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Mr. Nathaniel J. Davis, Sr., Deputy Secretary
Federal Energy Regulatory Commission
Mail Code: DLC, HL-11.2
888 First St., NE
Washington, DC 20426

Subject Draft Environmental Impact Statement (DEIS) for the Proposed Atlantic Coast Pipeline, Supply Header Project, and Capacity Lease Proposal, FERC No. CP15-554-001, CP15-555-000 and CP15-556-000, various counties in Pennsylvania, West Virginia, Virginia and North Carolina.

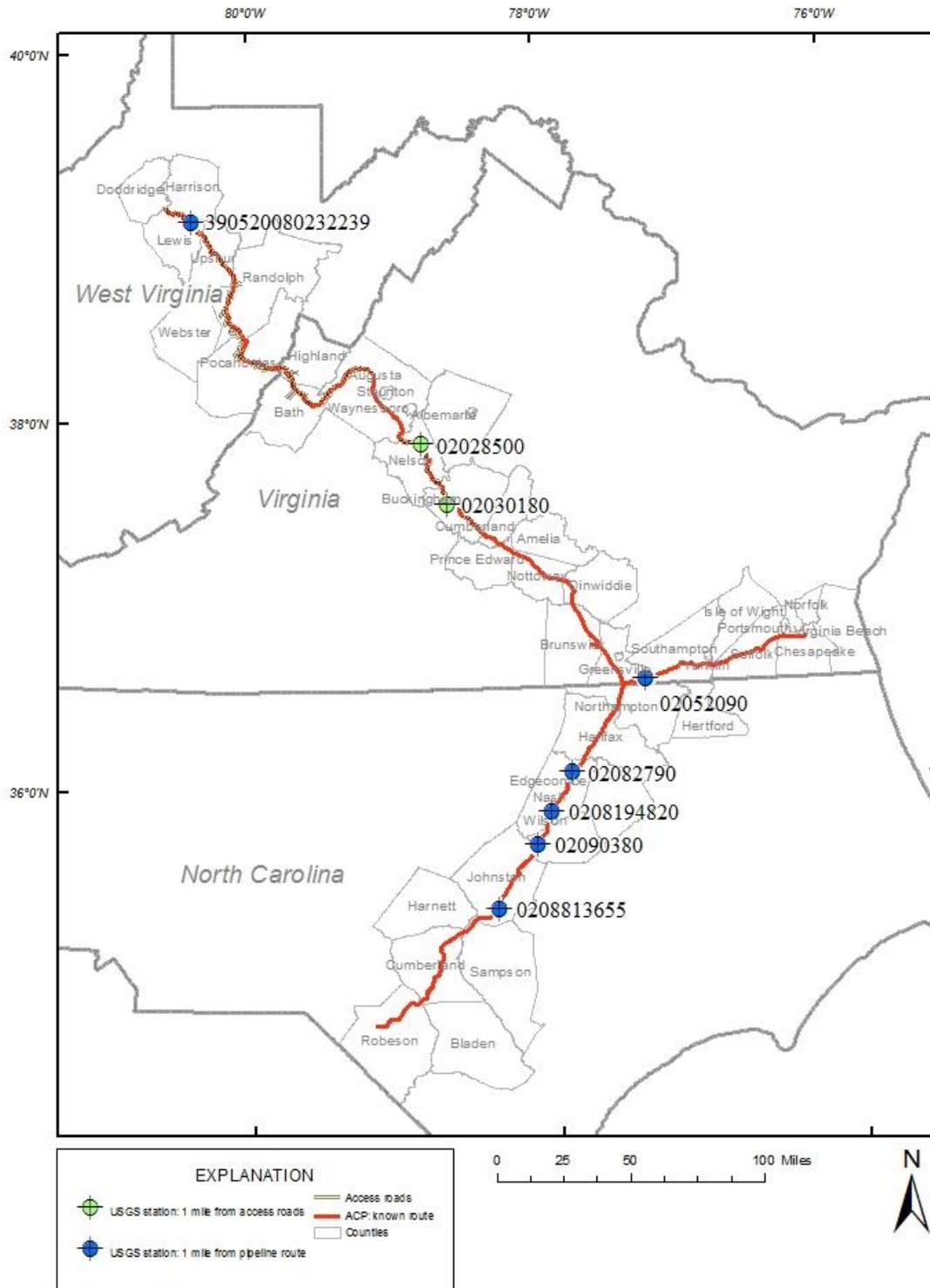
The Department of the Interior has reviewed the DEIS by the Federal Regulatory Commission for the proposed Atlantic Coast Pipeline (ACP) and Supply Header Project (SHP) received on January 4, 2017. This memo is intended to inform readers of potential disturbance of USGS streamgages as well as concern for water quality, public water supply, construction risks to water resources in karst and steep slope conditions, and ecological stream flows.

