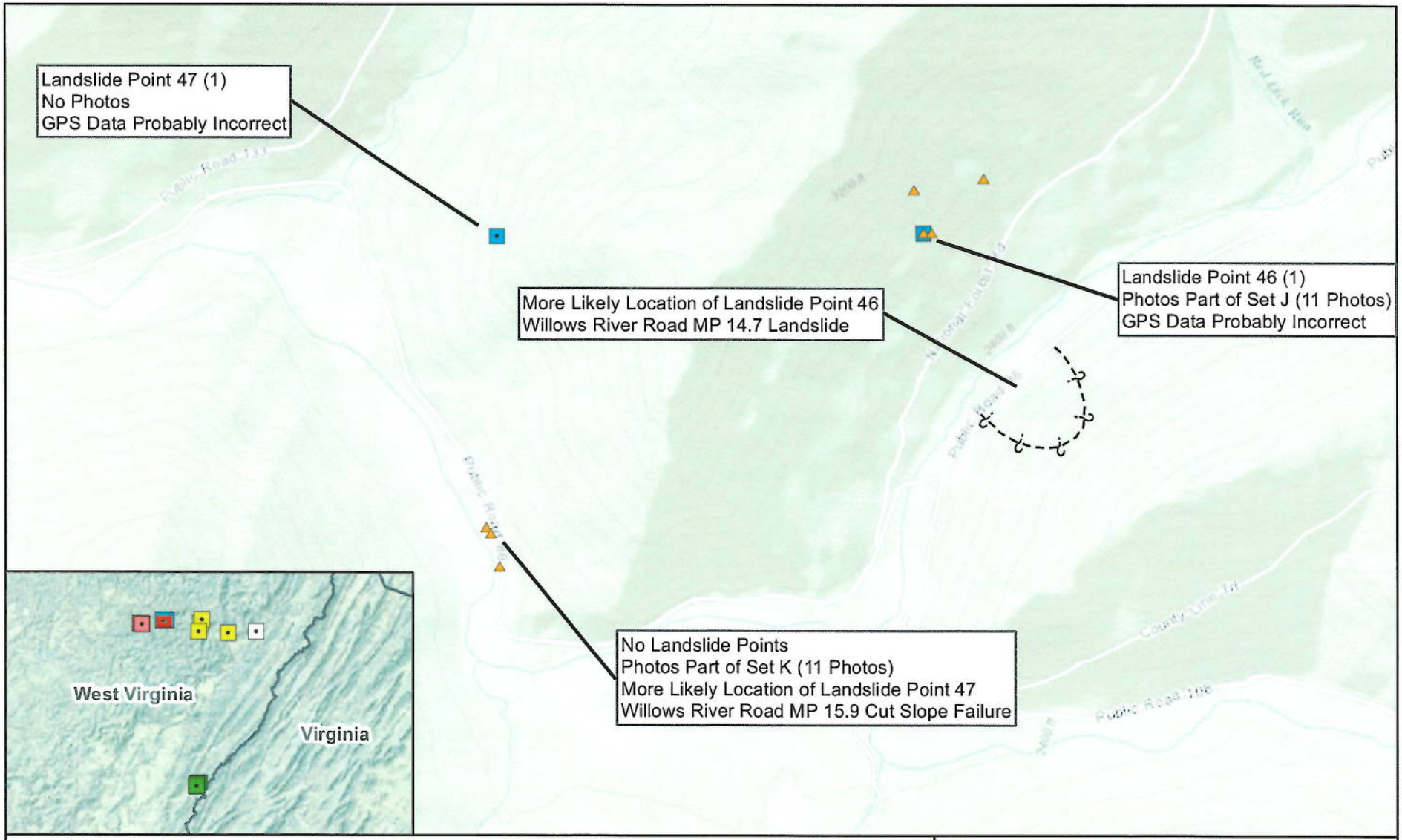
Forest Service Landslide Analysis Review
Landslide and Photo Locations FR 101

Webster County
West Virginia

Geosyntec consultants

TXG0007.012.6200	February 2017	Figure 3

H:\Dominion_ACP Network\GIS\MXD\FS_Landslide_Response_Fig_3.mxd 2/2/2017 3:08:36 PM



Legend

Landslide* Locations Provided by US Forest Service

- FS Group 3 (FR 86)

Photo Locations Provided by US Forest Service

- Photos (2 sets referenced to Rte 86 MP 14.7 and MP 15.9

* Landslides reported in 23-Dec-2016 letter to FERC

N

0 1,260 Feet

Forest Service Landslide Analysis Review
Landslide and Photo Locations FR 86

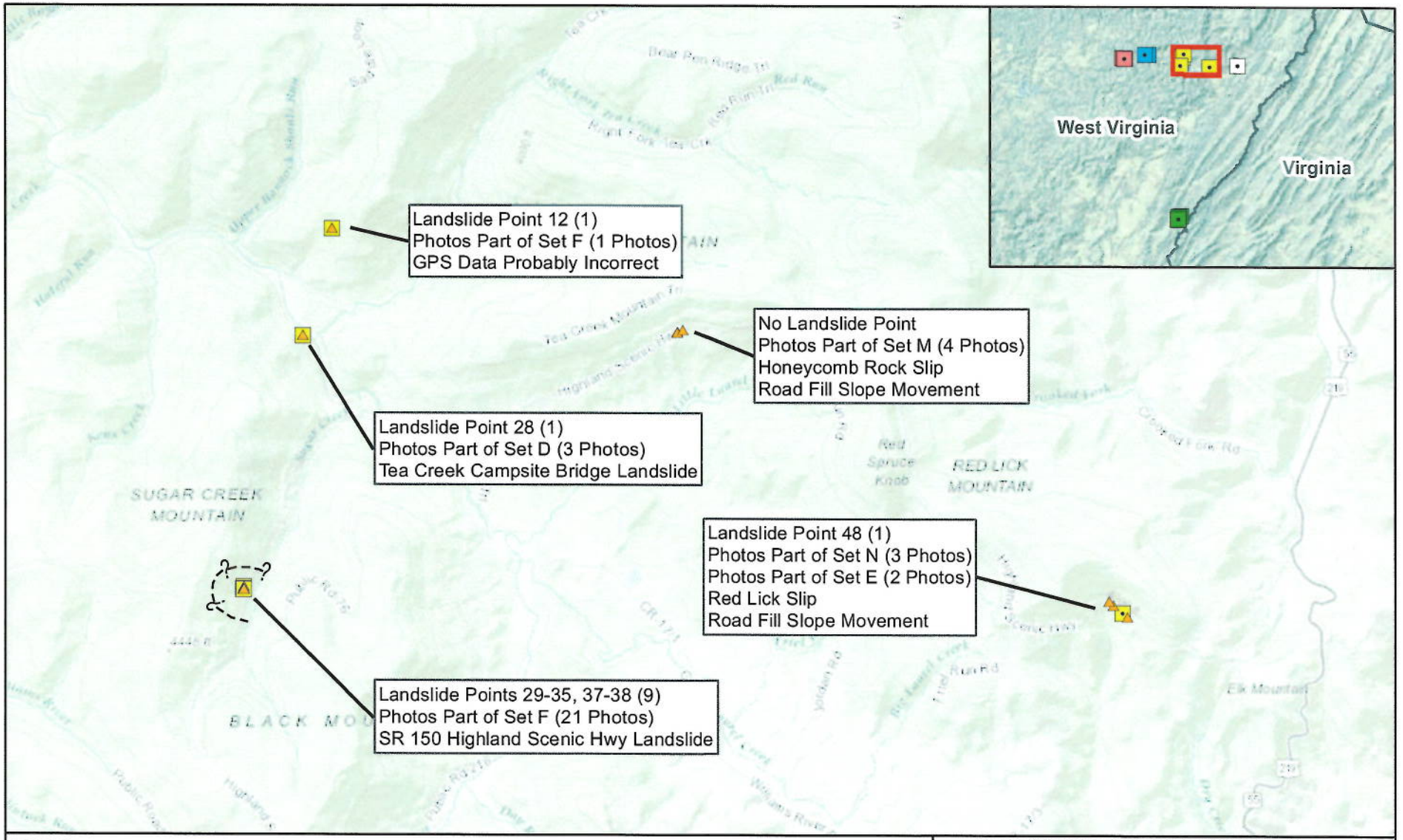
Webster County
West Virginia

Geosyntec consultants

TXG0007.012.6200 | February 2017

Figure 4

H:\Dominion_ACP Network\GIS\MXD\FS_Landslide_Response_Fig_4.mxd 2/2/2017 1:53:43 PM



Legend

Landslide* Locations Provided by US Forest Service

- FS Group 4 (FR 150)

Photo Locations Provided by US Forest Service

- Photos (4 sets referenced to FR/SR 150 Highland Scenic Highway, Honeycomb Rocks Slip, and Red Lick Slip)

N

0 5,400 Feet

* Landslides reported in 23-Dec-2016 letter to FERC

Forest Service Landslide Analysis Review
Landslide and Photo Locations
FR/SR 150 Highland Scenic Highway

Pocahontas County
West Virginia

Geosyntec consultants

TXG0007.012.6200	February 2017	Figure 5

H:\Dominion_ACP Network\GIS\MXD\FS_Landslide_Response_Fig_5.mxd 2/2/2017 1:56:31 PM

Attachment B - Tables

Table 1
Forest Service Landslide Points

Landslide Point	GPS Latitude	GPS Longitude	Landslide Group	Figure	Comments
1	37.816944	-80.246944	1	2	Road Fill Failure at unknown location
2	37.815346	-80.252125	1	2	Road Fill Failure at unknown location
3	37.815320	-80.252058	1	2	Road Fill Failure at unknown location
4	37.814722	-80.250278	1	2	Road Fill / Cut Slope Erosion at unknown location
5	37.813950	-80.249441	1	2	Road Fill / Cut Slope Erosion at unknown location
6	37.814107	-80.249567	1	2	Road Fill / Cut Slope Erosion at unknown location
7	37.813889	-80.249444	1	2	Road Fill / Cut Slope Erosion at unknown location
8	37.814220	-80.249811	1	2	Road Fill / Cut Slope Erosion at unknown location
9	37.812500	-80.251108	1	2	Road Fill Erosion Site "C"
10	37.817574	-80.250273	1	2	Road Fill Erosion Site "C"
11	37.817578	-80.250108	1	2	Road Fill Erosion Site "C"
12	38.340278	-80.233053	4	5	SR 150 Highland Scenic Highway Landslide
13	38.337873	-80.482165	2	3	FR 101 Cutslope Failure Repair Site
14	38.337825	-80.482177	2	3	FR 101 Cutslope Failure Repair Site
15	38.337755	-80.482230	2	3	FR 101 Cutslope Failure Repair Site
16	38.337683	-80.482285	2	3	FR 101 Cutslope Failure Repair Site
17	38.337895	-80.476663	2	3	FR 101 Cutslope Failure Repair Site
18	38.337335	-80.475222	2	3	FR 101 Cutslope Failure Repair Site
19	38.337222	-80.475083	2	3	FR 101 Cutslope Failure Repair Site
20	38.335805	-80.472939	2	3	FR 101 Cutslope Failure Repair Site
21	38.335843	-80.472886	2	3	FR 101 Cutslope Failure Repair Site
22	38.335833	-80.472778	2	3	FR 101 Cutslope Failure Repair Site
23	38.336370	-80.473728	2	3	FR 101 Cutslope Failure Repair Site
24	38.335833	-80.473055	2	3	FR 101 Cutslope Failure Repair Site
25	38.335983	-80.472391	2	3	FR 101 Cutslope Failure Repair Site
26	38.335833	-80.472219	2	3	FR 101 Cutslope Failure Repair Site
27	38.335278	-80.473053	2	3	FR 101 Cutslope Failure Repair Site
28	38.351944	-80.228886	4	5	FR 86 Tea Creek Campsite Bridge Cut Slope Failure
29	38.313323	-80.241380	4	5	SR 150 Highland Scenic Highway Landslide - pre-existing
30	38.313120	-80.241412	4	5	SR 150 Highland Scenic Highway Landslide - pre-existing
31	38.313103	-80.241423	4	5	SR 150 Highland Scenic Highway Landslide - pre-existing
32	38.313095	-80.241553	4	5	SR 150 Highland Scenic Highway Landslide - pre-existing
33	38.313083	-80.241553	4	5	SR 150 Highland Scenic Highway Landslide - pre-existing
34	38.313056	-80.241386	4	5	SR 150 Highland Scenic Highway Landslide - pre-existing
35	38.313105	-80.241548	4	5	SR 150 Highland Scenic Highway Landslide - pre-existing
36	38.313056	-80.008055	N/A	N/A	Ungrouped site (GPS coordinates probably incorrect)
37	38.313078	-80.241560	4	5	SR 150 Highland Scenic Highway Landslide - pre-existing
38	38.313056	-80.241386	4	5	SR 150 Highland Scenic Highway Landslide - pre-existing
39	37.826944	-80.238053	1	2	Culvert Washout Site "G"
40	37.823421	-80.247978	1	2	Culvert Washout Site "G"
41	37.823406	-80.247953	1	2	Culvert Washout Site "G"
42	37.823331	-80.247778	1	2	Culvert Washout Site "G"
43	37.821371	-80.251872	1	2	Culvert Washout Site "G"
44	37.821108	-80.251664	1	2	Culvert Washout Site "G"
45	37.814719	-80.250278	1	2	Road Fill / Cut Slope Erosion at unknown location
46	38.348331	-80.374442	3	4	MP 14.7 Williams River Road Landslide pre-existing
47	38.348331	-80.388056	3	4	MP 15.9 Williams River Road Cut Slope Failure
48	38.309883	-80.121467	4	5	SR 150 Red Lick Slip road fill movement

Attachment B - Tables

Forest Service Landslide Documentation Photos

Photo Set	Forest Service File Name	Number of Photos	Landslide Group	Figure	Comments
A	2_Slide_719 Cut slope	11	1	2	FR 719 Road fill failure at unkown location 11 photos clustered in the vicinity of Landslide Points 1,2,3 but all show the same fill slope failure site
B	3_FR_719 Slide right	11	1	2	FR 719 Road fill eroison at unknown location 11 photos clustered in the vicinity of Landslide Points 5- but all show the same road fill erosion site
C	5_FR_719_Slide	10	1	2	FR 719 Road Fill Erosion Site "C" 10 photos clusted in the vicinity of Landslide Points 9-11 but all show the same road fill erosion site
D	FR 101 Slide Repair	31	2	3	FR 101 Cut Slope Failure Repair Site 31 photos clustered in vicinity of Landslide Points 13-27 but all show same site (15 Landslide Points 1 cut slope)
E	FR 150 HSH	2	4	5	SR 150 Red Lick Slip pre-existing fill slope movement 2 photos in vicinity of Landslide Point 48 (1 Landslide Point but this is a fill slope movement site)
F	FR 150 Scenic Highway	22	4	5	SR 150 Highland Scenic Highway Pre-existing landslide 22 photos near Landslide Points 28-35 and 37-38 (10 Landslide Points but only one actual landslide)
G	FR 719B	12	1	2	FR 719 Culvert Washout Site "G" 12 photos clustered in vicinity of Landslide Points 39-44 (6 Landslide Points but this is a culvert fill washout)
H	FR_719B_Slide	8	1	2	FR 719 Road Fill Failure Site "H/L" 8 photos associated with recent sliver road fill failure but no Landslide Point
I	Rt 719 Fill slope	8	1	2	FR 719 Cut slope eroison at unknown location 8 photos clustered around Landslide Points 4 and 45 but all show same cut slope erosion site
J	Rte 86_MP_14.7	11	3	4	FR 86 Williams River Road MP 14.7 pre-exisitng landslid 11 photos clustered around Landslide Point 46 and all photos show re-activated landslide but in wrong place
K	Rte 86_MP_15.9	11	3	4	FR 86 Williams River Road MP 15.9 cut slope failure 11 photos clustered south of Landslide Point 47 but all photos show recent cut slope failure not a landslide
L	Slide 719B	20	1	2	FR 719 Road Fill Failure Site "H/L" 20 photos associated with recent sliver road fill failure but no Landslide Point
M	Honeycomb Rocks Slip	4	4	5	SR 150 Honeycomb pre-existing fill slope movement 4 photos related to culvert discharge channel erosion at toe of fill slope movement site - no Landslide Point
N	Red Lick Slip	3	4	5	SR 150 Red Lick Slip pre-existing fill slope movement 3 photos in the vicinity of Landslide Point 48 but all are related to fill slope movement site
	Total Number of Photos	**164**	**in 14 Sets**		

Attachment C

Representative Photos

Attachment C – Representative Photos

Photo 01 – Landslide Group 1 – FR 719 - Road Fill Failure Site "H/L" – 18-Jan-2017 GEO _0771
A sliver road fill was constructed over shallow steeply dipping bedrock. There is evidence that significant surface runoff flowed down the road and seeped into the road fill causing it to fail.

