



Transcontinental Gas Pipe Line Company, LLC

PA DEP Section 401 Water Quality Certification Application

**Module S3 – Identification and Description of Potential
Project Impacts**

Leidy South Project

August 2019

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MODULE S3

IDENTIFICATION AND DESCRIPTION OF POTENTIAL PROJECT IMPACTS

According to Module 3 of the EA Form Instructions, permanent impacts are defined as areas that are affected by a water obstruction or encroachment that consist of both direct and indirect impacts that result from the placement or construction of a water obstruction or encroachment and include areas necessary for the operation and maintenance of the water obstruction or encroachment located in, along or across, or projecting into a watercourse, floodway or body of water. Temporary impacts are defined as areas affected during the construction of a water obstruction or encroachment that consist of both direct and indirect impacts located in, along or across, or projecting into a watercourse, floodway or body of water that are restored upon completion of construction. This area does not include areas that will be maintained as a result of the operation and maintenance of the water obstruction or encroachment located in, along or across, or projecting into a watercourse, floodway or body of water. A summary of permanent and temporary, and direct and indirect impacts is provided in Table S3.A-1.

S3.A Summary of the Proposed Temporary and Permanent, Direct and Indirect Impacts

As part of the Project, unavoidable resource impacts are proposed at each pipeline component and Compressor Station 607. Table S3.A-1 below outlines the overall impacts as it relates to each Project component. Detailed impacts by resource are provided in subfacility summary tables found in Appendix S3-1.

Table S3.A-1 Aquatic Resource Impact Summary Table				
Project Component¹	Impact Type	Resource¹	Direct (Acres)	Indirect (Acres)
Benton Loop	Permanent	Wetland	-	1.52
		Watercourse	-	0.45
	Temporary	Wetland	-	1.12
		Watercourse	-	0.94
Hilltop Loop	Permanent	Wetland	-	0.36
		Watercourse	-	1.05

Table S3.A-1 Aquatic Resource Impact Summary Table				
Project Component¹	Impact Type	Resource¹	Direct (Acres)	Indirect (Acres)
	Temporary	Wetland	-	0.57
		Watercourse	-	1.00
Hensel Replacement	Permanent	Wetland	0.02	1.34
		Watercourse	-	1.72
	Temporary	Wetland	-	1.07
		Watercourse	-	0.42
Compressor Station 607	Permanent	Wetland	0.20	-
		Watercourse	-	-
	Temporary	Wetland	-	0.13
		Watercourse	-	-
Notes:				
1. Watercourse impacts include floodway impacts				

Permanent direct impacts would include 0.22 acres. These impacts would be associated with improvements to an existing access road (Hensel Replacement) that will result in permanent fill within 0.02 acres of Palustrine Emergent (PEM) wetlands and permanent fill within 0.20 acres of PEM wetlands (Compressor Station 607).

Permanent indirect impacts would include 3.22 acres to wetlands and 3.22 acres to watercourses. These permanent indirect impacts would be associated with the existing and proposed maintained ROW and include functional conversion of Palustrine Forested (PFO) and Palustrine Scrub-Shrub (PSS) wetlands; which will result in 0.11 acres of conversion. This conversion is due to these features being located within the proposed permanent maintained pipeline right-of-way (ROW). A 10-foot-wide herbaceous corridor will be maintained over the center of the pipeline within the wetlands and riparian buffer areas. Trees within 15 feet of the centerline or between existing pipelines will be removed to maintain the integrity of the pipelines. This impact category includes the Leidy line A Abandonment proposed to be grouted in place and removed.

There are no temporary direct impacts proposed for the Project.

Temporary indirect impacts would include 2.89 acres to wetlands and 2.36 acres to watercourses. These temporary indirect impacts would be associated with impacts outside the existing and proposed maintained ROW.

S3.B Standard Information Responses

The below responses address resources identified in Module 2, Table S2.A.5-1.

S3.B.1 National, State, or Local Park, Forest or Recreation Area

The Project facilities, including the pipelines and aboveground facilities, will neither cross nor be located within 0.25 mile of federal lands, including national parks or national forests, however, portions of the Project are located on state forest land. Table S3.B.1-1 presents a summary of public land, conservation land, recreational areas, and other designated or special uses areas crossed by the Project facilities, including land ownership type. The locations of these areas are shown on Figures 8B-1 and 8B-2.

Table S3.B.1-1 Federal, State, and Municipal Lands, and Recreation Areas within 0.25 Mile of the Project Facilities								
Facility/ County	Begin MP ^a	End MP ^a	Distance Crossed (miles)	Name	Distance (miles) and Direction	Land Affected During Construction ^b (acres)	Land Affected During Operation ^c (acres)	Description
Hensel Replacement^d								
Clinton	188.51 193.96	193.51 194.00	5.5	Sproul State Forest	Crossed	101.3	15.4	State forest managed by the DCNR for preservation and recreational purposes
Clinton	190.01		<0.1	Two Mile Run Snowmobile Trail	Crossed	<0.1	<0.1	Snowmobile trail within Sproul State Forest
Clinton	192.72		<0.1	Donut Hole Trail	Crossed	<0.1	<0.1	Multi-use trail within Sproul State Forest
Hilltop Loop								
Clinton	183.51	183.52	<0.1	Sproul State Forest	Crossed	3.0	<0.1	State forest managed by the DCNR for preservation and recreational purposes