COMMENT: USGS Streamgaging

The USGS operates streamgaging and water quality stations along streams throughout the U.S. to collect water quantity and quality data for a variety of purposes. Unimpeded operation of USGS streamgages is essential for our stakeholders. Streamgages have permanent infrastructure and are vulnerable to disruption when significant construction occurs close to these stations. Some streamgages are used intermittently. The table and review figure 1 (below) show information on active USGS streamgages, or sites where there was an active streamgage within the last 10 years, within one mile of the known pipeline route or access roads in Virginia. USGS Water Science Centers in Virginia, West Virginia, and North Carolina should be notified prior to construction near these sites.

USGS Station Number	USGS Station Name	USGS Site Status	Within 1 mile of:	Latitude (DD)	Longitude (DD)	State	County name
02090380	CONTENTNEA CREEK NEAR LUCAMA, NC	Current streamgage	Pipeline	35.691111	-78.109722	NC	Wilson
02028500	ROCKFISH RIVER NEAR GREENFIELD, VA	Current streamgage	Access Road	37.869585	-78.823354	VA	Nelson
02052090	MEHERRIN RIVER NEAR BRYANTS CORNER, VA	Current streamgage	Pipeline	36.57	-77.361389	VA	Southampton County
02030180	AUSTIN CREEK AT RT 607 NEAR BUCKINGHAM, VA	Active within 10 years	Access Road	37.542222	-78.657778	VA	Buckingham County
0208813655	WHITE OAK BR AT SR1144 NR STRICKLAND CROSSROADS, NC	Active within 10 years	Pipeline	35.346111	-78.375222	NC	Johnston County
02082790	SWIFT CREEK NR RED OAK, NC	Active within 10 years	Pipeline	36.074319	-77.869426	NC	Nash County
0208194820	TAR RIVER AT SR1001 AT STRICKLAND CROSSROADS, NC	Active within 10 years	Pipeline	35.865456	-78.009608	NC	Nash County
390520080232239	D10.0HACKERS CR @ HWY 14 BR NR JANE LEW WV	Active within 10 years	Pipeline	39.088983	-80.389256	WV	Lewis County

Review Figure 1. Atlantic Coast Pipeline route and USGS stations within one mile of proposed route, or known access roads.



COMMENT: Mobilization of mercury into stream water

Mercury is the water-quality contaminant of greatest concern for this project. Mercury bound to streambed sediment and associated colloidal matter can be mobilized when bed materials are disturbed, such as when a trench for pipeline installation is excavated, or where sediment spoils piles are eroded by precipitation. The proposed route of the ACP pipeline crosses the South River upstream of the city of Waynesboro, Virginia. From 1929-50, high levels of mercury waste was discharged from a textile plant, resulting in the downstream sections of the South river to be listed on Virginia's 303(d) list of impaired waters (Eggleston, 2009). Previous studies have shown highly elevated levels of mercury in the groundwater, adjacent flood plain soils, and downstream South River sediments. The current known proposed ACP route (used for this review) is less than 5 miles from the former Waynesboro textile site. A former version of the route shows it about 3 miles from the former textile site. If the pipeline route were altered again to where it crossed the South River downstream of this site, or disturbed contaminated areas, the high potential for mercury release could become a critical environmental issue.

Total mercury should be quantified upstream and downstream of the crossing point as an essential element of the water-quality monitoring conducted before and after installation of the pipeline. All water utilities downstream of the crossing point with water intakes should be informed of the construction activities and concern about mercury levels. Additionally, all local and state agencies responsible for environmental health and recreational or activities that may expose residents to this potential hazard should be informed.