Photo 02 – Landslide Group 1 – FR 719 – Culvert Washout Site "G" - 18-Jan-2017 GEO _0774
An existing culvert inlet appears to have plugged and runoff crossed the roadway eroding the road fill.

*GEO photo reference indicates image from Geosyntec, FS photo reference indicates image from Forest Service

Photo 03 – Landslide Group 1 – FR 719 – Unidentified road fill failure – 28-Jul-2016 FS_P7280791
Evidence that surface runoff ponded on the roadway is visible left of the individual shown. This likely raised pore water pressure in the road fill which failed and subsequently erosion of the fill occurred.

Photo 04 – Landslide Group 1 – FR 719 – Debris Flow Culvert Washout – 18-Jan-2017 GEO _0777
This location was not assigned a Landslide Point, but was observed to be a significant culvert washout.

*GEO photo reference indicates image from Geosyntec, FS photo reference indicates image from Forest Service

Photo 05 – Landslide Group 1 – FR 719 – Road Fill Erosion Site "C" – 18-Jan-2017 GEO_0779
Runoff across the roadway (located above and left), resulting from a plugged culvert inlet, caused some erosion of the road fill and the cutting of a new erosion channel on the hillside below (right).

Photo 06 – Landslide Group 1 – FR 719 – Unidentified road fill failure – 28-Jul-2016 FS_P7280818
Fill failure and erosion caused by creek runoff diverted onto road at plugged culvert inlet (top right).

*GEO photo reference indicates image from Geosyntec, FS photo reference indicates image from Forest Service

Attachment C – Representative Photos

Photo 07 – Landslide Group 1 – FR 719 – Unidentified road cut erosion –28-Jul-2016 FS_P7280807
Significant runoff from hillside above and to the right resulted in erosion of the cut slope and deposition of soil, rock, and other debris on the existing road surface.

Photo 08 – Landslide Group 2 – FR 101 – Cut Slope Failure Repair –19-Jan-2017 GEO_0784
Fifteen Landslide Points were attributed to this one cut slope failure site (seen here after repair work).

*GEO photo reference indicates image from Geosyntec, FS photo reference indicates image from Forest Service

Photo 09 – Landslide Group 3 – FR 86 – MP 14.7 Williams River Road –26-Jul-2016 FS_P7260421
Pre-existing landslide site on the west side of the Williams River that appears to have been recently reactivated by high-intensity precipitation. Geosyntec was unable to visit this site.

Photo 10 – Landslide Group 3 – FR 86 – MP 15.9 Williams River Road –26-Jun-2016 FS_P7260488
Cut slope failure on east side of the Williams River. Geosyntec was unable to visit this site.

*GEO photo reference indicates image from Geosyntec, FS photo reference indicates image from Forest Service

Photo 11 – Landslide Group 4 – SR 150 Highland Scenic Highway Landslide –19-Jan-2017– GEO_0792
Highway construction resulted in significant excavation into the toe of this large landslide which extends over 1,000 feet upslope and there appears to be ongoing cut slope maintenance issues here.

Photo 12 – Landslide Group 4 – FR 86 Cut slope failure -Tea Creek Campsite–19-Jan-2017–GEO_0800
On west side of Williams River a small cut slope failure occurred at the toe of an existing landlside.

*GEO photo reference indicates image from Geosyntec, FS photo reference indicates image from Forest Service

Photo 13 – Landslide Group 4 – SR 150 Honeycomb Rocks Slip fill slope –19-Jan-2017– GEO_0792
Forest Service photos show erosion of a lined culvert discharge channel at the toe of the buttressed large road fill movement site (culvert is in lower left corner of photo).

Photo 14 – Landslide Group 4 – SR 150 Red Lick Slip fill slope site –19-Jan-2017– GEO_0804
This is a large road fill site where movement may be ongoing but no landslide was observed.

*GEO photo reference indicates image from Geosyntec, FS photo reference indicates image from Forest Service

Jaclyn Martin

From: Sara Throndson
Sent: Monday, March 06, 2017 9:29 AM
To: Coleman, Amy - FS
Cc: Jaclyn Martin
Subject: RE: ACP's Botanical Survey Data
Attachments: ACP_NNIS_MNF_Poly.zip; ACP_NNIS_MNF_Pts.zip; Surveyed Non-native invasive species on the MNF-5 Route, MP 44 to 45.pdf; Surveyed Non-native invasive species within the MNF.PDF

Hi Amy, Please see attached shapefiles and maps of NNIS as you requested. This should be the last piece of your information request.

Please let me know if you need anything else!

Happy Monday! Sara

Sara Throndson
Office 612-347-7113 I Cell 612-716-7812

From: Coleman, Amy - FS [mailto:amycoleman@fs.fed.us]
Sent: Tuesday, February 14, 2017 9:36 AM
To: Sara Throndson
Subject: FW: ACP's Botanical Survey Data

Hi Sara,

Ron Polgar, the botany technician for the Forest, is entering the data from the 2015 and 2016 botanical surveys for ACP into our database but needs some additional information (see below). Kent suggested I forward this request to you. Thank you in advance for your help.

Best,

Amy Coleman
Pathways Ecologist
Forest Service
Monongahela National Forest, Supervisor's Office
p: 304-636-1800 x292
amycoleman@fs.fed.us
200 Sycamore Street
Elkins, WV 26241
www.fs.fed.us
Caring for the land and serving people

From: Polgar, Ronald A -FS
Sent: Tuesday, January 17, 2017 4:11 PM

To: Bailey, Whitney - FS <whitneybailey@fs.fed.us>; Coleman, Amy - FS <amycoleman@fs.fed.us>
Subject: ACP's Botanical Survey Data

Whitney or Amy,

I am now wrapping up NRIS data entry for ACP's 2015 and 2016 botanical surveys for the pipeline corridor and access roads, but I have not been able to locate the following data:

1. I only have a shapefile for one occurrence of Small Whorled Pagonia on MNF; ACP's .pdf maps for Rev 11a show two. I would like the other one and also the one that is on Seneca State Forest since it is within the MNF Proclamation Boundary.

2. Allstar Ecology stated that they did not have positive ID's on two RFSS found in 2016, namely Appalachian oak fern and bristly black currant; a sample of the fern was taken, so do they now have a positive ID on it? Allstar stated that the currant will take a revisit in 2017 when it is flowering or fruiting.

3. I need NNIS point and/or polygon shapefiles for all hi-priority invasive plant species found on the MNF in 2016 during botanical surveys on ACP's Rev11a mainline and access roads.

4. I also need a species list and NNIS point and/or polygon shapefiles for all hi-priority invasive plant species found on the MNF in 2015 during botanical surveys on ACP's MNF5 alternative mainline between MP 44 and MP 45 on Peters Mountain near Dunmore, WV. Allstar surveyed this area in September, 2015.

If either of you would forward this request through the proper channels, I would greatly appreciate it, thanks Ron.

Ron Polgar
Biological Science Technician (Plants)

Forest Service
Monongahela National Forest, Supervisor's Office

p: 304-636-1800 x272
rpolgar@fs.fed.us

200 Sycamore St.
Elkins, WV 26241
www.fs.fed.us

Caring for the land and serving people

Dominion Resources Services, Inc.
5000 Dominion Boulevard,
Glen Allen, VA 23060

March 6, 2017

Clyde Thompson, Forest Supervisor
U.S. Forest Service
Monongahela National Forest
Forest Supervisor's Office
200 Sycamore Street
Elkins, WV 26241

RE: Atlantic Coast Pipeline, LLC, Atlantic Coast Pipeline Project
Status of Steep Slope Design Coordination in the Monongahela National Forest and George Washington National Forest

Dear Mr. Thompson:

Atlantic Coast Pipeline, LLC (Atlantic) requests your assistance in moving forward with the steep slope design coordination between Atlantic the United States Forest Service (USFS).

In a letter dated 24 October 2016, the USFS requested site-specific construction designs for ten slope locations on Forest Service lands. We mutually agreed to complete two sample locations to demonstrate the approach. In a meeting at the North Ranger District office on 21 November 2016, Atlantic presented the preliminary designs for these two slopes, introduced the Best-in-Class program to be implemented during construction, and reviewed the status of the Geohazard Program. Seven days prior to the meeting, Atlantic provided to the USFS draft site designs, BIC Typical Scenarios and Incremental Controls for USFS review; however, these materials were not distributed internally to USFS participants until the meeting started. This did not allow the geologists and geotechnical specialists time to adequately review or comment during this meeting.

At the November meeting, we mutually agreed that multiple, small-group technical work sessions were needed, in order to effectively coordinate design details in response to your 24 October request. These meetings were to be scheduled jointly between USFS and Atlantic geologists and geotechnical engineers, as soon as possible. Atlantic has repeatedly requested this engagement and stands ready to meet at the convenience of USFS technical staff; however, we have not been granted a single technical work session. **We seek your support in scheduling face-to-face technical working sessions as agreed in November**, in order to resolve the technical issues and concerns raised.

During a broader, telephonic meeting convened on 8 December 2016, the USFS geologist and engineers offered verbal comments on the preliminary site-specific plans that we provided on 14 November. Atlantic reiterated the need for face-to-face technical work sessions at that time. We mutually agreed the first of these would be convened as early as the second week of January. The USFS further agreed to provide a written list of questions, to clarify its verbal requests. To date, Atlantic has not received these questions or comments. **We request that you provide written comments and marked drawings as offered in December, and list any data considered necessary to complete these site specific designs.**

In addition to the technical work sessions, we mutually agreed that an inter-disciplinary team would meet separately to review the documentation of effectiveness of the measures proposed. Atlantic has assembled the requested information and will present this, at such time the inter-disciplinary team meets. Unfortunately, since the December 8th meeting, the USFS advised that the first USFS opportunity to meet

is 24 March 2017. **We respectfully request that you schedule an inter-disciplinary teleconference not later than March 10.**

At the December meeting, the USFS also requested a construction narrative to accompany the two site specific designs. Atlantic anticipated developing this narrative in coordination with the USFS, during the technical working sessions. However, given the challenges to date, during the 17 February 2017 meeting described below Atlantic also requested the USFS provide a written request to establish what the construction narrative should include. This information was provided on 27 February 2017 and we will use this guidance to prepare a narrative for the technical work session as detailed above.

In response to USFS requests in the November and December meetings, Atlantic's consultant conducted a slope stability analysis of the two sample locations. We updated the site specific plans based on verbal comments captured during the meeting. This slope stability analysis and updated plans were submitted formally to you and on the FERC record on 10 January 2017.

Unfortunately, the first technical session was not scheduled until 17 February 2017, and was conducted remotely. Even then, the USFS technical professionals again did not receive a USFS internal distribution of Atlantic's submitted January 10th design information in time to conduct a thorough review. As a result, the February meeting failed to produce appreciable progress. Atlantic remains committed to in-person dialogue between our technical experts. We stand ready to meet at your convenience.

Atlantic appreciates the comments from the USFS and looks forward to continuing to work with you on the ACP. Please contact Richard B. Gangle at (804) 273-2814 or Richard.B.Gangle@dom.com if there are questions regarding this letter.

Sincerely,

Leslie Hartz
Vice President, Pipeline Construction

cc: Jennifer Adams, Special Projects Coordinator, U.S. Forest Service
Richard B. Gangle, Dominion Resources Services, Inc.

Dominion Resources Services, Inc.
5000 Dominion Boulevard,
Glen Allen, VA 23060

March 10, 2017

BY OVERNIGHT (OR EXPRESS) MAIL

Mr. Clyde Thompson
Forest Supervisor
U.S. Forest Service
Monongahela National Forest
200 Sycamore Street
Elkins, WV 26241

Re: Dominion Transmission, Inc., Atlantic Coast Pipeline:
Submittal of Atlantic Coast Pipeline Revised Management Indicator Species Report
Monongahela and George Washington National Forests

Dear Mr. Thompson,

Atlantic Coast Pipeline, LLC (Atlantic) is a company formed by four major U.S. energy companies – Dominion, Duke Energy, Piedmont Natural Gas, and Southern Company Gas. The company was created to develop, own, and operate the proposed Atlantic Coast Pipeline (ACP), an approximately 600-mile-long, interstate natural gas transmission pipeline system designed to meet growing energy needs in Virginia and North Carolina. For more information about the ACP, visit the company's website at www.dom.com/acpipeline. Atlantic has contracted with Dominion Transmission, Inc. (DTI), a subsidiary of Dominion, to permit, build, and operate the ACP on behalf of Atlantic.

A portion of the ACP crosses U.S. Forest Service (USFS) lands within the Monongahela National Forest (MNF) in West Virginia and the George Washington National Forest (GWNF) in Virginia. Atlantic has prepared a revised report describing the potential impacts of the ACP on Management Indicator species designated in the GWNF and MNF. This revised report addresses comments and recommendations received from USFS and FERC on the November 15, 2016 draft report. The revised Management Indicator Species Report is enclosed for your consideration.

We would appreciate your review of the enclosed revised report and look forward to continuing to work with you on the ACP. Please contact Richard B. Gangle at (804) 273-2814 or Richard.B.Gangle@dom.com, if there are questions regarding this report. Please direct written responses to:

Richard B. Gangle
Dominion Resources Services, Inc.
5000 Dominion Boulevard
Glen Allen, Virginia 23060

Sincerely,

Robert M. Bisha
Technical Advisor, Atlantic Coast Pipeline

cc: Jennifer Adams, U.S. Forest Service
Troy Morris, U.S. Forest Service
Kent Karriker, U.S. Forest Service
Richard B. Gangle, Dominion

Attachments: Atlantic Coast Pipeline Revised Management Indicator Species Report
Monongahela National Forest and George Washington National Forest

Dominion Resources Services, Inc.
5000 Dominion Boulevard,
Glen Allen, VA 23060

March 10, 2017

BY OVERNIGHT (OR EXPRESS) MAIL

Mr. Clyde Thompson
Forest Supervisor
U.S. Forest Service
Monongahela National Forest
200 Sycamore Street
Elkins, WV 26241

Re: Dominion Transmission, Inc., Atlantic Coast Pipeline:
Submittal of Atlantic Coast Pipeline Draft Biological Evaluation –
Monongahela and George Washington National Forests

Dear Mr. Thompson,

Atlantic Coast Pipeline, LLC (Atlantic) is a company formed by four major U.S. energy companies – Dominion, Duke Energy, Piedmont Natural Gas, and Southern Company Gas. The company was created to develop, own, and operate the proposed Atlantic Coast Pipeline (ACP), an approximately 600-mile-long, interstate natural gas transmission pipeline system designed to meet growing energy needs in Virginia and North Carolina. For more information about the ACP, visit the company's website at www.dom.com/acpipeline. Atlantic has contracted with Dominion Transmission, Inc. (DTI), a subsidiary of Dominion, to permit, build, and operate the ACP on behalf of Atlantic.