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Table S3.B.1-1 Federal, State, and Municipal Lands, and Recreation Areas within 0.25 Mile of the Project Facilities								
Facility/ County	Begin MP ^a	End MP ^a	Distance Crossed (miles)	Name	Distance (miles) and Direction	Land Affected During Construction ^b (acres)	Land Affected During Operation ^c (acres)	Description
Benton Loop								
None identified								
Compressor Station 607								
None identified								
Compressor Station 610								
None identified								
Compressor Station 620								
None identified								
MLV Facility at MP 116.95 (Benton Loop)								
None								
MLV Facility at MP 188.15 (Hensel Replacement)								
Clinton	188.15	0.0		Sproul State Forest	0.1 / west	0.0	0.0	State forest managed by the DCNR for preservation and recreational purposes
Sources: PADCNr 2017; PADCNr 2019b								
^a Mileposts for the Project are based on Transco Leidy Line A, and do not reflect actual pipeline footage. Lengths reported in the table reflect actual pipeline length.								
^b Construction impacts include area within permanent ROW and ATWS.								
^c Operation impacts associated with maintenance of permanent ROW.								
^d Hensel Replacement includes the new Leidy Line D installation and the Leidy Line A abandonment.								
Key:								
ATWS = additional temporary workspace								
MP = Milepost								
NW = Northwest								
DCNR = Pennsylvania Department of Conservation and Natural Resources								
ROW = right-of-way								

Sproul State Forest

The Pennsylvania Department of Conservation Natural Resources (DCNR) manages state forests in Pennsylvania and is responsible for issuing the License for Right-Of-Way on State Forest Land across its land. State forests are managed by the Bureau of Forestry, a division of the DCNR. The DCNR has developed siting criteria and guidelines for ROW development in state forests which Transco has utilized as part of the Project design.

Transco met with the DCNR on December 5, 2018, to discuss the process for applying for the License for Right-Of-Way on State Forest Land to cross Sproul State Forest. As part of the DCNR License for Right-Of-Way on State Forest Land application process, and to receive field survey permission, Transco submitted its application for License for Right-Of-Way on State Forest Land on December 21, 2018. Transco met with the DCNR again on April 19, 2019 for the Pre-Survey meeting as part of the License for Right-of-Way application process. The DCNR subsequently granted survey permission to Transco on April 22, 2019. Transco plans to submit the State Forest Environmental Review application to the DCNR in August 2019. Transco will continue the License for Right-of-Way application process which, if issued, would allow Transco to construct and operate the portions of the Hensel Replacement and Hilltop Loop that cross Sproul State Forest.

The proposed Hensel Replacement crosses Sproul State Forest for 5.5 miles, while 5.3 miles of Leidy Line A will be abandoned within the state forest. The Hilltop Loop crosses Sproul State Forest for less than 0.1 mile. Various recreational activities are allowed within the forest, including hunting, horseback riding, mountain biking, off-road use of all-terrain vehicles, cross-country skiing, and snowmobiling (PADCNr n.d.). In addition, Sproul State Forest is managed for timber production.

The Tamarack Swamp Natural Area located adjacent to the Hensel Replacement LOD is a 267-acre area within the Sproul State Forest that supports eight wetland types, including the tamarack and black spruce swamp for which it is named. Transco is not proposing disturbance within the limits of the Tamarack Swamp Natural Area and routed the proposed Hensel Replacement to avoid the Tamarack Swamp Natural Area.

Table S3.B.1-2 summarizes the land affected during construction on Sproul State Forest. Transco minimized impacts on Sproul State Forest by co-locating the proposed Hensel Replacement and proposed Hilltop Loop with existing ROWs and siting the proposed pipelines away from any active recreation areas to the extent possible.

**Table S3.B.1-2
 Land Use Impacts on Sproul State Forest**

Facility	Open Land (acres)		Transportation Land (acres)		Upland Forest/Woodland (acres)		Wetlands (acres) ^a		Open Water (acres)		Total (acres)	
	Cons	Op	Cons	Op	Cons	Op	Cons	Op	Cons	Op	Cons	Op
Hensel Replacement	60.2	1.2	25.7	9.5	13.9	4.6	1.3	0.2	0.2	0.0	101.3	15.4
Hilltop Loop	0.7	0.0	1.8	0.0	0.5	0.0	0.1	0.0	0.0	0.0	3.0	0.0
Total	60.9	1.2	27.4	9.5	14.4	4.6	1.4	0.2	0.2	0.0	104.3	15.4

Source: Existing land use within proposed pipeline construction and operations workspaces were identified using field surveys and aerial imagery.

^a Hensel Replacement includes the new Leidy Line D installation and the Leidy Line A abandonment.

Key:
 Cons = Construction
 Op = Operation

In addition, Transco developed its proposed abandonment plan for Leidy Line A to minimize impacts on Sproul State Forest. Transco is proposing to remove the existing Leidy Line A with the exception of an approximate 0.8-mile portion of the Leidy Line A within the Tamarack Swamp Natural Area and associated wetlands, which will be abandoned in place and grouted. Work needed for the removal and abandonment of Leidy Line A will take place within the workspace associated with the installation of the proposed Hensel Replacement.

As part of the application process to cross Sproul State Forest, Transco is continuing to coordinate with the DCNR’s Bureau of Forestry to identify additional measures to minimize disturbance to Sproul State Forest and its visitors. Transco identified two trails crossed by the Hensel Replacement (see Table S3.B.1-1, above), including one snowmobile trail (Two Mile Run) and one hiking trail (Donut Hole Trail) (PADCNR 2018).