COMMENT: Other Water-Quality Issues resulting from pipeline and access road construction

The ACP and SHP will traverse parts of four states: Pennsylvania, West Virginia, Virginia and North Carolina. In addition to federally mandated surface-water-quality standards, each state has its own set of standards, and defines tiers of water quality based on ambient conditions and intended use. As there is potential for water-quality degradation at and downstream of crossings, pre-and post-construction testing will be conducted, as stated in the DEIS. The DEIS lists many analytes, but not arsenic. As streams in some areas along the Eastern Seaboard have a high probability of mobilizing arsenic if sediments are disturbed, it is suggested that total arsenic be added to the analyte list. Sampling methods should comply with approved EPA and state/commonwealth sampling, analytical and data quality assurance, and quality control procedures. The samples should be analyzed using EPA-approved methods, and the analysis should be performed by a laboratory certified to conduct the analyses in each state/commonwealth.

If water-quality issues such as increased turbidity (the most likely problem), low dissolved oxygen, or elevated levels of contaminants of concern persist, the appropriate state and local health and environmental agencies should be informed, and monitoring must continue until background conditions are restored.

Two additional water-quality topics discussed in the DEIS need additional consideration:

4.3.1.4. Wellhead and aquifer protections areas (WHPAs)

These areas should be protected from contamination in order to protect public water supplies, as described by the Safe Drinking Water Act. Four WHPAs would be crossed by the ACP as currently proposed. Changes in local hydrology from clearing, grading, excavation and compaction may be detrimental to these areas and the underlying groundwater. Therefore, serious consideration should be given to rerouting these access roads away from such important recharge areas.

4.3.1.5 Springs.

Accumulating information about and contacting owners of these features are ongoing. At present, 122 springs within 500 feet of the ACP workspace in karst areas and 150 feet in all other areas have been identified. Four more were identified near SHP. This investigative process should be completed before construction is to begin, owners and users of these water supplies should be informed about the pipeline installation, and unnecessary risks to water quality avoided

COMMENT: Public supply surface water intakes.

The USGS developed a database containing information about wells, surface-water intakes, and distribution systems of public supply water systems in the United States (Price and Maupin, 2014). Location information for public supply systems is restricted from distribution to the general public, and exact intake locations are not shown in this review. The USGS public supply database (PSDB) locations were intersected with the National Hydrography dataset, and downstream distances calculated between the ACP known route and surface water intakes. Towns in the following table, and shown on review figure 2, have intakes within 5 miles downstream of the ACP known route. As a precaution, these towns should be contacted and alerted to the time of construction activities upstream of their intakes.

Town Name	State	County name
Jane Lew	WV	Lewis
Buckhannon	WV	Upshur
Staunton	VA	Augusta
Emporia	VA	Greenville
Portsmouth	VA	Portsmouth
Rocky Mount	NC	Nash/Edgecombe
Wilson	NC	Wilson

COMMENT: Public supply well contributing areas in carbonate aquifers.

Vulnerability to contamination of a public supply well depends on the local hydrogeology and geochemical conditions, plus the location, design, construction, operation, and maintenance of the well (Ebberts and others, 2013). Local hydrologic conditions, construction, and pumping activities are important factors determining the local recharge area for a well. Several USGS studies have modelled the areas contributing recharge to public supply wells (Clark and others, 2008; Crandall and others, 2009; Heywood, 2013; Kauffman and others, 2001; Lindgren and others, 2011). Crandall and others (2009) and Lindgren and others (2011) modelled these areas in carbonate terrains. These studies illustrate that recharge areas to a public supply well area are

variable in size and shape, and highly dependent on the local hydrogeology, well construction, and pumpage. However, simulations by these studies strongly suggest that any activity at 150 feet in non-carbonate terrain, or 500 feet in carbonate terrain, would be within the well recharge area. Depending on the location of the well and the orientation of the recharge area, significant well recharge could be affected by activities within several thousand feet, or more. The DEIS should fully explain what published research these selected distances (500 feet in carbonate; 150 feet everywhere else) were based upon.