As you are aware, a portion of the ACP crosses U.S. Forest Service (USFS) lands within the Monongahela National Forest (MNF) in West Virginia and the George Washington National Forest (GWNF) in Virginia. Atlantic has been conducting field routing and environmental/ biological surveys and analyses along the proposed ACP route, including within the MNF and GWNF, to collect information needed by the Federal Energy Regulatory Commission (FERC), USFS, and other regulatory and land managing agencies to review and permit the ACP.

Atlantic prepared the enclosed Draft Biological Evaluation (BE) to assess impacts and identify conservation measures for avoiding or minimizing impacts on USFS sensitive species. The Draft BE addresses comments provided by USFS staff in a letter dated September 30, 2016 on the Preliminary Draft BE, which Atlantic provided on August 15, 2016; incorporates the results of additional field work and analyses conducted since Atlantic submitted an update of the Preliminary Draft BE to the USFS on November 22, 2016; addresses an Environmental Information Request from FERC staff dated October 26, 2016; and addresses various FERC Staff Recommendations from the Draft Environmental Impact Statement for the ACP and Supply Header Projects, which was issued on December 30, 2016.

As requested by the Forest Service, Atlantic has completed a Soil Erosion and Sediment Modeling report. This report is included as Appendix H of the Draft BE. The report assesses the potential for increased erosion and transport of sediments into nearby streams during construction activities.

Atlantic would appreciate your review of the enclosed Draft BE and look forward to continuing to work with you on the ACP. Please contact Richard B. Gangle at (804) 273-2814 or Richard.B.Gangle@dom.com, if there are questions regarding this report. Please direct written responses to:

Richard B. Gangle
Dominion Resources Services, Inc.
5000 Dominion Boulevard
Glen Allen, Virginia 23060

Sincerely,

Robert M. Bisha
Technical Advisor, Atlantic Coast Pipeline

cc: Jennifer Adams, U.S. Forest Service
Troy Morris, U.S. Forest Service
Kent Karriker, U.S. Forest Service
Richard B. Gangle, Dominion

Attachments: Privileged Version of the Atlantic Coast Pipeline – Draft Biological Evaluation for the Monongahela National Forest and George Washington National Forest (CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE)

Public Version of the Atlantic Coast Pipeline – Draft Biological Evaluation for the Monongahela National Forest and George Washington National Forest

State/Commonwealth Agencies

West Virginia Agencies

West Virginia Division of Culture and History

WEST VIRGINIA
Division of Culture and History

The Culture Center
1900 Kanawha Blvd., E.
Charleston, WV 25305-0300
Randall Reid-Smith, Commissioner
Phone 304.558.0220 • www.wvculture.org
Fax 304.558.2779 • TDD 304.558.3562
EEO/AA Employer

February 9, 2017

Mr. Robert Bisha
Project Director Atlantic Coast Pipeline
Dominion Resources Services, Inc.
5000 Dominion Blvd.
Glen Allen, VA 23060

RE: Atlantic Coast Pipeline
FERC Docket #: PF15-6-000
FR#: 15-171-MULTI-24 and 15-171-MULTI-25

Dear Mr. Bisha:

We have reviewed the revised report titled "Phase I Historic Architectural Survey of the Atlantic Coast Pipeline Project, West Virginia Addendum 4" that ERM prepared for the above-referenced project to determine potential effects to cultural resources. As required by Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations, 36 CFR 800: "Protection of Historic Properties," we submit our comments.

According to submitted information, the route of the proposed Atlantic Coast Pipeline has been significantly modified in comparison to previous reports submitted to our office. It is our understanding ERM will oversee survey and documentation efforts for architectural properties through the remainder of the undertaking. The aforementioned Addendum 4 report does not identify or evaluate all architectural resources located within the new pipeline route's area of potential effect (APE), though it does evaluate a total of five (5) properties. We anticipate that future addendum reports, if more are deemed necessary, will evaluate previously identified and unidentified properties located within the new APE. Following submission of the forthcoming addendum reports, ERM will prepare a supplemental report summarizing survey findings from Dovetail's previous survey work, updating those findings in relation to the pipeline re-route to indicate which resources remain within the APE, supplying additional requested information about particular resources in response to previous comments from our office, and providing assessment of effects for all resources determined eligible for or included in the National Register of Historic Places.

Architectural Resources:
We have reviewed the submitted report in which ERM evaluated five (5) architectural resources located within the project APE. We concur with ERM's recommendation that three (3) of the documented properties are *not eligible* for or included in the National Register of Historic Places: PH-0904, PH-0905, and PH-0911. We also concur with their recommendations that two (2) of the properties—the folk Victorian home located at 900 Old Huttonsville Turnpike Road (PH-0903) and the former West Virginia Pulp and Paper Company logging railroad (PH-0902)—are *eligible* for inclusion in the National Register. The folk Victorian home (PH-0903) is eligible under Criterion C because it embodies the

distinctive characteristics of the late Victorian architecture, and under Criterion A because the property illustrates developments in late-nineteenth century rural agricultural society. Though it has undergone a few changes over time, it retains integrity of location, design, setting, with some workmanship and materials, and feeling. The WVP&PC logging railroad is eligible under Criterion A due to its association with transportation and commerce. It retains historic integrity of location, setting, and feeling. We understand that future reports may document additional resources and assess effects to properties deemed eligible. We will provide additional comments upon receipt of that documentation.

Cemetery Resources:
The submitted report documents five (5) cemeteries that are located within the direct and indirect areas of potential effect for the proposed undertaking. These cemeteries are the unnamed cemetery in Lewis County (46-LE-74), the unnamed cemetery in Pocahontas County (46-PH-779), the Hanifan Cemetery in Randolph County (46-RD-722), the Elbon Cemetery in Upshur County (46-UP-319), and the Simmons Cemetery in Upshur County (46-UP-331). We concur with ERM's recommendation that these five (5) cemeteries are *not eligible* for or included in the National Register of Historic Places under Criteria A, B, C, D, or Criteria Consideration C or D. No further consultation is necessary regarding these specific cemetery resources; however, we ask that you contact our office if your project should change.

We appreciate the opportunity to be of service. *If you have questions regarding our comments or the Section 106 process, please contact Lora A. Lamarre-DeMott, Senior Archaeologist, or Mitchell K. Schaefer, Structural Historian, at (304) 558-0240.*

Sincerely,

Susan M. Pierce

Susan M. Pierce
Deputy State Historic Preservation Officer

SMP/MKS

WEST VIRGINIA
Division of Culture and History

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EEO/AA Employer

February 23, 2017

Mr. Robert Bisha
Technical Advisor, Atlantic Coast Pipeline
Dominion Resources Services, Inc.
5000 Dominion Blvd.
Glen Allen, VA 23060

RE: Atlantic Coast Pipeline; FERC Docket # PF15-6-000
Phase II Investigations at 46PH775
FR#: 15-171-MULTI-24

Dear Mr. Bisha:

We have reviewed the draft report titled *Phase II Investigations for the Atlantic Coast Pipeline Project: Site 46PH775, Pocahontas County, West Virginia*, which was submitted for the above referenced project to determine potential effects to cultural resources. As required by Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations, 36 CFR 800: "Protection of Historic Properties," we submit our comments.

Archaeological Resources:
The submitted report presents the result of Phase II investigations that were recently completed at site 46PH775, which was identified as a lithic scatter dating to the Middle and Late Archaic periods. Although no evidence of stratified deposits was observed during the Phase I survey, the presence of tools and a higher density of artifacts in the site's northeast corner suggested the presence of cultural features. The site extends beyond the proposed project's direct Area of Potential Effect (APE). However, only the portion of the site within the APE was investigated during the Phase II investigation.

The Phase II field work included mechanically stripping the plowzone from 20 blocks, each measuring approximately 10 meters long by 6 meters wide, and shovel scrapping the exposed surface to identify any features that might be present. Although additional lithic artifacts were recovered, including a fragment of thermally altered rock, no cultural features were identified. The report recommends that 46PH775 be considered not eligible for inclusion in the National Register of Historic Places due to its lack of research potential.

While we concur that the portion of 46PH775 within the APE lacks research potential, we cannot concur that the entire site is not eligible for the National Register because only the portion within the APE was investigated. In our opinion, the proposed project, as currently designed, will have no adverse effect on 46PH775. We concur that no further archaeological investigations are necessary for 46PH775 provided that the portion of the site located outside of the APE continues to be avoided. Because we are not requesting changes to the draft report, please submit a CD containing a PDF file of the report. We also request shapefiles for the portion of the site that underwent the Phase II investigation.

We appreciate the opportunity to be of service. *If you have questions regarding our comments or the Section 106 process, please contact Lora A Lamarre-DeMott, Senior Archaeologist, at (304) 558-0240.*

Sincerely,

Susan M Pierce
Deputy State Historic Preservation Officer

SMP/LLD

West Virginia Division of Natural Resources

Sara Throndson

From: Sara Throndson
Sent: Monday, February 27, 2017 9:45 PM
To: 'Elliott, Danielle A'
Cc: Clayton, Janet L; Brown, Clifford L; Stout, Elizabeth
Subject: RE: FW: ACP - Greenbrier geotech work
Attachments: 2017.02.24_ Geotech Work Plan - Greenbrier River_02.pdf

Please see attached.

Thank you, Sara

Sara Throndson
Office 612-347-7113 I Cell 612-716-7812

From: Elliott, Danielle A [mailto:Danielle.A.Elliott@wv.gov]
Sent: Monday, February 27, 2017 12:19 PM
To: Sara Throndson
Cc: Clayton, Janet L; Brown, Clifford L; Stout, Elizabeth
Subject: RE: FW: ACP - Greenbrier geotech work

Hello Sara,
I realized that neither I or Cliff received anything from you last Friday. Did I happen to miss an email containing your plans? I thought I would reach out since you are planning on doing the investigative work on March 7th.

Thank you!

Danielle A. Elliott
WV DNR Coordination
Office: 304-637-0245 ext. 2043
Cell: 304-550-5057

-

Geosyntec consultants

520 Pike Street, Suite 1375
Seattle, Washington 98101
PH 206.496.1456

www.geosyntec.com

24 February 2017
Project TXG0007-012-6401

Colin Olness, PE, Contractor
Atlantic Coast Pipeline - Construction
99 Edmiston Way
Buckhannon, WV 26201

SENT BY EMAIL TO: Colin.P.Olness@dom.com

Subject: Revised Drilling Investigation Work Plan - Greenbrier River Crossing, WV
Dominion Atlantic Coast Pipeline (ACP) Project - Segment AP-1 MP 76 / 77

Dear Mr. Olness:

This letter presents an update to the "Proposed Drilling Investigation Work Plan" letter that we presented on Monday 13 February 2017. Geosyntec Consultants, Inc. (Geosyntec) has prepared the work plan described in this letter to facilitate performing a geotechnical drilling investigation for the Atlantic Coast Pipeline (ACP) Project at the Greenbrier River Crossing. The geotechnical drilling investigation is required to characterize riverbed and subsurface soil and rock conditions at the crossing to evaluate feasibility of, and to develop the design for, the proposed cofferdams that will be used to facilitate excavation of the trench and installation of the pipeline. There is some urgency to proceed with this drilling investigation work because the environmental window for instream work at this site closes on Friday 31 March 2017. We propose to commence the drilling investigation work no later than Tuesday 7 March 2017.

We propose that the drilling investigation work be carried out by Terra Testing Inc. (Terra) of Washington, PA who have performed similar work on other projects for Geosyntec. Terra will provide a driller with more than 25 years-experience, including specific experience drilling near and in rivers. A Terra representative and a Geosyntec representative visited the site on Tuesday 21 February 2017 to finalize details of their drilling investigation work plan presented in Attachment 1. Terra proposes to use a Diedrich D-50 type drilling rig mounted on a rubber tracked vehicle platform as shown in the photo at the top of Page 2. Borehole depths have been selected based on site topography and to allow for up to 10 feet of cover for installation of the 42 inch pipeline beneath the riverbed.

Drilling Rig Proposed by Terra Testing, Inc.

The drilling investigation would entail advancing two land-based nominal 4 to 6 inch diameter vertical boreholes to a depth of 40 feet (or to the bedrock surface and a maximum 10 feet into the bedrock) to sample overburden and bedrock materials, near locations A and B shown on the plan at the top of Page 3, and described respectively below as follows:

- A - on the private property on the east side (left bank) of the river, 25 feet south of the proposed pipe centerline alignment; and,
- B - on the Greenbrier Trail on the west side (right bank) of the river, 25 feet south of the proposed pipe centerline alignment (access along the trail from Clover Lick Depot).

These holes would be fully grouted with a cement/bentonite/water mix upon completion.

The drilling investigation will also entail drilling up to three in-river 4 to 6 inch diameter vertical boreholes to a depth of 20 feet (or to the bedrock surface and a maximum 10 feet into bedrock) at locations as follows:

- along the edge of the wetted perimeter of the east side (left bank) of the river, 25 feet south of the proposed pipe centerline alignment (near point P040 on the plan on Page 3);
- on the surface of a midstream bar, 25 feet south of the proposed pipe centerline alignment (near the red square in the plan on Page 3); and

- along the edge of the wetted perimeter of the west side (right bank) of the river, 25 feet south of the proposed pipe centerline alignment (near point P041 on the plan on Page 3).

Plan of the Greenbrier River Crossing Showing Approximate Location of Boreholes

In-river drilling will only be carried out if the water level is low enough to allow a safe traverse by the drilling rig from the east side to the west side to drill the borehole and to traverse back upon completion of the borehole. Weather conditions and water levels will be monitored to guide decisions regarding safe operations. The drilling rig will be removed from the river at the end of each day. The drilling rig has a winch should it be needed to get back out of the river.

Access to the river will be achieved on the east bank at the point shown in the photo at the top of Page 4. The drilling rig has a narrow footprint and it should be possible to maneuver it between the trees but there is a remote possibility that one small diameter (6 inch DBH) dead tree may need to be removed. If this is required, the stump will be cut flush to the ground and the wood will be bucked into lengths manageable to move by hand. Areas disturbed by the drilling rig, along the bank will be raked smooth, to the extent practical, and covered with locally sourced straw.

Drill Access Route on East Side of River

Water levels measured during the site visit on Tuesday 21 February 2017 ranged from 6 to 24 inches (average 12 inches) and these depth of water can be accommodated by the proposed drilling rig. We propose to complete the drilling of up to three boreholes within the wetted perimeter of the river first, as the drill rig will be steam cleaned to remove all deleterious material such as dirt and oil and grease from the tracks and under-chassis, prior to mobilization to the site. Once the drilling rig is positioned at an in-river borehole location, floating absorbent booms will be deployed downstream of the drilling rig, in an arcuate concave upstream configuration and secured. These booms, illustrated in the photos at the top of Page 4, are specially designed to intercept and absorb any oily sheen that may appear on the water surface during drilling.

At each in-river borehole location, Terra will level the rig with outriggers and advance 4 ¼ inch diameter, sequential 5 foot long rods of hollow stem auger (HSA) through the alluvium beneath the river bed, obtaining samples of the river bed material at 2 ½ foot intervals in accordance with the Standard ASTM D-1586 Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils. If bedrock is encountered at a depth of 15 feet or less, Terra will place a 3 inch casing inside the 4 ¼ inch HSA and rotate it into the top of rock to create a seal to isolate the circulation of drilling fluids within the 3 inch casing. This will allow Terra to circulate water for NQ-3 rock coring. The 3 inch casing will have a "water-tee" at the top with a silt sock that will discharge into a steel tub supported above the water level on metal legs. This procedure should minimize release of sediment into the river.