Within Sproul State Forest, the Hensel Replacement Proposed Leidy Line D crosses the Foley Tract. Transco’s possesses an existing right-of-way agreement dated June 27, 1996 and recorded September 3, 1996 with Clinton County granted Transco a 75-foot wide easement across the Foley Tract (15 feet on the northerly side, and 60 feet on the southernly side of Transco’s existing pipeline). The right-of-way agreement allows for a maximum of two pipelines, the existing Leidy Line C pipeline and one additional pipeline, with rights to clear and use, as

temporary workspace during construction of the additional pipeline, and an additional 25 feet of temporary workspace for the construction of an additional pipeline. While, the Foley Tract was acquired by the DCNR in 2003, and portions of the tract are proposed for inclusion in the Tamarack Swamp Natural Area, Transco's proposed route would cross the Foley Tract at a location where these existing rights dated June 27, 1996 are valid. Transco is not seeking modifications or proposing a new license boundary to its existing easement on the Foley Tract.

S3.B.2 National Natural Landmark

The Project facilities, including the pipelines and aboveground facilities, will neither cross nor be located within 0.25 mile of national natural landmarks or registered national landmarks (USGS 2014, 2015).

S3.B.3 National Wildlife Refuge, or Federal, State, or Private Wildlife or Plant Sanctuaries

The Project facilities, including the pipelines and aboveground facilities, will neither cross a National Wildlife Refuge, or Federal, State, or Private Wildlife or Plant Sanctuaries.

S3.B.4 State Game Lands

The Project facilities, including the pipelines and aboveground facilities, will neither cross nor be located within 0.25 mile of state game land.

S3.B.5 Areas Identified as Prime Farmland

Construction of the pipeline will affect approximately 133.49 acres of prime and important farmland soils; while construction of the aboveground facilities will affect approximately 91.7 acres of prime and important farmland soils. Appendix S3-2 identifies important farmlands crossed by the Project.

Construction may result in temporarily removing those soils from agricultural production if construction occurs during the growing season. Within the permanent footprint of the proposed aboveground facilities, there would be a long-term loss of prime and important farmland soils. Pipeline construction and operation will not result in any long-term loss of prime and important farmland. Soils that are currently designated as prime farmland and farmland of statewide importance will retain their designation after construction. While some short-term decreases in agricultural productivity may result because of the disturbance of soil during construction, those effects can be mitigated over time by the restoration measures outlined in Appendix S3-3 Transco Project Specific Upland Erosion Control, Revegetation, and Maintenance Plan, and by resumption

of proper soil management by landowners. Pipeline operation will not adversely affect agricultural soils, including prime farmland and farmland of statewide importance.

S3.B.6 Source for a Public Water Supply

Public Water Supply Well Information

Transco reviewed public water supply well information for Pennsylvania, which is available on the Pennsylvania Department of Environmental Protection (PADEP) *eMapPA* online map-based query (PADEP 2019). Based on this review, no public water supply wells are within 0.25 mile of the Project.

Wellhead Protection Areas

Transco reviewed the PADEP *eMapPA* GIS-based web-based mapping tool to identify if any WHPAs are within 0.25-mile of the Project. Based on this review of *eMapPA*, no public water systems or WHPAs are within 0.25-mile of the Project (PADEP 2019) No WHPAs are crossed by the Project pipeline facilities or occur within the workspace of the aboveground facilities (PADEP 2019); therefore, there will be no effect on WHPAs.

Public Surface Water Intake Information

Transco reviewed the PADEP *eMapPA* GIS-based web-based mapping tool to identify the presence of surface water intakes within 5 miles of the Project area on August 8, 2019. The review indicated that only the Renovo Borough Water Authority (RBWA) associated with the Hensel Replacement exists within 5 miles of the Project. All other Project components did not indicate a surface water intake within 5 miles.

The closest waterbody crossing to the RBWA surface water intake is on an unnamed tributary to Paddy Run. This crossing is located 3.75 river-miles upstream from the surface water intake. The Hensel Replacement crosses the Paddy Run watershed from MP 188.52 to MP 192.36. Transco will update the RBWA of the proposed construction schedule, so they can temporarily turn off the surface water intake during the stream crossings, as recommended by the RBWA engineer. Transco will notify the RBWA at the start of the construction of the Hensel Replacement, and provide further details on the timing of stream crossings in the Paddy Run watershed when available.

Private Water Supply Wells

In addition to identifying public water supply wells, Transco has identified private water supply wells and springs within 150 feet of construction workspaces that serve individual uses or residences. Transco primarily identified these private wells through environmental surveys and by directly contacting landowners. Transco also identified additional private water supply locations within 150 feet of the workspaces through civil survey. Table S3.B.6-1 lists the private water supply wells and springs identified to date within 150 feet of construction workspaces.