COMMENT: Trench excavation by blasting

About 25% of pipeline route may require blasting. As stated in the DEIS: *“blasting of the bedrock could potentially damage nearby pipelines and other structures and could initiate landslides, karst activity, or ground subsidence over underground mines. Blasting of bedrock, particularly karst bedrock, could create fractures in the rock, temporarily affecting local groundwater flow patterns and groundwater yield of nearby wells and springs around the blast site, and affecting their water quality by a temporary increase in turbidity levels shortly after blasting.”*(4.1.2.2)

Blasting should not be conducted in karst areas, unless the risks stated above have been thoroughly evaluated for each such area by the appropriate qualified professionals, and deemed to be minimal. The potential costs to infrastructure, the environment water resources and even human life far outweigh the economic and convenience benefits of routing the pipeline through karst areas where blasting is required.

The blasting plan described (4.1.2.2) is deficient in the following areas:

- *“Pending landowner permission, preconstruction well testing would be conducted to evaluate water quality and yield. In the event that construction has adversely affected the water quality and/or yield of a well, Atlantic and DTI would conduct post-construction testing and provide an alternative water source or a mutually agreeable solution.”* Groundwater-quality analysis before and after pipeline construction should be conducted. If water samples from wells within the buffer area cannot be obtained (e.g. of home owner(s) refuse(s), then the water quality in nearby wells should be analyzed before and after construction.
- The possibility of damaging nearby pipelines is mentioned, but there is nothing in this plan to cover preparedness. The plan should state the actions that would be taken if a pipeline carrying natural gas, crude oil or refined petroleum products was compromised, resulting in a spill, fire, explosion or other mishap.

COMMENT: Construction in steep-slope areas

Ground disturbance in steep-slope terrain can cause landslides and other types of land movement. Sudden movement of large amounts of rock, soil and sediment can result in changes to surface water and groundwater hydrology and water quality and is of concern. Substantial consideration has been given to this risk category, but the work is in progress, as stated in the DEIS. Some basic definitions, concepts and rules for dealing with steep slopes have been developed, and some field reconnaissance completed, as stated in the DEIS text:

“The decision making and pipeline construction through areas of steep slopes is being investigated as of this version of the DEIS. Some desktop analysis, aerial reconnaissance, and ground reconnaissance have been completed by Geosyntec Consultants, Inc. [Geosyntec], 2016) under the heading “Geohazard Analysis Program. Atlantic and DTI are developing a Best in Class Steep Slope Management Program (BIC Team) to incorporate the results of the Geohazard Analysis Program into the project design and engineering and to address issues of landslide potential and susceptibility.

“Field reconnaissance and workshops are underway with subject matter experts to further identify, assess, and mitigate slope instability hazards. The BIC Team is considering, but has not currently adopted, specific screening criteria for slopes that would be identified for site-specific requirements for construction and restoration.

The criteria stated in the DEIS appear reasonable, but the risk evaluation and planning should be completed and documented in the final EIS before construction begins in steep-slope areas. Similar comments were submitted by FERC.

COMMENT: Streamflow to protect aquatic species

Section 4.6.2.3 ("North Carolina"), pp. 4-182 to 4-238, various sub headings: a number of "Sensitive Aquatic Species Endangered Habitats" might be impacted by the proposed actions. The DEIS states that the companies will monitor six rivers and other potentially impacted waterbodies by measuring water withdrawals based on USGS data. The following is representative of the wording of the six instances: "Atlantic and DTI would monitor water levels during withdrawals for hydrostatic testing and HDDs and **ensure that they do not exceed 25 percent of the waterbody's discharge (as measured at the nearest upstream USGS streamgage).**" We suggest that the authors of the DEIS explicitly state what levels are proposed to be used as baseline discharge volumes (e.g., 25% of what?). If there are any comments, please contact J. Michael Norris (mnorris@usgs.gov).

Sincerely,



Lindy Nelson
Regional Environmental Officer

cc: Mark Bennett, Center Director, USGS Virginia -West Virginia Water Science Center
Eric Strom, Center Director, South Atlantic Water Science Center

References:

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