Once each borehole is complete, water from the steel tub will be pumped through a floating discharge hose to a temporary containment located on land above normal high water level where it will infiltrate into the ground. The discharge hose will be secured to prevent the hose from floating downstream. The discharge hose will be connected to the pump on the drilling rig side with a ball valve that will be closed before the discharge hose is disconnected from the drilling rig to prevent backflow of water into the river. Terra proposes to grout only the bedrock portion of the shallow boreholes in the river in order to minimize the possibility of cementitious material getting into the water. The augers will be removed after being filled with water and slowly reverse-rotated out of the ground. An estimated 50 to 100 gallons of water will be required for coring each hole and this will be drawn directly from the river which should be permissible under the 1 January 2015 WV DEP minimum reporting threshold guidance.

Proposed Floating Absorbent Booms

Any sediment in the onshore containment area, and all cuttings from the drilling operation, will be containerized and removed from the site. The containment area will then be raked smooth, to the extent possible, and covered with locally sourced straw. We anticipate that the drilling work will take approximately five working days to complete (one day per borehole).

All the work will be conducted in accordance with a task specific Health and Safety plan that will include use of appropriate cold water aquatic gear (insulated overalls/chest water), life-jackets (PFDs), tether ropes, bottom probes, a small support boat if needed, and warming facilities (to be

provided by Terra). Geosyntec personnel will monitor the work and log the boreholes and will also work in accordance with a task specific Health and Safety Plan.

Details of a complimentary geophysical survey to be conducted at the site simultaneously with the drilling program, are provided in Attachment 2. A budget estimate for the proposed work will be submitted separately. On 21 February 2017, a reconnaissance grid survey, to obtain the river bottom bathymetry, was completed. The data should be available in the form of a river bottom contour plan and crossing profile early next week. This will assist in executing the in-river work.

We trust that the information contained herein meets your needs. We look forward to your favorable review and prompt approval of this revised plan. If there are additional details that you require or any questions that you have, please contact us.

Sincerely,

GEOSYNTEC CONSULTANTS, INC.

Tony Rice
Senior Principal Geotechnical Engineer

Logan Brant, Ph.D., P.E. (WV)
Senior Geotechnical Engineer

Attachments

1. Drilling Plan - Terra Testing, Inc., 23 February 2017

2. Complimentary Geophysical Survey - Hager-Richter Geoscience, Inc., 23 February 2017

Dominion Resources Services, Inc.
5000 Dominion Boulevard,
Glen Allen, VA 23060\

February 27, 2017

Ms. Carrie T. Brooks
West Virginia Division of Natural Resources
Office of Land and Streams
Building 74, Room 200
324 Fourth Avenue
South Charleston, WV 25303

RE: Dominion Transmission, Inc., Atlantic Coast Pipeline
Stream Activity Application – Greenbrier River

Dear Ms. Brooks:

Atlantic Coast Pipeline, LLC (Atlantic) is a company formed by four major U.S. energy companies – Dominion, Duke Energy, Piedmont Natural Gas, and Southern Company Gas. The company was created to develop, own, and operate the proposed Atlantic Coast Pipeline (ACP), an approximately 600-mile-long, interstate natural gas transmission pipeline system designed to meet growing energy needs in Virginia and North Carolina. Atlantic has contracted with Dominion Transmission, Inc. (DTI), a subsidiary of Dominion, to seek authorization from the Federal Energy Regulatory Commission under Section 7(c) of the Natural Gas Act to construct, own, operate, and maintain the ACP on behalf of Atlantic.

Atlantic is conducting engineering studies to determine the feasibility of utilizing the cofferdam method to cross the Greenbrier River. In order to complete the studies prior to the beginning of in-stream warm water time-of-year restrictions, geotechnical investigations are anticipated to be conducted beginning on March 7, 2017.

The project area has previously been surveyed for sensitive environmental resources including wetlands and waterbodies, cultural resources, and threatened, endangered, and special status species. No fringe wetlands were identified along the Greenbrier river within the work area. No cultural resources or sensitive aquatic species were identified within the surveyed area. Three occurrences of state listed plants were identified within the surveyed area in the vicinity of the Greenbrier River, however, these populations will be avoided during the survey activities.

The enclosed stream activity application provides information necessary for your review and authorization including: 1) Attachment 1 - stream activity permit application; 2) Attachment 2 - work plan developed by the contractor that will complete the work; 3) Attachment 3 - map that illustrates the

approximate location of the proposed geotechnical borings; and 4) Attachment 4 - datasheet and photos recorded during wetland and waterbody field surveys for the ACP.

Dominion respectfully requests review of the enclosed stream activity permit and supporting information for the geotechnical investigation for the proposed ACP crossing of the Greenbrier River. We look forward to coordinating with you and respectfully request that you please contact Mr. Richard Gangle at (804) 273-2814 or Richard.B.Gangle@dom.com, if there are questions regarding this submittal.

Please direct written responses to:

Richard Gangle
Dominion Resources Services, Inc.
5000 Dominion Boulevard
Glen Allen, Virginia 23060

Sincerely,

FOR RICHARD GANGLE

Robert M. Bisha
Director, Environmental Business Support

cc: Richard Gangle, Dominion
Spencer Trichell, Dominion

Attachments: Stream Activity Application
Geotechnical Investigation Work Plan
Map of Approximate Locations of Boring Locations for the Greenbrier River
ACP Project Waterbody Datasheet and Photos for the Greenbrier River

Attachment 1

Stream Activity Permit Application

OFFICE OF LAND AND STREAMS
STREAM ACTIVITY APPLICATION

1. Name of Applicant: Richard Gangle - Dominion Resources Services, Inc
(Landowner)

2. Date: February 24, 2017

3. Complete mailing address of applicant: 500 Dominion Boulevard Glen Allen, VA 23060

Telephone Number: (804) 273-2814 Fax Number: _____

E-Mail Address: richard.b.gangle@dom.com

4. Name, address, telephone number, and title of applicant's authorized agent (i.e. contractor employed by landowner):

N/A

Please ✓ if you want the approval sent to the agent ____

5. Describe the proposed activity, its purpose and intended use after completion, type of equipment to be used in the stream, amount of material to be dredged (if any), plan for disposing of dredged materials, length of stream/bank to be worked or type and size of structure to be placed in the stream (i.e. length and width of bridge, diameter and length of culvert). **One copy of a map (topographical or detailed, hand-drawn) showing exact location of the work site (enabling Officials to locate site) must accompany this application,** and all other information that may be important to this application.

Atlantic is proposing to complete geotechncial investigations at the Greenbrier River to characterize the subsurface soil and rock conditions in order to determine the feasibility of installing the pipeline across the river using the cofferdam method. The cofferdam method is a pipeline installation technique that isolates the stream flow from the in-stream trenching activities.

See the following attachments for additonal information: Geotechnical Investigation Work Plan, Map of Proposed Greenbrier Bore Locations, and Waterbody Datasheet and Photos

(if additional space is required, continue on a separate sheet)

6. Please √ the proposed use:
Private: _____ (person use) Public: _____ (Government Agency) Commerical: ✓ (Business)

7. Location where proposed activity exists or will occur:

Greenbrier River
Name of Water Way (if unnamed or unknown tributary, provide the stream that is flows into)

Pocahontas | _____ | Clover Lick
County | District (taxable) | Closest City or Town

8. Date activity is proposed to commence: March 7, 2017

Date activity is expected to be complete: Work is anticipated to take 5 days to complete (one day per borehole)

9. Is any portion of the activity for which authorization is sought now complete? Yes _____ No ✓
(If the answer is "Yes", give reasons in Section 5 including month and year the activity was completed)

10. Below is a list of entities that may require permits. Please list all approvals or certifications required by other Government Agencies for the above-described activity:

Issuing agency: Corps of Engineers – (304) 399-5710 (412) 395-7170 (412) 395-7157 Type of approval: NWP 6 - No PCN Necessary
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12: If activity is a pipeline construction (that is, gas, water, or sewer) give:
Material pipeline is made of: N/A

Size of Pipeline: N/A

Maximum pressure of the pipeline: N/A

Please provide the appropriate line number and if a Gathering or Well Line provide the A.P.I. Well Number:

Transmission: N/A Distribution: N/A Gathering: N/A Well Line: N/A A.P.I Well Number: N/A

13: Application is hereby made for authorization to conduct the activities described herein. I certify that I am familiar with the information in this application, and that to the best of my knowledge and belief such information is true, complete and accurate. I further certify that I possess the authority to undertake the proposed activities.

Signature of Applicant or Agent

Office of Land and Streams
Building 74, Room 200
324 Fourth Avenue
South Charleston, WV 25303
Phone Number 304-558-3225
Fax Number 304-558-6048

Attachment 2

Geotechnical Investigation Work Plan

Geosyntec consultants

520 Pike Street, Suite 1375
Seattle, Washington 98101
PH 206.496.1456

www.geosyntec.com

24 February 2017
Project TXG0007-012-6401

Colin Olness, PE, Contractor
Atlantic Coast Pipeline - Construction
99 Edmiston Way
Buckhannon, WV 26201

SENT BY EMAIL TO: Colin.P.Olness@dom.com

Subject: Revised Drilling Investigation Work Plan - Greenbrier River Crossing, WV
Dominion Atlantic Coast Pipeline (ACP) Project - Segment AP-1 MP 76 / 77

Dear Mr. Olness:

This letter presents an update to the "Proposed Drilling Investigation Work Plan" letter that we presented on Monday 13 February 2017. Geosyntec Consultants, Inc. (Geosyntec) has prepared the work plan described in this letter to facilitate performing a geotechnical drilling investigation for the Atlantic Coast Pipeline (ACP) Project at the Greenbrier River Crossing. The geotechnical drilling investigation is required to characterize riverbed and subsurface soil and rock conditions at the crossing to evaluate feasibility of, and to develop the design for, the proposed cofferdams that will be used to facilitate excavation of the trench and installation of the pipeline. There is some urgency to proceed with this drilling investigation work because the environmental window for instream work at this site closes on Friday 31 March 2017. We propose to commence the drilling investigation work no later than Tuesday 7 March 2017.

We propose that the drilling investigation work be carried out by Terra Testing Inc. (Terra) of Washington, PA who have performed similar work on other projects for Geosyntec. Terra will provide a driller with more than 25 years-experience, including specific experience drilling near and in rivers. A Terra representative and a Geosyntec representative visited the site on Tuesday 21 February 2017 to finalize details of their drilling investigation work plan presented in Attachment 1. Terra proposes to use a Diedrich D-50 type drilling rig mounted on a rubber tracked vehicle platform as shown in the photo at the top of Page 2. Borehole depths have been selected based on site topography and to allow for up to 10 feet of cover for installation of the 42 inch pipeline beneath the riverbed.

Drilling Rig Proposed by Terra Testing, Inc.

The drilling investigation would entail advancing two land-based nominal 4 to 6 inch diameter vertical boreholes to a depth of 40 feet (or to the bedrock surface and a maximum 10 feet into the bedrock) to sample overburden and bedrock materials, near locations A and B shown on the plan at the top of Page 3, and described respectively below as follows:

- A - on the private property on the east side (left bank) of the river, 25 feet south of the proposed pipe centerline alignment; and,
- B - on the Greenbrier Trail on the west side (right bank) of the river, 25 feet south of the proposed pipe centerline alignment (access along the trail from Clover Lick Depot).

These holes would be fully grouted with a cement/bentonite/water mix upon completion.

The drilling investigation will also entail drilling up to three in-river 4 to 6 inch diameter vertical boreholes to a depth of 20 feet (or to the bedrock surface and a maximum 10 feet into bedrock) at locations as follows:

- along the edge of the wetted perimeter of the east side (left bank) of the river, 25 feet south of the proposed pipe centerline alignment (near point P040 on the plan on Page 3);
- on the surface of a midstream bar, 25 feet south of the proposed pipe centerline alignment (near the red square in the plan on Page 3); and

- along the edge of the wetted perimeter of the west side (right bank) of the river, 25 feet south of the proposed pipe centerline alignment (near point P041 on the plan on Page 3).

Plan of the Greenbrier River Crossing Showing Approximate Location of Boreholes

In-river drilling will only be carried out if the water level is low enough to allow a safe traverse by the drilling rig from the east side to the west side to drill the borehole and to traverse back upon completion of the borehole. Weather conditions and water levels will be monitored to guide decisions regarding safe operations. The drilling rig will be removed from the river at the end of each day. The drilling rig has a winch should it be needed to get back out of the river.

Access to the river will be achieved on the east bank at the point shown in the photo at the top of Page 4. The drilling rig has a narrow footprint and it should be possible to maneuver it between the trees but there is a remote possibility that one small diameter (6 inch DBH) dead tree may need to be removed. If this is required, the stump will be cut flush to the ground and the wood will be bucked into lengths manageable to move by hand. Areas disturbed by the drilling rig, along the bank will be raked smooth, to the extent practical, and covered with locally sourced straw.

Drill Access Route on East Side of River

Water levels measured during the site visit on Tuesday 21 February 2017 ranged from 6 to 24 inches (average 12 inches) and these depth of water can be accommodated by the proposed drilling rig. We propose to complete the drilling of up to three boreholes within the wetted perimeter of the river first, as the drill rig will be steam cleaned to remove all deleterious material such as dirt and oil and grease from the tracks and under-chassis, prior to mobilization to the site. Once the drilling rig is positioned at an in-river borehole location, floating absorbent booms will be deployed downstream of the drilling rig, in an arcuate concave upstream configuration and secured. These booms, illustrated in the photos at the top of Page 4, are specially designed to intercept and absorb any oily sheen that may appear on the water surface during drilling.

At each in-river borehole location, Terra will level the rig with outriggers and advance 4 ¼ inch diameter, sequential 5 foot long rods of hollow stem auger (HSA) through the alluvium beneath the river bed, obtaining samples of the river bed material at 2 ½ foot intervals in accordance with the Standard ASTM D-1586 Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils. If bedrock is encountered at a depth of 15 feet or less, Terra will place a 3 inch casing inside the 4 ¼ inch HSA and rotate it into the top of rock to create a seal to isolate the circulation of drilling fluids within the 3 inch casing. This will allow Terra to circulate water for NQ-3 rock coring. The 3 inch casing will have a "water-tee" at the top with a silt sock that will discharge into a steel tub supported above the water level on metal legs. This procedure should minimize release of sediment into the river.

Once each borehole is complete, water from the steel tub will be pumped through a floating discharge hose to a temporary containment located on land above normal high water level where it will infiltrate into the ground. The discharge hose will be secured to prevent the hose from floating downstream. The discharge hose will be connected to the pump on the drilling rig side with a ball valve that will be closed before the discharge hose is disconnected from the drilling rig to prevent backflow of water into the river. Terra proposes to grout only the bedrock portion of the shallow boreholes in the river in order to minimize the possibility of cementitious material getting into the water. The augers will be removed after being filled with water and slowly reverse-rotated out of the ground. An estimated 50 to 100 gallons of water will be required for coring each hole and this will be drawn directly from the river which should be permissible under the 1 January 2015 WV DEP minimum reporting threshold guidance.

Proposed Floating Absorbent Booms

Any sediment in the onshore containment area, and all cuttings from the drilling operation, will be containerized and removed from the site. The containment area will then be raked smooth, to the extent possible, and covered with locally sourced straw. We anticipate that the drilling work will take approximately five working days to complete (one day per borehole).

All the work will be conducted in accordance with a task specific Health and Safety plan that will include use of appropriate cold water aquatic gear (insulated overalls/chest water), life-jackets (PFDs), tether ropes, bottom probes, a small support boat if needed, and warming facilities (to be

provided by Terra). Geosyntec personnel will monitor the work and log the boreholes and will also work in accordance with a task specific Health and Safety Plan.