**Table S3.B.6-1
 Private Water Supply Wells and Private Springs within 150 Feet of Construction Workspaces**

Nearest Milepost	County	Supply Type	Distance from Workspace (feet)	Direction from Workspace
Hensel Replacement^a				
193.80	Clinton	Private well	0	N/A
Hilltop Loop				
185.01	Clinton	Private well	98	North
185.84	Clinton	Private well	11	South
Benton Loop				
117.31	Lycoming	Private well	114	South
118.03	Lycoming	Private spring (excavated spring near pavilion)	44	South
188.05	Lycoming	Private well	92	South
120.19	Lycoming	Private spring (spring house feeding pond)	80	North
Compressor Station 607				
N/A	Luzerne	Private well	0	N/A
Compressor Station 620				
None				
Compressor Station 610				
None				
MLV Facility at MP 116.95 (Benton Loop)				
None				
MLV Facility at MP 188.15 (Hensel Replacement)				
None				
^a Hensel Replacement includes both the new Leidy Line D installation and the Leidy Line A abandonment. Key: N/A = Not Applicable				

Transco will offer to have a qualified, independent testing service conduct groundwater tests for private wells located within 150 feet of the Project workspace or within 150 feet of blasting activities. Water quantity testing will include yield measurements using the existing pump and discharge line when possible and a portable submersible pump when necessary. Any well modification for the purposes of testing will be completed with the permission of the landowner. Water samples collected for water quality analysis will be tested for specific conductivity, temperature, pH, turbidity, nitrate, volatile organic compounds, and total petroleum hydrocarbon. Sampling methods will adhere to the prevailing EPA and state sampling and analytical procedures in place at the time of construction.

A Transco representative will contact landowners after the sample analysis has been conducted to provide the sample results. In the unlikely event that construction of the Project temporarily affects the water quality or yield of a private or public well/spring, Transco will provide alternative water sources or other compensation to the well owner(s). In the unlikely event that a well/spring is permanently affected due to construction activities, Transco will repair, replace, or provide alternative sources of potable water.

S3.B.7 National Wild or Scenic River or the Commonwealth's Scenic River System

No state wild or scenic rivers are within 100 feet or will be crossed by the Project facilities (PADCNR 2014).

S3.B.8 Designated Federal Wilderness Area

The Project is not located in, or within, 100 feet of a federal wilderness area.

S3.C.1-10 Subfacility Details Tables

The proposed water obstructions and encroachments are included in the Subfacility Details Table provided in Appendix S3-1. This table includes the subfacility identifier, subfacility code, resource identifier, coordinates, municipality, county, and temporary and permanent, indirect, and direct impacts for each subfacility.

S3.D Resource Function Effects

S3.D.1 Subfacility Identifier

The Project impacts are grouped by the subfacilities as defined by the PADEP. The subfacilities applicable to the Project and their definition is provided Table S3.D-1 below.

Table S3.D-1 Subfacility Codes Table		
Subfacility Code	Name	Definition
PIPE	Pipeline or Conduit	Used for installation of the proposed pipelines. Both the Hensel Replacement and Hilltop Loop are 36 inches in diameter. The Benton Loop is 42 inches in diameter. This code will also be used for the impacts resultant from the abandonment portion of the Hensel Replacement and cathodic protection to be installed on portions of the Hilltop Loop and Hensel Replacement which will be within same trench as the pipeline through resources and is included within the pipeline subfacility table
TMPWI	Temporary Wetland Impact	Used for direct and indirect temporary wetland impacts resultant from temporary workspace outside of the permanent ROW. This code does not apply to utility line crossings within the wetland.
WDTIM	Wetland Direct Impact	Used for direct wetland impacts resultant from the placement of permanent fill in a wetland. This code is used for permanent fill associated with access roads and compressor stations and does not apply to utility line crossings within a wetland.
BRDG	Bridge	Used for direct wetland impacts resultant from the placement of permanent fill in a wetland associated with access road.

The effects of the of the subfacilities identified in Table S3.D-1, either individually or in combination, are provided in the following sections.

S3.D.2 Impact Types

The pipeline components of the Project will result in stream and wetland impacts, as referenced in Appendix S3-1. The Big Ridge Trail, an existing access road associated with the Hensel Replacement within Sproul State Forest, has wetland impacts associated with a wetland crossing on the existing access road. Compressor Station 607 will result in wetland impacts only; while there will be no wetland or stream impacts at Compressor Station 605, 610 or 620. Because there are no impacts at Compressor Station 605, 610 or 620 they are not addressed through the remainder of S3.D.2.

Impacts for the pipeline components utilized both the Pipe (PIPE) and Temporary Wetland Impact (TMPWI) subfacility codes. Impacts associated with the Big Ridge Trail utilized the Wetland Direct Impact (WDTIM), TMPWI and Bridge (BRDG) subfacility codes. Impacts associated with the Compressor Station 607 utilized the WDTIM and TMPWI subfacility codes. When discussing each of the resource functions outlined below, the subfacilities are grouped based on these three main items (Pipeline, Big Ridge Trail, and Compressor Station 607).

S3.D.2(i) Hydrologic

The characteristics of water quantity, stream flow, and sources, groundwater basal flows, drainage patterns, flushing characteristics, flow currents, natural recharge or source areas, stormwater and floodwater storage and control are discussed below.

Water Quantity, Stream Flow and Sources

Pipeline

Transco will cross waterbodies with flowing water present at the time of construction using dry-ditch or trenchless construction methods. Trenchless construction methods proposed at one location on Benton Loop would not result in effects to water quantity, stream flow and sources. The dry-ditch construction method shall be completed with a clean water bypass that may include dam and pump, flume pipe and/or cofferdam. Each option passes water around the crossing location, minimizing construction impacts downstream. The pipeline is installed in the dry, with the trench excavation, pipe installation, and backfill completed at this time. Once complete, the stream banks and streambed will be restored to pre-construction contours. To stabilize the banks, stream banks and riparian areas will be revegetated using approved seed mixes and/or erosion control blankets or matting.