Details of a complimentary geophysical survey to be conducted at the site simultaneously with the drilling program, are provided in Attachment 2. A budget estimate for the proposed work will be submitted separately. On 21 February 2017, a reconnaissance grid survey, to obtain the river bottom bathymetry, was completed. The data should be available in the form of a river bottom contour plan and crossing profile early next week. This will assist in executing the in-river work.

We trust that the information contained herein meets your needs. We look forward to your favorable review and prompt approval of this revised plan. If there are additional details that you require or any questions that you have, please contact us.

Sincerely,

GEOSYNTEC CONSULTANTS, INC.

Tony Rice
Senior Principal Geotechnical Engineer

Logan Brant, Ph.D., P.E. (WV)
Senior Geotechnical Engineer

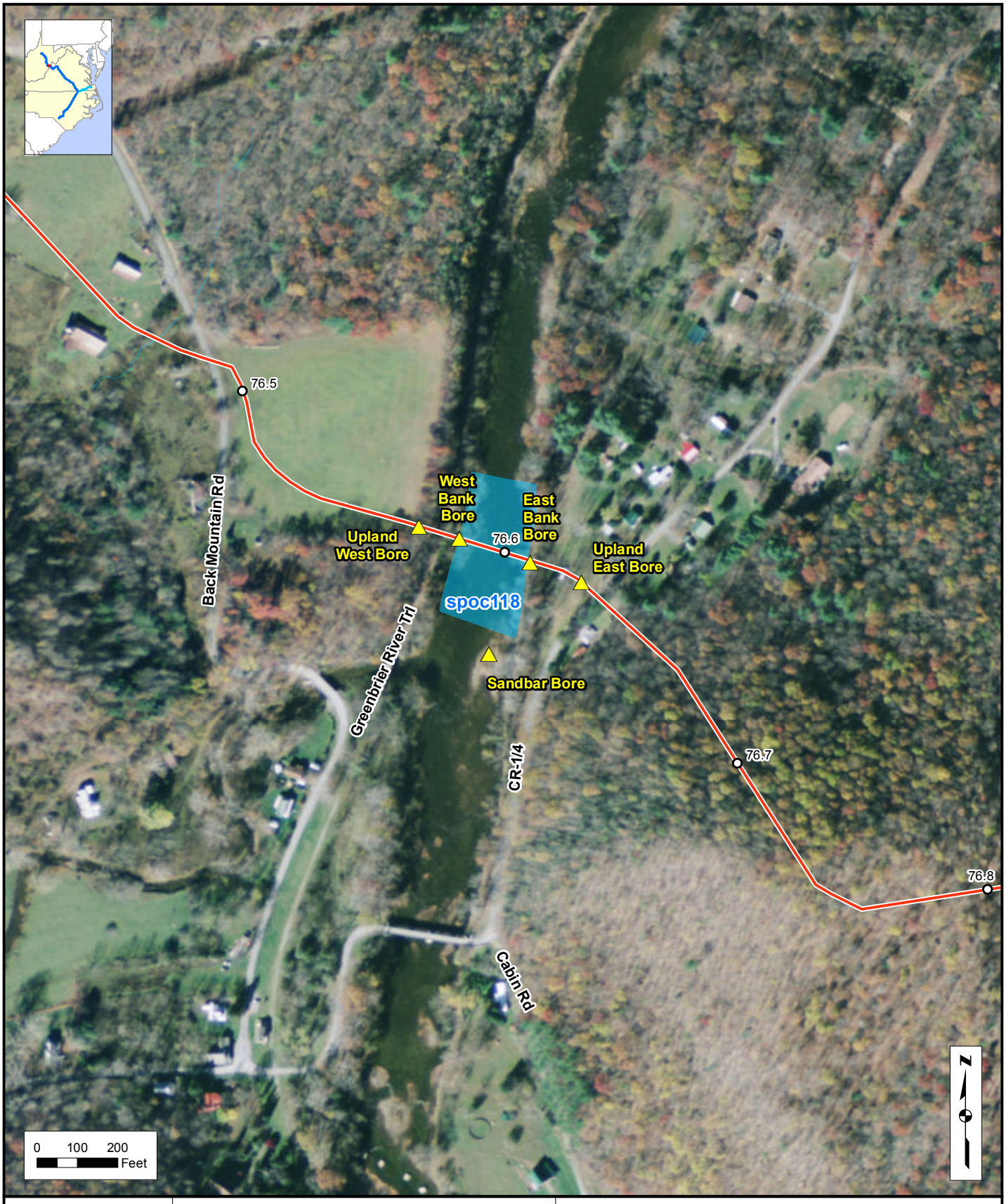
Attachments

1. Drilling Plan - Terra Testing, Inc., 23 February 2017

2. Complimentary Geophysical Survey - Hager-Richter Geoscience, Inc., 23 February 2017

Attachment 3

Map of Approximate Locations of Boring Locations
for the Greenbrier River



Atlantic Coast Pipeline

- Milepost
- Proposed Route
- Bore Location
- Surveyed Waterbody

Atlantic Coast Pipeline

Proposed Geotechnical Investigation of the Greenbrier River Crossing

ERM

FILE: M:\Clients\D-F\DOM\SRPP_ArcGIS\2017\02\06_Greenbrier_River_ACP_Greenbrier_Bore_Locations.mxd, REVISED: 02/17/2017, SCALE: 1:4,000 DRAWN BY: TAH

Attachment 4

ACP Project Waterbody Datasheet and Photos for the Greenbrier River

Linear Waterbody Data Sheet

Survey Description

Project Name:	Waterbody Name:	Waterbody ID:	Date:
Atlantic Coast Pipeline	Greenbrier River	SPOC118	3/24/2016

State:	County:	Company:	Crew Member Initials:	Photos:
West Virginia	Pocahontas	NRG	SA, CR	3

Tract Number(s):	Nearest Milepost:	Associated Wetland ID(s):
		None

Survey Type: *(check one)* ☐Centerline ☒Re-Route ☐Access Road ☐Other:

Physical Attributes

Stream Classification: *(check one)* ☐Ephemeral ☐Intermittent ☒Perennial

Waterbody Type: *(check one)* ☒River ☐ Stream ☐ Ditch ☐ Canal ☐ Other:

OHWM Width: 170 ft.

Height: 4 ft.

N/A☐

OHWM Indicator: *(check all that apply)*

☒ Clear line on bank ☐Shelving ☐Wrested vegetation ☐Scouring ☐Water staining

☒Bent, matted, or missing vegetation ☒Wrack line ☒Litter and debris ☐Abrupt plant community change ☐Soil characteristic change

Width of Waterbody - Top of Bank to Top of Bank:	Width of Waterbody - Toe of Slope to Toe of Slope:	Width of Waterbody - Water Edge to Water Edge:	Depth of Water: *(Approx.)*
200 ft.	_____ft.	_____ft. N/A☐	_____ft. N/A☐

Sinuosity: *(check one)*	Water velocity: *(Approx.)*	Bank height	Bank slope
☐Straight ☒Meandering	0.5 fps N/A☐	Right: 12 ft. Left: 10 ft.	Right: 60 degrees Left: 60 degrees

Qualitative Attributes

Water Appearance: *(check one)* ☐No water ☒Clear ☐Turbid ☐Sheen on surface ☐Surface scum ☐Algal mats ☐Other:

Substrate: *(check all that apply)*	☐ Bedrock	☒ Boulder	☒ Cobble	☒ Gravel	☐ Sand	☐ Silt/ clay	☐ Organic	☐ Other:
% of Substrate:	____%	20 %	20 %	60 %	____%	____%	____%	____%

Width of Riparian Zone: 100 ft. N/A☐

Vegetative Layers: *(check all that apply)* ☒ Trees: ☒ Saplings/Shrubs: ☒ Herbs

Avg. DBH of Dominants: *(approx.)* 16 in. 2 in.

Dominant Bank Vegetation *(list)*:

Sycamore, red oak, white pine, highbush blueberry

Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):

Riffles, pools, submerged vegetation

Aquatic Organisms Observed *(list)*:

Caddisfly larvae, fish, crayfish

T&E Species Observed *(list)*:

None

Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):

None

Tributary is: *(check one)* ☒ Natural ☐ Artificial, man-made ☐ Manipulated

Stream Quality [a]**:** *(check one)* ☐ High ☒ Moderate ☐ Low

Waterbody ID:
SPOC118

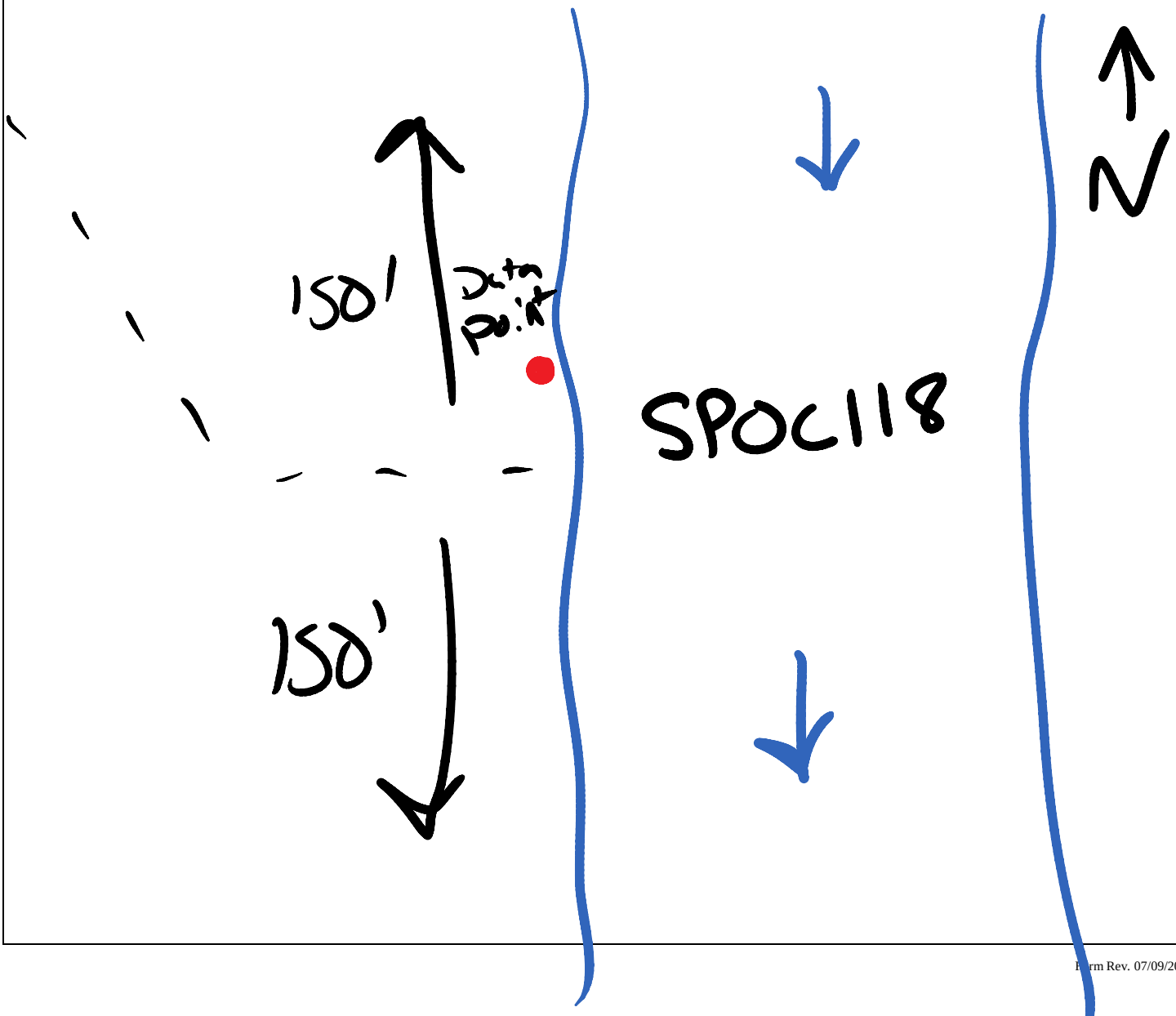
[a] **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (*Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)*



Waterbody SPOC118 facing northeast upstream

Waterbody SPOC118 facing southwest downstream

Waterbody SPOC118 facing southeast across

DIVISION OF NATURAL RESOURCES
324 Fourth Avenue, Room 200
South Charleston WV 25303-1228
TDD (304) 558-1439
TDD 1-800-354-6087
Fax (304) 558-6748
Telephone (304) 558-3225

Jim Justice
Governor

Stephen S. McDaniel
Director

March 2, 2017

Division of Natural Resources

LICENSE AND RIGHT OF ENTRY

Re: R-17-III/38-581

Dominion Resources Services, Inc.
Attention: Robert Gangle
5000 Dominion Boulevard
Glen Allen, VA 23060-

Dear Mr. Gangle:

The Division of Natural Resources hereby grants to you a License and Right of Entry for the purpose of geotechnical drilling investigations in order to characterize the subsurface soil and rock to determine feasibility of installing a pipeline across the river using the cofferdam method along the Greenbrier River, near Clover Lick in Pocahontas County, West Virginia.

This License and Right of Entry is subject to the following terms and conditions:

1.
2. No in stream work during the fish-spawning season (April 1-June 30).

3. Work should be completed as quickly as possible during low flows in designated work areas only.

4. Any stream bed disturbance should be restricted to the immediate area. In stream use of equipment should be kept to a minimum.

5. All shore areas disturbed by this operation must be reshaped, seeded, and mulched immediately upon completion of work. The prompt establishment of vegetative cover will reduce future damage from high water levels.

6. Green concrete must not be put in the stream (highly toxic to aquatic life).

7. Best management practices should be followed. Measures such as hay bales must be used to reduce downstream siltation.

8. The State's issuance of this Right-of-Entry does not provide for the applicant to work outside the requested boundaries nor does the State assume any liability for the applicant's/landowner's construction activities. By accepting this Right-of-

Entry, the applicant/landowner assumes liability for any/all damages caused by this activity to both upstream and downstream landowners.

9. This is a high-quality stream. A 404 permit may be required from the U.S. Army Corps of Engineers. You may call them at 304-529-5395 or 412-395-7152.

Guidelines of Best Management Practices for Sediment and Erosion Control as outlined by the Section of Water Resources, Division of Environmental Protection must be followed. Copies of those guidelines are available from the Section of Water Resources, Telephone No. (304) 926-0440.

The issuance of this License and Right of Entry by the Division of Natural Resources does not preclude the necessity to obtain a permit from the Corps of Engineers or any other state or federal permits which may be required by law, nor does this License and Right of Entry negate the need to comply with the West Virginia Water Pollution Control Act and/or the State Environmental Quality Board's administrative regulations, applicant is also responsible for determining if the proposed activity is located within an identified flood plain and it is the applicant's responsibility for contacting the local governmental agency in charge of that program and obtaining a flood plain development permit for it. This License and Right of Entry does not grant any rights or privileges, or permission to enter upon or to cross the property of any other person, nor is permission granted to remove any material that lies upon the property of any other persons. Work should be completed in as brief a period as possible and within one year from the date of this letter. In the event you fail or refuse to comply with any of the terms or conditions herein, this License and Right of Entry will be canceled and considered null and void and the Division will reject further applications.

Your check in the amount of $100.00 is now due and payable to the Division of Natural Resources covering the first year's annual fee of this agreement. Your agreement will be effective upon receipt of your payment in full. You must notify this office in writing when this installation has been removed.