Transco will install temporary equipment bridges across waterbodies to reduce the potential for turbidity caused by movement of construction equipment and vehicular traffic and also allow for continuous flow of the waterbodies. Equipment bridges may include instream supports. Equipment bridges will be constructed of clean rock or gravel and culverts, timber mats, or portable prefabricated bridges, depending on stream conditions (e.g., if excessively soft soils are encountered in the streambed, or if high water flows occur, portable bridges will be used at minor stream crossings instead of rock and culverts). Equipment bridges will be maintained until the pipe is installed and final restoration is completed. Equipment bridges will accommodate normal to high stream flow and will be maintained to prevent flow restriction during the period of time the bridge is in use during construction.

To minimize sedimentation during pipeline construction across each waterbody, trench spoil will be placed at least 10 feet away from waterbody banks, unless impractical due to topography. Erosion controls will be placed around spoil piles to prevent sediment from flowing into waterbodies. Within the top of bank (TOB) of streams, a 50-foot-wide construction ROW will

be used, and a 75-foot-wide construction ROW will be used in floodways, except where Transco has provided justification, as outlined in Appendix S3-6 Alternative Analysis.

The pipeline components of the Project will also have temporary and permanent wetland impacts. E&S Control BMP's will be installed during construction which will avoid impacts to water quantity, stream flow and sources associated with the wetland crossings. Temporarily impacted wetlands will be restored upon completion of construction. Wetlands that will involve functional conversion will be mitigated for offsite, as outlined in Module 4.

Big Ridge Trail

Only wetland impacts are proposed on the Big Ridge Trail. The design of this wetland crossing will allow for the wetland to remain connected above and below the access road, as a French mattress installed on the existing access road will allow for water to pass through this feature. Both temporary and permanent wetland impacts are proposed on the Big Ridge Trail. Temporarily impacted resources will be restored. Those wetlands permanently impacted will be mitigated for offsite, as outlined in Module 4.

Compressor Station 607

Only wetland impacts are proposed at Compressor Station 607. Impacts to water quantity and stream flow are not anticipated as result of the Project. Portions of wetlands will be both temporarily and permanently impacted as result of the installation of this facility. Due to the small size of the permanently impacted wetlands at Compressor Station 607, a significant loss of source water is not anticipated to occur within the watershed, while the temporarily impacted wetlands will be restored. Those wetlands permanently impacted will be mitigated for offsite, as outlined in Module 4.

Groundwater Basal Flows and Natural Recharge or Source Areas

No impacts to groundwater basal flows and natural recharge or source areas are anticipated as part of the Project. Impacts to groundwater basal flows and natural recharge or source areas will be avoided and minimized through the utilization of Transco's Plan and Procedures, found in Appendices S3-3 and S4-1. Additionally, potential impacts will also be minimized through the use of the Spill Plan for Oil and Hazardous Materials (Spill Plan) provided in Appendix S3-4 Construction Spill Prevention and Response Procedures for Oil and Hazardous Materials if incidents occur.

Pipeline

With the exception of the valve settings at the pipeline tie-ins at the eastern terminus of the Benton Loop, at each terminus of the Hensel Replacement, no impervious areas are to be added as a result of the pipeline component of the Project. The valve settings will have some impervious area, however, will be mitigated for through stormwater management design, which will promote infiltration at the site. The pipeline construction will restore the site to pre-existing contours, allowing for these functions to restore once construction is complete. In addition, existing valve settings at the eastern terminus of Hilltop Loop, and western terminus of Benton Loop will be removed to promote infiltration within these areas.

Big Ridge Trail

These resource functions will not be impacted as a result of the crossing installation on the Big Ridge Trail. The design and installation of the French mattress will allow for water to pass through the access road, which will promote infiltration and recharge throughout the wetland resource impacted.

Compressor Station 607

Impacts to groundwater basal flows and natural recharge or source areas are not anticipated at Compressor Station 607. Compressor Station 607 will have permanent impervious areas added to facilitate the site design. Permanent fill will be placed within wetlands at Compressor Station 607. Impacts associated with the impervious area increases and wetland functional losses will be mitigated with stormwater management design. Due to the Project mitigating for the impervious areas through the use of stormwater management, impacts to the wetland functions associated with groundwater basal flows and natural recharge or source area are not anticipated.

Drainage Patterns, Flushing Characteristics and Flow Currents

The proposed Project will have minimal impacts during construction to drainage patterns, flushing characteristics and flow currents to wetlands and waterbodies, with no long-term impacts anticipated.

Pipeline

Pipeline components of the Project will take place within or adjacent to a previously disturbed pipeline ROW. Stormwater controls which will be installed during construction have been designed to avoid impacts to natural drainage features. These controls will only have

temporary impacts while installed and will be removed once the site is stabilized with vegetation. Minimal impacts to wetland resources is anticipated, as these functions are generally limited when compared to watercourses.

Transco will restore pipeline facility workspaces to pre-construction contours along Hilltop and Benton Loops. The Hensel Replacement workspaces will be restored to pre-construction contours, with the exception of MP 191.10 to MP 192.55, where Transco will regrade the ROW in this area to restore approximate original contours to remove a two-tone area as requested by DCNR.

Big Ridge Trail

The permanent wetland impact associated with the crossing design on the Big Ridge Trail will allow for the hydrologic connectivity through the installation of a French mattress. This will maintain a surface connection on both sides of the access road and allow for a stable road surface. Temporarily impacted portions of these PFO wetland resources will be restored and replanted as part of the Project.

Compressor Station 607

Only wetland impacts are proposed at this site. Wetlands temporarily impacted will be restored and these functions will have no change as a result of the Project. Those wetlands permanently impacted will have a loss of these functions, which could affect the filtering ability of the vegetation within the wetland for pollutants such as sediments and nutrients; however, due to the small size of the permanent wetland impacts, no significant or long-term impacts associated with drainage patterns, flushing characteristics and flow currents will be impacted.

Stormwater and Floodwater Storage and Control

The proposed Project will have minimal impacts during construction and post-construction to stormwater and floodwater storage and control, with no long-term impacts anticipated.

Pipeline

Restoration of pre-construction contours along the pipeline components will preserve the existing condition of the FEMA floodplains, FEMA Floodways, 50-foot floodways, and wetlands. This restoration shall limit the pipeline facilities from having adverse effects on flood-storage capacity or stormwater control. With the exception of the valve settings at the pipeline tie-ins at the eastern terminus of the Benton Loop, at each terminus of the Hensel Replacement, no

impervious areas are to be added as a result of the pipeline component of the Project. The valve settings will have some impervious area, the impact of which will be mitigated through stormwater management design, which will promote infiltration at the site. In addition, existing valve settings at the eastern terminus of Hilltop Loop, and western terminus of Benton Loop will be removed to promote infiltration within these areas.

Big Ridge Trail

The crossing design on Big Ridge Trail will allow for water passage through the crossing. This crossing is located outside of a regulated floodway or floodplain, and has no associated stormwater control, therefore, no impact to these functions is anticipated at this location.

Compressor Station 607

Impervious surfaces will be added as part of the site construction. The addition of impervious surfaces can alter the natural hydrology in a watershed by increasing the volume of stormwater runoff and reducing groundwater recharge. Transco will submit post-construction stormwater management (PCSM) plans associated with the Chapter 102 permit for construction of each aboveground facility. The plans will incorporate BMPs and other measures to minimize off-site movement (rate and velocity) of stormwater and associated effects on nearby waterbodies. Operations and maintenance plans will be incorporated into the PCSM plans of aboveground facilities in accordance with applicable regulatory requirements. During pipeline operation, Transco will regularly inspect the facilities and on-site stormwater management structures. All aboveground facilities will be located outside of FEMA floodplains, FEMA Floodways and 50-foot floodways.

S3.D.2(ii) Biogeochemical

Hydrodynamics

Pipeline

All stream and wetland crossings will be restored to pre-existing conditions. Natural streambed materials will be replaced in the streambed and the pre-existing stream alignment should be restored to pre-construction alignments. Erosion control blankets shall be placed on restored stream banks to the ordinary high-water mark and outside of wetland areas. If streams have existing rock bank protection (Young Womans Creek) or articulating concrete matting (Little Muncy Creek) these bank protection measures shall be restored.

Forested riparian areas, PFO, and PSS wetlands shall be restored outside of the proposed maintained ROW. Riparian areas and wetlands will be revegetated using approved seed mixes and/or erosion control blankets or matting. Transco will replant existing forested riparian buffers and wetlands impacted outside of the permanent maintained ROW. A 10-foot-wide herbaceous corridor will be maintained over the center of the pipeline within the riparian buffer areas. Trees within 15 feet of the centerline or between existing pipelines will be removed to maintain the integrity of the pipelines. An Onsite Wetland and Riparian Reforestation Plan is included in Module 4, Appendix S4-2.

Big Ridge Trail

The location of the Big Ridge Trail is on an existing access road where a wetland has formed due to improper drainage. The permanent installation of the French mattress will have a positive effect on the hydrodynamics of the site, as this resource function is limited in its current state due to it being an existing access road.

Compressor Station 607

Only wetlands are proposed for impacts are proposed at this site. Wetlands temporarily impacted will be restored and these functions will have no change as a result of the Project. Those wetlands permanently impacted will have a loss of this function, which would affect the wetlands ability to sequestered nutrients or provide similar hydrodynamic functions, due to the loss of the wetland. Due to the limited size of these wetlands, impacts to hydrodynamics will be negligible.

Food Chain Production

Pipeline

All of the wetland and waterbody crossings are adjacent to existing pipelines or utilities as the Project is primarily co-located. Cover types for these resources are primarily herbaceous, with some instances of forested cover types. Onsite replanting of existing forested riparian buffers within 150' of streams, and impacted PSS and PFO wetlands will be implemented for the project as outlined in Appendix S4-2. Cover type changes are likely to have minimal impact on aquatic habitat and the associated food chain production, as cover type changes expected to result from the Project are minimal.

All waterbodies crossed by the Project are minor and intermediate streams with the exception of Young Womans Creek and Drury Run. Crossing windows for instream construction will be minimized to the extent practical as approved in Chapter 102 and 105 permits. Crossing

construction shall be completed as dry-open cut, with a clean water bypass that may include dam and pump, flume pipe and/or cofferdam. Each option passes water around the crossing location, minimizing construction impacts downstream. One crossing on Benton Loop is proposed as a conventional bore, however its construction method shall have no impact on food chain production. Additionally, the Pennsylvania Fish and Boat Commission (PFBC) instream construction restriction periods will be followed, unless waivers are obtained, further minimizing stream impacts. Due to the short instream construction duration and coordinated crossing window timing with the PFBC, impacts have been minimized at each crossing.

Big Ridge Trail

For those wetlands being permanently filled associated with the Big Ridge Trail, food chain production will be permanently impacted as result of the wetland loss, however, the current food chain production capacity is minimal due to the wetland being on an existing access road. Temporarily impacted wetlands associated with the Big Ridge Trail will be restored with no long-term impacts to food chain production anticipated.