Sincerely,

Joe T. Scarberry, Supervisor
Office of Land and Streams

JTS:cb

pc: DNR Fish Biologist
Jeremy Bandy, Environmental Enforcement
DNR Conservation Officers

OFFICE OF LAND AND STREAMS
STREAM ACTIVITY APPLICATION

1. Name of Applicant: Richard Gangle - Dominion Resources Services, Inc
(Landowner)

2. Date: February 24, 2017

3. Complete mailing address of applicant: 500 Dominion Boulevard Glen Allen, VA 23060

Telephone Number: (804) 273-2814 Fax Number: _____

E-Mail Address: richard.b.gangle@dom.com

4. Name, address, telephone number, and title of applicant's authorized agent (i.e. contractor employed by landowner):

N/A

Please ✓ if you want the approval sent to the agent ____

5. Describe the proposed activity, its purpose and intended use after completion, type of equipment to be used in the stream, amount of material to be dredged (if any), plan for disposing of dredged materials, length of stream/bank to be worked or type and size of structure to be placed in the stream (i.e. length and width of bridge, diameter and length of culvert). **One copy of a map (topographical or detailed, hand-drawn) showing exact location of the work site (enabling Officials to locate site) must accompany this application,** and all other information that may be important to this application.

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See the following attachments for additonal information: Geotechnical Investigation Work Plan, Map of Proposed Greenbrier Bore Locations, and Waterbody Datasheet and Photos

R-12-111/38-561

St to DB

(if additional space is required, continue on a separate sheet)

OLS Form 1 (08/07)

LS#9 minus 8

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Private: _____ (person use) Public: _____ (Government Agency) Commerical: ✓ (Business)

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Please provide the appropriate line number and if a Gathering or Well Line provide the A.P.I. Well Number:

Transmission: N/A Distribution: N/A Gathering: N/A Well Line: N/A A.P.I Well Number: N/A

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Geosyntec consultants

520 Pike Street, Suite 1375
Seattle, Washington 98101
PH 206.496.1456

www.geosyntec.com

24 February 2017
Project TXG0007-012-6401

Colin Olness, PE, Contractor
Atlantic Coast Pipeline - Construction
99 Edmiston Way
Buckhannon, WV 26201

SENT BY EMAIL TO: Colin.P.Olness@dom.com

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Dominion Atlantic Coast Pipeline (ACP) Project - Segment AP-1 MP 76 / 77

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Access to the river will be achieved on the east bank at the point shown in the photo at the top of Page 4. The drilling rig has a narrow footprint and it should be possible to maneuver it between the trees but there is a remote possibility that one small diameter (6 inch DBH) dead tree may need to be removed. If this is required, the stump will be cut flush to the ground and the wood will be bucked into lengths manageable to move by hand. Areas disturbed by the drilling rig, along the bank will be raked smooth, to the extent practical, and covered with locally sourced straw.

Drill Access Route on East Side of River

Water levels measured during the site visit on Tuesday 21 February 2017 ranged from 6 to 24 inches (average 12 inches) and these depth of water can be accommodated by the proposed drilling rig. We propose to complete the drilling of up to three boreholes within the wetted perimeter of the river first, as the drill rig will be steam cleaned to remove all deleterious material such as dirt and oil and grease from the tracks and under-chassis, prior to mobilization to the site. Once the drilling rig is positioned at an in-river borehole location, floating absorbent booms will be deployed downstream of the drilling rig, in an arcuate concave upstream configuration and secured. These booms, illustrated in the photos at the top of Page 4, are specially designed to intercept and absorb any oily sheen that may appear on the water surface during drilling.

At each in-river borehole location, Terra will level the rig with outriggers and advance 4 ¼ inch diameter, sequential 5 foot long rods of hollow stem auger (HSA) through the alluvium beneath the river bed, obtaining samples of the river bed material at 2 ½ foot intervals in accordance with the Standard ASTM D-1586 Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils. If bedrock is encountered at a depth of 15 feet or less, Terra will place a 3 inch casing inside the 4 ¼ inch HSA and rotate it into the top of rock to create a seal to isolate the circulation of drilling fluids within the 3 inch casing. This will allow Terra to circulate water for NQ-3 rock coring. The 3 inch casing will have a "water-tee" at the top with a silt sock that will discharge into a steel tub supported above the water level on metal legs. This procedure should minimize release of sediment into the river.

Once each borehole is complete, water from the steel tub will be pumped through a floating discharge hose to a temporary containment located on land above normal high water level where it will infiltrate into the ground. The discharge hose will be secured to prevent the hose from floating downstream. The discharge hose will be connected to the pump on the drilling rig side with a ball valve that will be closed before the discharge hose is disconnected from the drilling rig to prevent backflow of water into the river. Terra proposes to grout only the bedrock portion of the shallow boreholes in the river in order to minimize the possibility of cementitious material getting into the water. The augers will be removed after being filled with water and slowly reverse-rotated out of the ground. An estimated 50 to 100 gallons of water will be required for coring each hole and this will be drawn directly from the river which should be permissible under the 1 January 2015 WV DEP minimum reporting threshold guidance.

Proposed Floating Absorbent Booms

Any sediment in the onshore containment area, and all cuttings from the drilling operation, will be containerized and removed from the site. The containment area will then be raked smooth, to the extent possible, and covered with locally sourced straw. We anticipate that the drilling work will take approximately five working days to complete (one day per borehole).

All the work will be conducted in accordance with a task specific Health and Safety plan that will include use of appropriate cold water aquatic gear (insulated overalls/chest water), life-jackets (PFDs), tether ropes, bottom probes, a small support boat if needed, and warming facilities (to be

provided by Terra). Geosyntec personnel will monitor the work and log the boreholes and will also work in accordance with a task specific Health and Safety Plan.

Details of a complimentary geophysical survey to be conducted at the site simultaneously with the drilling program, are provided in Attachment 2. A budget estimate for the proposed work will be submitted separately. On 21 February 2017, a reconnaissance grid survey, to obtain the river bottom bathymetry, was completed. The data should be available in the form of a river bottom contour plan and crossing profile early next week. This will assist in executing the in-river work.

We trust that the information contained herein meets your needs. We look forward to your favorable review and prompt approval of this revised plan. If there are additional details that you require or any questions that you have, please contact us.

Sincerely,

GEOSYNTEC CONSULTANTS, INC.

Tony Rice
Senior Principal Geotechnical Engineer

Logan Brant, Ph.D., P.E. (WV)
Senior Geotechnical Engineer

Attachments

1. Drilling Plan - Terra Testing, Inc., 23 February 2017

2. Complimentary Geophysical Survey - Hager-Richter Geoscience, Inc., 23 February 2017

Atlantic Coast Pipeline

- Milepost
- Proposed Route
- Bore Location
- Surveyed Waterbody

Atlantic Coast Pipeline

Proposed Geotechnical Investigation of the Greenbrier River Crossing

ERM

FILE: M:\Clients\D-F\DOM\SRPP_ArcGIS\2017\02\06_Greenbrier_River_ACP_Greenbrier_Bore_Locations.mxd, REVISED: 02/17/2017, SCALE: 1:4,000 DRAWN BY: TAH

Attachment 4

ACP Project Waterbody Datasheet and Photos for the Greenbrier River

Linear Waterbody Data Sheet

Survey Description

Project Name:	Waterbody Name:	Waterbody ID:	Date:
Atlantic Coast Pipeline	Greenbrier River	SPOC118	3/24/2016

State:	County:	Company:	Crew Member Initials:	Photos:
West Virginia	Pocahontas	NRG	SA, CR	3

Tract Number(s):	Nearest Milepost:	Associated Wetland ID(s):
		None

Survey Type: *(check one)* ☐Centerline ☒Re-Route ☐Access Road ☐Other:

Physical Attributes

Stream Classification: *(check one)* ☐Ephemeral ☐Intermittent ☒Perennial

Waterbody Type: *(check one)* ☒River ☐ Stream ☐ Ditch ☐ Canal ☐ Other:

OHWM Width: 170 ft.
Height: 4 ft.
N/A☐

OHWM Indicator: *(check all that apply)*
☒ Clear line on bank ☐Shelving ☐Wrested vegetation ☐Scouring ☐Water staining
☒Bent, matted, or missing vegetation ☒Wrack line ☒Litter and debris ☐Abrupt plant community change ☐Soil characteristic change

Width of Waterbody - Top of Bank to Top of Bank:	Width of Waterbody - Toe of Slope to Toe of Slope:	Width of Waterbody - Water Edge to Water Edge:	Depth of Water: *(Approx.)*
200 ft.	_____ ft.	_____ ft. N/A☐	_____ ft. N/A☐

Sinuosity: *(check one)*	Water velocity: *(Approx.)*	Bank height	Bank slope
☐Straight ☒Meandering	0.5 fps N/A☐	Right: 12 ft. Left: 10 ft.	Right: 60 degrees Left: 60 degrees

Qualitative Attributes

Water Appearance: *(check one)* ☐No water ☒Clear ☐Turbid ☐Sheen on surface ☐Surface scum ☐Algal mats ☐Other:

Substrate: *(check all that apply)*	☐ Bedrock	☒ Boulder	☒ Cobble	☒ Gravel	☐ Sand	☐ Silt/ clay	☐ Organic	☐ Other:
% of Substrate:	_____%	20 %	20 %	60 %	_____%	_____%	_____%	_____%

Width of Riparian Zone: 100 ft. N/A☐

Vegetative Layers: *(check all that apply)* ☒ Trees: ☒ Saplings/Shrubs: ☒ Herbs
Avg. DBH of Dominants: *(approx.)* 16 in. 2 in.

Dominant Bank Vegetation *(list)*:
Sycamore, red oak, white pine, highbush blueberry

Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):
Riffles, pools, submerged vegetation

Aquatic Organisms Observed *(list)*:
Caddisfly larvae, fish, crayfish

T&E Species Observed *(list)*:
None

Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):
None

Tributary is: *(check one)* ☒ Natural ☐ Artificial, man-made ☐ Manipulated

Stream Quality [a]: *(check one)* ☐ High ☒ Moderate ☐ Low

Waterbody ID:
SPOC118

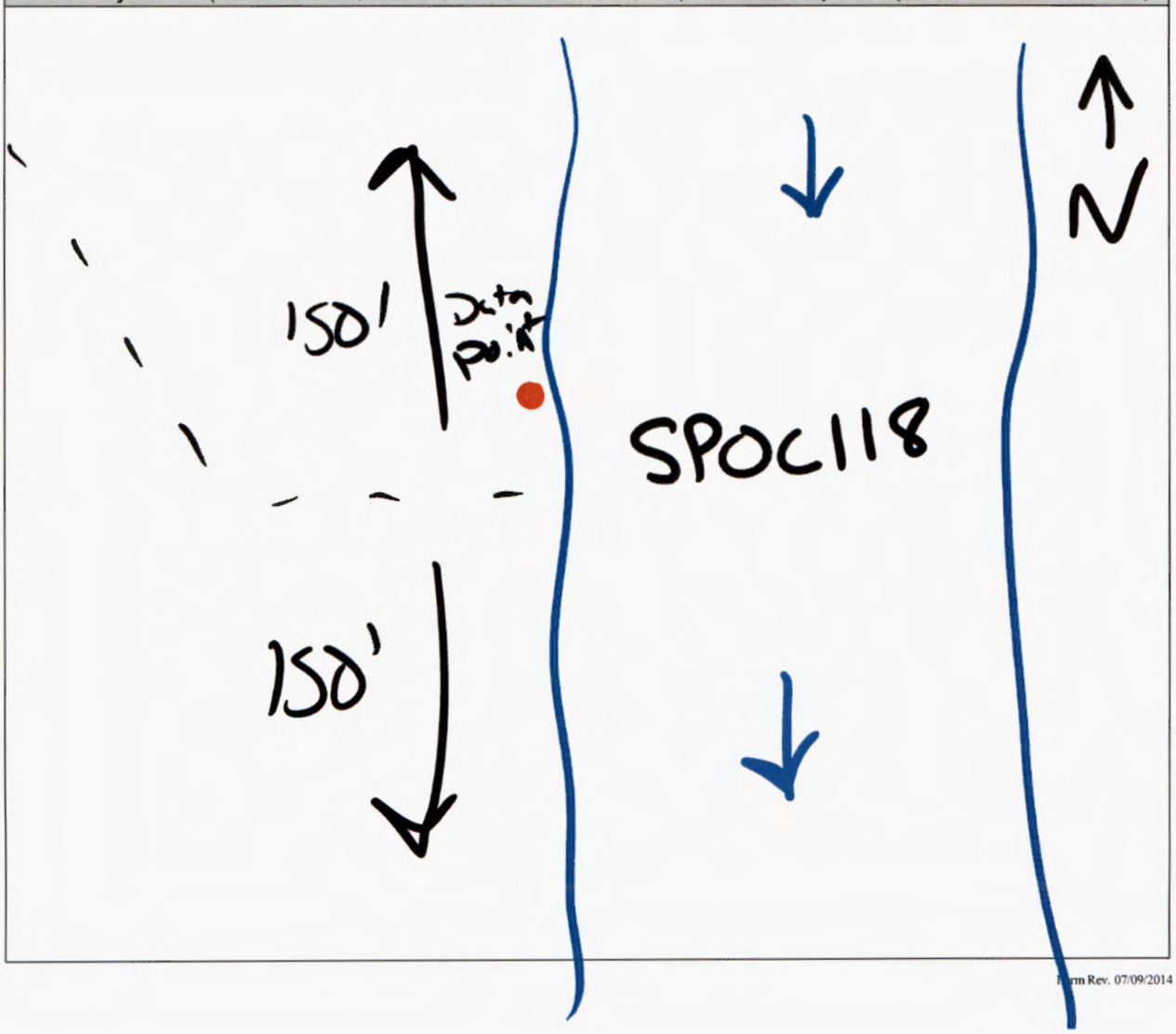
- **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

  Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

  Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (*Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)*



Waterbody SPOC118 facing northeast upstream

Waterbody SPOC118 facing southwest downstream

Waterbody SPOC118 facing southeast across

Dominion Resources Services, Inc.
5000 Dominion Boulevard,
Glen Allen, VA 23060\

February 27, 2017

Ms. Carrie T. Brooks
West Virginia Division of Natural Resources
Office of Land and Streams
Building 74, Room 200
324 Fourth Avenue
South Charleston, WV 25303

RE: Dominion Transmission, Inc., Atlantic Coast Pipeline
Stream Activity Application – Greenbrier River

Dear Ms. Brooks:

Atlantic Coast Pipeline, LLC (Atlantic) is a company formed by four major U.S. energy companies – Dominion, Duke Energy, Piedmont Natural Gas, and Southern Company Gas. The company was created to develop, own, and operate the proposed Atlantic Coast Pipeline (ACP), an approximately 600-mile-long, interstate natural gas transmission pipeline system designed to meet growing energy needs in Virginia and North Carolina. Atlantic has contracted with Dominion Transmission, Inc. (DTI), a subsidiary of Dominion, to seek authorization from the Federal Energy Regulatory Commission under Section 7(c) of the Natural Gas Act to construct, own, operate, and maintain the ACP on behalf of Atlantic.

Atlantic is conducting engineering studies to determine the feasibility of utilizing the cofferdam method to cross the Greenbrier River. In order to complete the studies prior to the beginning of in-stream warm water time-of-year restrictions, geotechnical investigations are anticipated to be conducted beginning on March 7, 2017.

The project area has previously been surveyed for sensitive environmental resources including wetlands and waterbodies, cultural resources, and threatened, endangered, and special status species. No fringe wetlands were identified along the Greenbrier river within the work area. No cultural resources or sensitive aquatic species were identified within the surveyed area. Three occurrences of state listed plants were identified within the surveyed area in the vicinity of the Greenbrier River, however, these populations will be avoided during the survey activities.

The enclosed stream activity application provides information necessary for your review and authorization including: 1) Attachment 1 - stream activity permit application; 2) Attachment 2 - work plan developed by the contractor that will complete the work; 3) Attachment 3 - map that illustrates the

approximate location of the proposed geotechnical borings; and 4) Attachment 4 - datasheet and photos recorded during wetland and waterbody field surveys for the ACP.