Compressor Station 607

For those wetlands being permanently filled associated with the Compressor Station 607, food chain production will be permanently impacted as result of the wetland loss. Temporarily impacted wetlands associated with the Compressor Station 607 will be restored with no long-term impacts to food chain production anticipated. Those wetlands permanently impacted will be mitigated for offsite, as outlined in Module 4.

Water Quality

The PADEP Erosion and Sediment Pollution Control Program Manual, dated March 2012 (Manual), was used as a primary reference for design and selection of E&S control BMPs to be implemented during the Project. These will be consistent with the requirements of the PA Code Title 25 Chapter 105 requirements, as it relates to wetland and waterbody impacts.

Sediment controls will be designed to stay within the Limits of Disturbance, with controls and plans in place to minimize potential impacts. Post construction stormwater measures will be designed to manage stormwater runoff. With the implementation of the E&S Plan and the PCSM, impacts to water quality are not anticipated.

The following techniques will be employed during construction to minimize the potential for soil erosion and sediment migration:

All Subfacility Types

- E&S BMP measures will be installed prior to commencement of earthwork and will not be removed until after the up-gradient areas are stabilized.
- Rock construction entrances will be installed along points of access to the pipeline alignment to mitigate the potential for construction vehicles to transport sediment onto public roadways.
- Compost filter sock will be installed along the down-gradient perimeter of the work areas.
- Removal of the erosion and sediment control BMP measures will occur only after the disturbed areas have been stabilized by uniform perennial vegetative coverage (density) of seventy percent (70%) or greater, or by other permanent non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.
- Diligent maintenance of the erosion and sediment control BMP measures will be conducted throughout the duration of the project.

Pipeline

- At areas of concentrated flow in natural drainage ways, diversions will be installed to intercept and convey upslope stormwater runoff around the work corridor without contacting disturbed surfaces.
- Waterbars and outlet structures will be installed to mitigate the potential for stormwater to erode soils on steep slopes by diverting water away from the pipeline alignment. Waterbars will discharge to a well vegetated area to limit the potential for sediment-laden water to flow downgradient from the terrace.
- Trench plugs will be installed intermittently within the pipeline trench and at wetland and stream crossings to control and allow for managing the flow of sediment-laden stormwater within the trench. Stormwater pooling within the excavation behind a trench plug will be removed and discharged through a pumped water filter bag over stable, undisturbed earth.

- Timber mats will be installed within wetland crossings to minimize the impacts and compaction of the wetland crossings.
- Timber bridges will be installed to cross streams to prevent onsite site sediments from entering the waterbodies.

Big Ridge Trail

- French mattress installation will allow for clean water to flow through the site during and post construction and allow for the hydrologic connection of adjacent wetlands.

Compressor Station 607

- Post-construction stormwater BMP's including detention basins and other permanent BMP's will be designed to meet DEP's Post-Construction Stormwater Management regulations which accounts for managing rate, volume and water quality.

Post-construction stormwater management measures will also be implemented for water quality in areas where it is required. The PCSM is designed to manage stormwater runoff associated with new impervious areas for the proposed aboveground facilities. The design will promote retention and infiltration into the ground, controlling sediments by keeping them onsite. With the implementation of the E&S Plan and the stormwater management measures, water quality impacts are not anticipated.

Transco reviewed the 303(d) lists for streams crossed by the Project that are included in EPA Categories 4 and 5. Category 4 lists waterbodies where TMDLs have been established or cannot be established due to the nature of the contamination. Category 5 lists waterbodies where TMDLs need to be developed by the state. (PADEP 2019). No surface waters crossed by the Project are classified as impaired waterbodies. However, one Project component, Contractor Yard CY-003, associated with the Hensel Replacement, is in proximity to a reach of West Branch Susquehanna River, which is classified as impaired due to the presence of metals associated with acid mine drainage (PADEP 2019). West Branch Susquehanna River has an approved TMDL for metals and pH associated with acid mine drainage (PADEP 2001). Transco has sited Contractor Yard CY-003 to avoid impact to this watercourse. In addition Antidegradation Best Available Combination of Technologies (ABACT) controls will be installed at this location.

S3.D.2(iii) Habitat

General Habitat

General construction related impacts on wildlife species, as it relates to wetlands, waterbodies, and the surrounding areas, will result from habitat disturbance and human activities. Indirect impacts on wildlife will include those associated with increased human activity. Construction of the Project is likely to result in the temporary displacement of, or stress on, animals in areas adjacent to construction and cause movement of some wildlife away from the Project area. Stress on wildlife could affect general health, reproduction, and viability of young animals, depending on the sensitivity of a particular species, season of the year, and other factors. Impacts to forested areas may have an impact on nesting bird species, rearing of young, and availability of escape cover. While the Project does have impacts to typical wildlife habitat of the region, it is unlikely the Project has an influence on biodiversity, as the areas to be impacted are typical settings for the region, and unique areas have been avoided.

Pipeline

Other temporary impacts on wildlife species as a result of the general habitat impact could include those from pipeline trenching activities and associated spoil piles, which could result in a short-term barrier to movement to some species.

Temporary habitat alteration at the waterbody crossing locations may degrade fish spawning and nursery areas due to the excavation in the channel, resulting in temporary impacts. Because crossings will be completed in a short timeframe, these effects are expected to be temporary in nature and aquatic communities will subsequently recolonize the affected area once construction activity is complete. Permanent impacts to spawning are not anticipated as a result of this Project. Impacts to spawning should be avoided by timing construction to occur outside of the PFBC restricted period.