Dominion respectfully requests review of the enclosed stream activity permit and supporting information for the geotechnical investigation for the proposed ACP crossing of the Greenbrier River. We look forward to coordinating with you and respectfully request that you please contact Mr. Richard Gangle at (804) 273-2814 or Richard.B.Gangle@dom.com, if there are questions regarding this submittal.

Please direct written responses to:

Richard Gangle
Dominion Resources Services, Inc.
5000 Dominion Boulevard
Glen Allen, Virginia 23060

Sincerely,

FOR Robert M. Bisha
Director, Environmental Business Support

cc: Richard Gangle, Dominion
Spencer Trichell, Dominion

Attachments: Stream Activity Application
Geotechnical Investigation Work Plan
Map of Approximate Locations of Boring Locations for the Greenbrier River
ACP Project Waterbody Datasheet and Photos for the Greenbrier River

Brooks, Carrie T

From: Walker, James A
Sent: Thursday, March 02, 2017 9:58 AM
To: Brooks, Carrie T
Subject: RE: For your approval, Dominion Resources Services, Inc., R-17-III/38-581

Carrie,

Please amend title to read drilling of experimental bore. PLC # 9 fits the best. But please remove number 8 condition. This is for an uncommon activity. It is for a bore hole in a high quality stream and we do not have a condition for this activity.
If you have any questions contact me.

Thanks,
Jim

James A. Walker
West Virginia Division of Natural Resources
163 Wildlife Road
French Creek, WV 26218
304-924-6211 (office)
304-550-8155 (cell)

From: Brooks, Carrie T
Sent: Wednesday, March 01, 2017 3:35 PM
To: Walker, James A
Subject: For your approval, Dominion Resources Services, Inc., R-17-III/38-581

Virginia Agencies

Virginia Department of Conservation and Recreation

Molly Joseph Ward
Secretary of Natural Resources

Clyde E. Cristman
Director

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

Rochelle Altholz
Deputy Director of Administration and Finance

David C. Dowling
Deputy Director of Soil and Water Conservation and Dam Safety

Thomas L. Smith
Deputy Director of Operations

February 23, 2017

Richard Gangle
Dominion Resources Services, Inc.
5000 Dominion Boulevard
Glen Allen, VA 23060

Re: Atlantic Coast Pipeline**,** Karst Terrain Assessment, Construction, Monitoring, and Mitigation Plan - Review

Dear Mr. Gangle:

The Department of Conservation and Recreation's Division of Natural Heritage's (DCR-DNH) mission is conserving Virginia's biodiversity through inventory, protection, and stewardship. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal, unique or exemplary natural communities, and significant geologic formations.

DCR-DNH has reviewed the Karst Terrain Assessment, Construction, Monitoring, and Mitigation Plan (Karst Mitigation Plan). The overall plan is comprehensive and reduces the potential risk posed by the Atlantic Coast Pipeline to karst resources. However, DCR-DNH makes the following recommendations to address impacts if mitigation and protective measures fail and there is a discharge to karst waters, potentially impacting subsurface habitat, drinking water, and surface streams fed by karst springs.

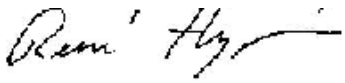
- DCR-DNH recommends expanding the current 500' karst assessment buffer to identify swallets and sinkholes that would receive overland runoff from failure of Erosion and Sediment Control (E&SC) measures on the worksite, regardless of its distance from the work area.

- Dye tracing should be used to better understand local groundwater flow systems. Dye tracing results should be used to predict and anticipate springs and wells at most risk of impact. In cases where existing dye trace information is lacking, additional dye traces may need to be performed. Springs in the area serve as headwaters and contributors to high quality surface streams, and in many cases double as public and/or private domestic water supplies. In discussion with DEQ staff, DCR-DNH karst protection staff concurs that high risk springs should ideally be monitored continuously for turbidity, conductance, DO, and temperature in addition to periodically being sampled for hydrocarbons before and during pipeline construction in each sub-watershed. Establishing the normal range of spring responses for these parameters will be key to determining if E&SC and Spill Prevention, Control, and Countermeasures (SPCC) Plan measures employed during and after pipeline construction are protective of groundwater.

- Delineation of subterranean flows is necessary if the countermeasures portion of the SPCC Plan, cited page 19 of the Karst Mitigation Plan, is to be effective.

Should you have any questions or concerns, feel free to contact me at (804) 371-2708. Thank you for the opportunity to comment on the Karst Terrain Assessment, Construction, Monitoring, and Mitigation Plan.

Sincerely,



S. René Hypes
Project Review Coordinator

CC : Wil Orndorff, DCR-Karst
Bob Bisha, Technical Advisor, Atlantic Coast Pipeline

Molly Joseph Ward
Secretary of Natural Resources

Clyde E. Cristman
Director

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

Rochelle Altholz
Deputy Director of Administration and Finance

David C. Dowling
Deputy Director of Soil and Water Conservation and Dam Safety

Thomas L. Smith
Deputy Director of Operations

February 23, 2017

Richard Gangle
Dominion Resources Services, Inc.
5000 Dominion Boulevard
Glen Allen, VA 23060

Re: Atlantic Coast Pipeline**,** Cochran's Cave Conservation Area and Moffett Lake Investigation Update - Review

Dear Mr. Gangle:

The Department of Conservation and Recreation's Division of Natural Heritage's (DCR-DNH) mission is conserving Virginia's biodiversity through inventory, protection, and stewardship. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal, unique or exemplary natural communities, and significant geologic formations.

DCR-DNH has reviewed the Cochran's Cave Conservation Area and Moffett Lake Investigation Update and supports the ongoing efforts by GeoConcept to characterize the karst geology and hydrology within the Cochran's Conservation Site. Conservation sites are tools for representing key areas of the landscape that warrant further review for possible conservation action because of the natural heritage resources and habitat they support. Conservation sites are polygons built around one or more rare plant, animal, or natural community designed to include the element and, where possible, its associated habitat, and buffer or other adjacent land thought necessary for the element's conservation. Conservation sites are given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain; on a scale of 1-5, 1 being most significant. Cochran's Conservation Site has been given a biodiversity significance ranking of B4, which represents a site of moderate significance. While DCR-DNH continues to recommend the avoidance of the Cochran's Conservation Site entirely, the investigations underway and ongoing adjustments to the details of the alignment have reduced the likelihood of a significant impact to the cave or its associated biological and hydrological resources. The presence of onsite, authorized karst specialists during the construction phase of the pipeline through this very sensitive area is absolutely essential to ensure safe construction.

Should you have any questions or concerns, feel free to contact me at (804) 371-2708. Thank you for the opportunity to comment on the Cochran's Cave Conservation Area and Moffett Lake Investigation Update.

Sincerely,

S. René Hypes
Project Review Coordinator

CC : Wil Orndorff, DCR-Karst
Bob Bisha, Technical Advisor, Atlantic Coast Pipeline

Virginia Department of Game and Inland Fisheries

Tracy Brunner

From: Pinder, Mike (DGIF) <Mike.Pinder@dgif.virginia.gov>
Sent: Thursday, March 02, 2017 1:43 PM
To: Watson, Brian (DGIF); Tracy Brunner
Subject: RE: Atlantic Coast Pipeline- Candy darter

In Virginia, Candy Darter are nowhere near the path of this pipeline.

From: Watson, Brian (DGIF)
Sent: Thursday, March 02, 2017 1:00 PM
To: Tracy Brunner
Cc: Pinder, Mike (DGIF)
Subject: RE: Atlantic Coast Pipeline- Candy darter

Tracy:

Mike Pinder is DGIF's nongame fish biologist so I have copied him on this e-mail.

Brian

Brian T. Watson
Aquatic Resources Biologist/Malacologist
1132 Thomas Jefferson Road
Forest, VA 24551
(434) 525-7522, x 114
(434) 941-5990 (cell)

From: Tracy Brunner [mailto:Tracy.Brunner@erm.com]
Sent: Thursday, March 02, 2017 12:43 PM
To: Watson, Brian (DGIF)
Subject: Atlantic Coast Pipeline- Candy darter

Hi-
I am working with Sara Throndson on the Atlantic Coast Pipeline Project, and recently, the FWS asked us to include a review of the candy darter in our Biological Assessment due to the fact that it is under review for listing under the Endangered Species Act. I have reviewed the NHI data in the project area, and no occurrences of the candy darter were identified within 2 miles of the project. I was hoping you might be able to provide some additional information on where this species may occur in the counties the project crosses in Virginia. Any information you can provide would be helpful. Thank you, Tracy

Tracy Brunner
Senior Scientist & Biological Field Services Logistics Manager

Sara Throndson

From: Ewing, Amy (DGIF) <Amy.Ewing@dgif.virginia.gov>
Sent: Tuesday, March 07, 2017 8:27 AM
To: Sara Throndson
Cc: Reynolds, Rick (DGIF); Fernald, Ray (DGIF)
Subject: RE: ACP - VA 2017 Bat Letter

Hi Sara,
Thanks for the update. We have no concerns with the proposed survey plan. We look forward to reviewing the results.

Amy

Amy M. Ewing

Environmental Services Biologist/FWIS Program Manager
Chair, Team WILD (Work, Innovate, Lead and Develop)
VA Department of Game and Inland Fisheries
7870 Villa Park Dr., Suite 400, PO Box 90778, Henrico, VA 23228
804-367-2211 ☯ *www.dgif.virginia.gov*

"That land is a community is the basic concept of ecology, but that land is to be loved and respected is an extension of ethics" **Aldo Leopold, 1948**

From: Sara Throndson [mailto:Sara.Throndson@erm.com]
Sent: Wednesday, March 01, 2017 1:27 PM
To: Sumalee Hoskin; Morris, Troy - FS; Adams, Jennifer - FS; Ewing, Amy (DGIF); Reynolds, Rick (DGIF); Maria Martin; Peter Rocco
Cc: Jennifer C Broush (Services - 6); Spencer Trichell (spencer.trichell@dom.com); Prescott Weldon; Maggie Voth
Subject: ACP - VA 2017 Bat Letter

Sumalee, Jennifer, and Amy,

On behalf of the Atlantic Coast Pipeline Project please find the attached letter regarding 2017 bat surveys.

Atlantic looks forward to continued coordination with you on this project. Please contact Mr. Richard Gangle at (804) 273-2814 or richard.b.gangle@dom.com, or Ms. Sara Throndson at (612) 347-7113 or sara.throndson@erm.com if there are questions.

Thank you, Sara

Sara Throndson
Senior Scientist
ERM
1000 IDS Center, 80 S. 8th Street I Minneapolis I MN I 55402
Office 612-347-7113 I Cell 612-716-7812
sara.throndson@erm.com I www.erm.com

ERM *The business of sustainability*

Virginia Department of Historic Resources

Dominion Resources Services, Inc.
5000 Dominion Boulevard,
Glen Allen, VA 23060

February 27, 2017

Mr. Roger Kirchen, Director
Review and Compliance Division
Virginia Department of Historic Resources
2801 Kensington Ave.
Richmond, VA 23221

Subject: Addendum 4 Additional Deliverables for the Architectural Reconnaissance Survey of the Atlantic Coast Pipeline, LLC, Atlantic Coast Pipeline Project DHR File No. 2014-0710.

Dear Mr. Kirchen:

Atlantic Coast Pipeline, LLC (Atlantic) is pleased to submit the requested deliverables for the project referenced above. Enclosed are hard copies of the Virginia Cultural Resource Information System (V-CRIS) forms, site plans, and photos for all resources identified during this survey, as well as one CD with digital copies of all photos. The referenced addendum report was submitted to VDHR on January 10, 2017. The material enclosed was prepared by Atlantic's consultant, Environmental Resources Management. A table of the resources is included for your reference.

The submitted documents should complete the required documentation for the Project. Atlantic would appreciate receipt of a letter acknowledging acceptance of the report by your office. If you have any questions regarding the enclosed documents, please contact Richard B. Gangle at (804) 273-2814 or Richard.B.Gangle@dom.com, or by letter at:

Dominion Resources Services, Inc.
5000 Dominion Boulevard
Glen Allen, Virginia 23060

Respectfully submitted,

Robert M. Bisha

Robert M. Bisha
Project Director Atlantic Coast Pipeline

cc: Richard Gangle (Dominion)
Enclosure: **Table: Architectural Resources Surveyed**

Table: Architectural Resources Surveyed as Part of the Modified Project APE, Atlantic Coast Pipeline Project, Addendum 4, Organized by County (North to South).

Resource	Description	NRHP Recommendation
Augusta County		
007-0447	Hall-Parlor, ca. 1840	Eligible
007-0463	I-house, ca. 1800	Eligible
007-0467	I-house, ca. 1840s	Ineligible
007-0476	Hoy's Store and P.O., 1918	Eligible
007-0487	Queen Anne house, ca. 1900	Eligible
007-0490	Queen Anne cottage, ca. 1915	Eligible
007-0863	Beulah Baptist Church - Gothic Revival church and cemetery ca. 1880	Eligible
007-5703	Ranch house, ca. 1960	Ineligible
007-5704	Side-gable house, ca. 1940	Ineligible
007-5705	Vernacular bungalow, ca. 1920	Ineligible
007-5706	Vernacular dwelling, ca.1970	Ineligible
007-5707	Hall Parlor, ca. 1950	Ineligible
007-5708	Side-gable American small house, ca. 1960–1970s	Ineligible
007-5709	Ranch house, ca 1960	Ineligible
007-5710	I-house, 1919	Ineligible
007-5711	Gabled T Folk Victorian dwelling, ca. 1900	Ineligible
007-5712	Side-gable vernacular dwelling, ca. 1925	Ineligible
007-5713	I-house, ca. 1900	Ineligible
007-5714	Vernacular barn, ca. 1920–1930	Ineligible
007-5715	Central hall vernacular house, ca. 1930	Ineligible
007-5716	Side-gabled Ranch house, ca. 1960s	Ineligible
007-5717	Side-gabled vernacular house, ca. 1950s	Ineligible
007-5718	Side-gable Ranch, ca. 1960s	Ineligible
007-5719	I-house, ca. 1900	Ineligible
007-5720	Neoclassical cottage, ca. 1920	Ineligible
007-5721	Side-gable vernacular, ca. 1950	Ineligible
007-5722	Barn ca. 1950	Ineligible
007-5723	Gabled residence, ca. 1970	Ineligible
007-5724	Folk Victorian I-house, ca. 1900	Ineligible
007-5725	American Foursquare, ca. 1900	Ineligible
007-5726	Vernacular house, ca. 1960	Ineligible
007-5727	Cape Cod, ca. 1960	Ineligible
007-5728	I-house, ca. 1900	Eligible
007-5729	Steadfast Church and cemetery, ca. 1960	Ineligible
007-5730	Ridgecrest Baptist Church, parsonage, and cemetery, ca. 1950s	Ineligible
007-5731	I-house, ca. 1910	Ineligible

Resource	Description	NRHP Recommendation
007-5732	Deerfield Grocery, commercial and residential building, ca. 1950s	Ineligible
007-5733	Multiple gable roof dwelling, ca. 1900	Ineligible
007-5734	Side-gabled residence, ca. mid-20th century	Ineligible
007-5735	One-story wood frame dwelling, ca. 1930	Ineligible
007-5736	Vernacular bungalow, ca. 1930–1940	Ineligible
007-5737	Vernacular front-gabled house, ca. 1930	Ineligible
007-5738	Vernacular bungalow, ca. 1920	Ineligible
007-5739	Side-gabled vernacular house, ca. 1917	Ineligible
007-5740	Double-pen structure, ca. 1940	Ineligible
Bath County		
008-0011	The Wilderness - Georgian with Neoclassical details, 1797	Eligible
008-0126	Queen Anne, ca. 1887	Eligible
008-5008	Side-gabled vernacular house, ca. 1950	Ineligible
008-5064	Front-gabled vernacular bungalow, ca. 1950	Ineligible
008-5065	Front-gabled barn, ca. 1950	Ineligible
008-5066	Bungalow, ca. 1940	Eligible
008-5067	Cemetery, 1895	Ineligible
Buckingham County		
014-5085	Vernacular gable-front and wing house, ca.1910s	Ineligible
014-5086	Vernacular front-gable house ca. 1930s	Ineligible
Dinwiddie County		
026-5256	Minimal Traditional house, ca. 1960s	Ineligible
026-5257	Shiloh Baptist Church and cemetery, ca. 1960	Ineligible
Highland County		
045-5088	Front-gabled vernacular house, ca.1930	Ineligible
Nelson County		
062-5160	Warminster Rural Historic District	Eligible
062-5223	Ranch, ca. 1960	Ineligible
Southampton County		
087-5669	Agricultural buildings, ca. 1960–1990	Ineligible
Chesapeake County		
131-5325	Sunray Agricultural Historic District	Eligible
City of Suffolk		
133-0101	Federal/Adamesque I-house, 1865	Eligible
133-5443	Cape Cod house, ca. 1949	Eligible
133-5580	I-house, ca. 1880	Ineligible
133-5581	Single-pen gabled ell house, ca. 1950	Ineligible

North Carolina Agencies

North Carolina Wildlife Resources Commission

Sara Throndson

From: Stancil, Vann F <vann.stancil@ncwildlife.org>
Sent: Monday, February 13, 2017 7:11 AM
To: richard.b.gangle@dom.com; Sara Throndson
Cc: Black, Tyler R; Jones, Brena K.; Garrison, Gabriela
Subject: NCWRC comments on aquatics removal protocol for ACP in NC
Attachments: NCWRC comments on draft fish removal protocol for ACP 31 Jan 2017.pdf; ACP Tier 2 sites.xlsx

I thought this email went out before now but for some reason has been stuck in my outbox…

I have attached our comments on the latest version of the draft fish and other aquatics removal protocol. I have also attached an Excel spreadsheet that lists crossings that will need Tier 2 removal efforts. Note that these are on 2 worksheets because the format is different for different basins. Note that the HDD sites have multiple species that would prompt a Tier 2 removal if the crossing is not by HDD.

We are expecting to review a separate mussel removal / relocation protocol at some point in the near future. If this is inaccurate, please let me know.

Thanks,
Vann

Vann Stancil // Research Coordinator
Habitat Conservation Division

NC Wildlife Resources Commission
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North Carolina Wildlife Resources Commission

Gordon Myers, Executive Director

MEMORANDUM

TO: Richard B. Gangle
Dominion Resources Services, Inc.

FROM: Vann Stancil
Research Coordinator
Habitat Conservation

DATE: January 31, 2017

SUBJECT: Comments for draft Instream Fish Removal Protocol for the Atlantic Coast Pipeline project from Northampton County through Robeson County, NC.

Biologists from the North Carolina Wildlife Resources Commission (NCWRC) have reviewed the latest version of the draft document "North Carolina Fish and Non-Fish Aquatics Collection and Relocation Protocol for Instream Construction Activities" prepared by Environmental Solutions & Innovations, Inc. (ESI) and dated 4 Jan. 2017. Comments are provided in accordance with certain provisions of the Clean Water Act of 1977 (33 U.S.C. 1251-1387) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.).

Atlantic Coast Pipeline, LLC is a joint venture of Dominion Transmission, Inc., Duke Energy Corporation, Piedmont Natural Gas and Southern Gas Company. The project, known as the Atlantic Coast Pipeline (ACP), would deliver natural gas from supply areas in West Virginia to markets in Virginia and North Carolina. Approximately 198 miles of the ACP will cross Northampton, Halifax, Nash, Wilson, Johnston, Sampson, Cumberland and Robeson counties and traverse parts of the Chowan, Roanoke, Tar, Neuse, Cape Fear and Lumber basins.

ESI conducted mussel, crayfish, Carolina madtom, and Neuse River waterdog surveys in 2015 and 2016 and collected anecdotal data on other fish species at sites within the Chowan, Roanoke, Neuse, and Tar river basins. The NCWRC most recently commented on the draft removal protocol in a letter dated 22 Dec. 2016. This draft reflects those comments.

NCWRC biologists have identified which stream crossings need Tier 2 aquatic sampling. A spreadsheet listing those crossings and the rare, threatened, or endangered aquatic species that

Mailing Address: Division of Inland Fisheries • 1721 Mail Service Center • Raleigh, NC 27699-1721
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may be encountered at those sites accompanies this comment letter. The crossings listed for Tier 2 sampling reflect current knowledge of the distribution of rare, threatened, or endangered aquatic species. This list of Tier 2 sites may change if additional information on species distributions becomes available. Streams that are crossed with HDD will not need a Tier 2 removal. The NCWRC offers the following specific comments about the 4 Jan. 2017 draft protocol:

- Title – We recommend using terms such other aquatics or other aquatic taxa rather than non-fish aquatics.

- Section 2.2 – The possibility of Tier 2 relocation of aquatic taxa at wet crossing sites is mentioned near the end of this section. NCWRC biologists have identified wet crossing sites that warrant Tier 2 removal. The workspace and area of removal need to be defined for wet crossings. The area of removal should extend downstream of the crossing location to include any aquatic taxa that may be impacted by sedimentation resulting from construction activities.

- Section 3.1 – The maximum mesh diameter for the seine is 3/16 in. or 4.8 mm. The maximum mesh diameter for the block nets and dip nets should be 3/16 in. also.

- Section 3.2 – On the bottom of page 3 / top of page 4, is stated that multiple passes will be "made until three passes are completed and yield no additional live individuals." The last sentence of this section states that a "minimum of two passes without collection of additional individuals should be made" before starting construction activities. We recommend that two consecutive passes be completed without collecting additional individuals and without seeing evidence of live individuals which have not yet been captured from the collection area.

- Section 4.1 – the abbreviation DELTs should be defined.

- Section 4.4 – The museum is named the NC Museum of Natural Sciences, not the Museum of Natural History.

Thank you for the opportunity to review and comment on the report "North Carolina Fish and Non-Fish Aquatics Collection and Relocation Protocol for Instream Construction Activities." The NCWRC welcomes questions and comments and will provide additional feedback as requested. If I can be of further assistance, please contact me at (919) 284-5218 or vann.stancil@ncwildlife.org.

ec: Sara Throndson, ERM
Tyler Black, NCWRC
Brena Jones, NCWRC
Gabriela Garrison, NCWRC

Waterway	Basin	County	Milepost	Tier	Concerns
Beaverdam Swamp	Cape Fear	Sampson	118.9	2	Blackbanded Sunfish
Beaverdam Swamp	Cape Fear	Sampson	119.3	2	Blackbanded Sunfish
Beaverdam Swamp	Cape Fear	Sampson	119.7	2	Blackbanded Sunfish
Starlins Swamp	Cape Fear	Sampson	122.2	2	Blackbanded Sunfish
Starlins Swamp	Cape Fear	Sampson	122.3	2	Blackbanded Sunfish
Mingo Swamp	Cape Fear	Sampson	122.7	2	Blackbanded Sunfish
Black River/South River	Cape Fear	Cumberland	124.5	2	Blackbanded Sunfish, Ironcolor Shiner, Broadtail Madtom
UNT to Cedar Creek	Cape Fear	Cumberland	146.6	2	Banded Sunfish
Big Marsh Swamp	Lumber	Robeson	167.9	2	Blackbanded Sunfish, Santee Crayfish
Tenmile Swamp	Lumber	Robeson	170.7	2	Santee Crayfish
Saddletree Swamp	Lumber	Robeson	172.8	2	Blackbanded Sunfish, Ironcolor Shiner
Raft Swamp	Lumber	Robeson	174	2	Santee Crayfish
Richland Swamp	Lumber	Robeson	177	2	Ironcolor Shiner, Santee Crayfish
Burnt Swamp	Lumber	Robeson	178.5	2	Ironcolor Shiner, Santee Crayfish

Waterway	Basin	County	Crossing Method	Tier	Concerns
Jacks Swamp 1	Roanoke	Northampton		2	Banded Sunfish
Jacks Swamp 2	Roanoke	Northampton		2	Banded Sunfish
Cypress Creek 1	Roanoke	Northampton		2	Banded Sunfish
Cypress Creek 2	Roanoke	Northampton		2	Banded Sunfish
Cypress Creek 3	Roanoke	Northampton		2	Banded Sunfish
Roanoke River	Roanoke	Northampton, Halifax	HDD	NA	
Little Quankey Creek	Roanoke	Halifax		1	
Quankey Creek	Roanoke	Halifax		1	
Marsh Swamp	Tar	Halifax		1	
Beaverdam Swamp	Tar	Halifax		1	
Burnt Coat Swamp	Tar	Halifax		1	
Jacket Swamp	Tar	Halifax		1	
Rocky Swamp	Tar	Halifax		1	
Fishing Creek	Tar	Halifax, Nash	HDD	NA	Neuse River Waterdog
Black Swamp	Tar	Nash		1	
Swift Creek	Tar	Nash	HDD	NA	Neuse River Waterdog
Flat Rock Branch 1	Tar	Nash		1	
Flat Rock Branch 2	Tar	Nash		1	
Pig Basket Creek	Tar	Nash		2	Mimic Shiner
Stony Creek	Tar	Nash		2	Mimic Shiner & Neuse River waterdog
Little Sapony Creek	Tar	Nash		2	Mimic Shiner and Ironcolor Shiner
Sapony Creek	Tar	Nash		2	Mimic Shiner and Ironcolor Shiner
Tar River	Tar	Nash	HDD	NA	Neuse River Waterdog
Toisnot Swamp	Neuse	Nash		2	Blackbanded Sunfish and Ironcolor Shiner
Millstone Creek	Neuse	Wilson		1	
Marsh Swamp	Neuse	Wilson		1	
Marsh Swamp UT	Neuse	Wilson		1	
Contentnea Creek	Neuse	Wilson	HDD	NA	Neuse River Waterdog
Little Buffalo Creek	Neuse	Johnston		2	Banded Sunfish and Ironcolor Shiner, Neuse River Waterdog
Little River	Neuse	Johnston	HDD	NA	Neuse River Waterdog
Little Creek	Neuse	Johnston		1	
Polecat Branch and AR	Neuse	Johnston		1	
Neuse River	Neuse	Johnston		2	Sturgeon Critical Habitat, Neuse River Waterdog
Hannah Creek	Neuse	Johnston		2	Ironcolor Shiner
Whiteoak Branch	Neuse	Johnston		2	Ironcolor Shiner
Stone Creek	Neuse	Johnston		2	Ironcolor Shiner
Johnson Swamp	Neuse	Johnston		2	Ironcolor Shiner
Johnson Swamp UT	Neuse	Johnston		1	
John K. Swamp	Neuse	Johnston		1	

Sara Throndson

From: Garrison, Gabriela <gabriela.garrison@ncwildlife.org>
Sent: Monday, February 20, 2017 11:54 AM
To: Sara Throndson; Ellis, John; Tracy Brunner; Spencer Trichell (spencer.trichell@dom.com)
Subject: RE: ACP - route adjusements and RCW

Hi Sara,

Thank you for bringing that route adjustment to our attention. After reviewing the attached map, we (NCWRC) agree that no further RCW surveys are necessary for this particular area.

Thank you,

Gabriela

Gabriela Garrison
Eastern Piedmont Habitat Conservation Coordinator

NC Wildlife Resources Commission
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gabriela.garrison@ncwildlife.org

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From: Sara Throndson [mailto:Sara.Throndson@erm.com]
Sent: Thursday, February 09, 2017 4:37 PM
To: Ellis, John <john_ellis@fws.gov>; Garrison, Gabriela <gabriela.garrison@ncwildlife.org>; Tracy Brunner <Tracy.Brunner@erm.com>; Spencer Trichell (spencer.trichell@dom.com) <spencer.trichell@dom.com>
Subject: ACP - route adjusements and RCW

Hi John and Gabriela,

As you are aware the ACP project completed aerial surveys to address Red-cockaded Woodpeckers in March 2015 and again in March 2016 along the proposed ACP route. The study plans and reports for these two years of study have been submitted to your office and this species is discussed in detail in the BA that was provided to you in late January. Atlantic has identified one location in North Carolina where the proposed route has shifted slightly in an area with potential for RCW.

Atlantic has already completed a significant level of effort for RCW and does not currently plan to complete additional surveys at this slight route adjustment. Please review the attached map that shows the adjustment and confirm that you do not require additional surveys.

Thank you, Sara

Sara Throndson
Senior Scientist

Dominion Resources Services, Inc.
5000 Dominion Boulevard,
Glen Allen, VA 23060

March 10, 2017

BY E-MAIL

Gabriela Garrison and Vann Stancil
North Carolina Wildlife Resources Commission
Sandhills Depot, P.O. Box 149
Hoffman, NC 28347

Re: Dominion Transmission, Inc., Atlantic Coast Pipeline
Submittal of Revised North Carolina Fish and Aquatics Collection and Relocation Protocol for Instream Construction Activities for the Proposed Atlantic Coast Pipeline in North Carolina

Dear Ms. Garrison and Mr. Stancil:

Atlantic Coast Pipeline, LLC (Atlantic) is pleased to provide the revised North Carolina Fish and Aquatics Collection and Relocation Protocol for Instream Construction Activities for the Proposed Atlantic Coast Pipeline (attached). This revised plan describes the methods that Atlantic has agreed to implement to remove fish and other aquatics during construction and incorporates comments received from the NCWRC on 4 January 2017.

As described in the attached revised protocol, Atlantic proposes to implement collection and relocation in two separate categories of streams. Tier 1 streams are those not likely to support rare, threatened or endangered aquatic species. In Tier 1 streams, Atlantic proposes to remove fishes and other aquatics from workspaces *after* the placement of temporary dam structures (e.g., sand bags, sheet piling, etc.). Tier 2 streams are those potentially supporting rare, threatened, or endangered fish and other aquatic species. To reduce impacts to these species, Atlantic proposes to remove them from workspaces *prior* to placement of temporary dam structures. Atlantic requests your comments on the attached revised plan.

Project and Company Background

Atlantic is a company formed by four major U.S. energy companies – Dominion Resources, Inc., Duke Energy Corporation, Piedmont Natural Gas Co., Inc., and Southern Gas Company. Atlantic will own and operate the proposed ACP, an approximately 600-mile-long, interstate natural gas transmission pipeline system designed to meet growing energy needs in Virginia and North Carolina. The ACP will deliver up to 1.5 million cubic feet per day (bcf/d) of natural gas to be used to generate electricity, heat homes, and run local businesses. The underground pipeline project will facilitate cleaner air, increase reliability and security of natural gas supplies, and provide a significant economic boost in Virginia and North Carolina. For more information about the ACP, visit the company's website at www.dom.com/acpipeline. Atlantic has contracted with DTI, a subsidiary of Dominion, to permit, build, and operate the ACP on behalf of Atlantic.

Atlantic looks forward to continued coordination with you on this project. Please contact Mr. Richard B. Gangle at (804) 273-3019 or Richard.B.Gangle@dom.com, if there are questions regarding this protocol. Please direct written responses to:

Richard B. Gangle
Dominion Resources Services, Inc.
5000 Dominion Boulevard
Glen Allen, Virginia 23060

Sincerely,

Robert M. Bisha
Technical Advisor, Atlantic Coast Pipeline

Cc: John Ellis, U.S. Fish and Wildlife Service
Sarah McRae, U.S. Fish and Wildlife Service
Judith Ratcliffe, North Carolina Department of Environmental and Natural Resources
Tyler Black, North Carolina Wildlife Resources Commission

Attachments:
Revised North Carolina Fish and Aquatics Collection and Relocation Protocol for Instream Construction Activities