All of the stream crossings associated with the Project cross either stocked or wild trout streams. At some of these crossings, wetlands are located adjacent to the wild trout streams. As a result, these wetlands are considered exceptional value (EV) under PA Code Chapter 105.17. Impacts to these wetlands have been minimized through workspace reductions. Work in these areas will follow the Transco Project Specific Wetland and Waterbody Construction and Mitigation Procedures found in Appendix S4-1

During clearing and grading activities, more mobile wildlife species (e.g., larger mammals, birds, and reptiles) will be able to avoid the construction area, and many are expected to leave the area during construction and migrate to surrounding areas. Construction activity will be temporary and will occur in a given area for only a few weeks, in general. Habitat recovery will occur, aided by the use of the impact minimization and restoration measures.

Transco does not anticipate the Project to reduce or degrade habitat for terrestrial, aquatic, or avian species significantly due to the pipeline co-location. Habitat fragmentation has been minimized through the use of pipeline co-location. While temporary impacts on food, cover, and water sources may occur, none of the species located within the Project area are specialized in such a way that construction of the Project will inhibit the overall fitness or reproductive output of the populations as a whole. Minimal changes to existing habitat types will occur due to this Project siting. Wildlife populations that utilize the Project area are not expected to be permanently adversely affected by the proposed Project.

Along the Hensel Replacement, the Tamarack Swamp Natural Area is located adjacent to the Project. Impacts to this natural area have been avoided. Similarly, the Foley Tract, a “Special Use” area on Sproul State Forest will be crossed by the Project, however, no wetland or waterbody impacts are proposed.

Big Ridge Trail

The general habitat associated with the wetland crossing at the Big Ridge Trail consists of a wetland located on an access road in an isolated area within the Sproul State Forest. While temporary impacts, similar to those described above with the Pipeline subfacility, are likely to occur, no long-term impacts are anticipated as a result of this crossing installation due to it currently being an existing road.

Compressor Station 607

This site is located in an isolated agricultural property surrounded by forest land. The habitat that will be impacted is generally agricultural fields, with the exception of some forest land adjacent to the existing pipeline. Due to this being a permanent above ground facility, most wildlife habitat will be removed from the operational footprint of the compressor station. It is likely that those species that tolerate habitat adjacent to the existing human activities at the site will continue to occupy the site.

Environmental Study Areas

The Project will not result in impacts to environmental study areas at any of the subfacility areas.

Threatened and Endangered Species

The discussion below outlines the potential impacts and proposed mitigation for all subfacilities (Pipeline, Big Ridge Trail, and Compressor Station 607), as survey requests from the regulatory agencies with jurisdiction of each of the species listed below reviewed the Project in its entirety, which includes Project components without wetland or waterbody impacts (i.e. Compressor Stations 605, 610 and 620). The review below is outlined by the agency of jurisdiction, rather than the subfacility for this section.

United States Fish and Wildlife Service

Indiana Bat

The United States Fish and Wildlife Service (USFWS) indicated that the Project is within the range of the Indiana bat, which is federally listed as endangered. The USFWS indicated that as long as tree clearing occurred between November 15 and March 31 for the Project, then surveys were not required for the Indiana bat.

Transco plans to complete all tree clearing outside of the active Indiana bat season to avoid impacts on any Indiana bats that may be present in the Limits of Disturbance (LOD). Specifically, tree clearing will be completed between November 15 and March 31. As such, Transco does not expect impacts to Indiana bats as a result of the Project.

Northern Long-eared Bat

The proposed Hensel Replacement and Hilltop Loop in Clinton County are in proximity to several northern long-eared bat captures. “On February 16, 2016, a special conservation rule (i.e., 4(d) rule) was adopted that tailors protections for the northern long-eared bat under the Endangered Species Act (81 FR 1900). Incidental take that occurs as a result of tree removal that is not within 0.25 mile of a known northern long-eared bat hibernaculum or within 150 feet from a known, occupied maternity roost tree is not prohibited in accordance with the 4(d) rule” (Jahrsdoerfer 2019b).

Transco previously completed surveys for northern long-eared bats in 2014 through 2016 for its Atlantic Sunrise Project, which is located adjacent to the proposed Project. Based on review

of that survey data within 0.25 mile of the Project, two known maternity roost trees are located near the Hensel Replacement and one known maternity roost tree is located near the Benton Loop (Lycoming County). No known maternity roost trees are located within 0.25 mile of the Hilltop Loop, Compressor Station 607, or Compressor Station 620.

Transco plans to complete all tree clearing outside of the active northern long-eared bat season to avoid impacts on any northern long-eared bats that may be present in the LOD. Specifically, tree clearing will be completed between November 15 and March 31. As such, Transco does not expect impacts to northern long-eared bats as a result of the Project.

Northeastern Bulrush

All Project components are within the range of the northeastern bulrush (*Scirpus ancistrochaetus*), which is federally listed as endangered (Jahrsdoerfer 2019b). The preferred habitat of the northeastern bulrush is along the fringes of seasonal ponds, shallow wet depressions, and wetlands. It fruits in July and persists through January (Podniesinski 2018).

Transco conducted surveys in June and July of 2019 of all potentially suitable wetland habitat within and surrounding the proposed Project area. (PRIVILEGED)

Pennsylvania Department of Conservation and Natural Resources

The DCNR identified several target plant species within the counties crossed by the pipeline facilities (see Table S3.D.2(iii)-1). Target species include those that are state-listed or proposed for state listing as rare, threatened, or endangered. Although the DCNR did not indicate that any rare, threatened, or endangered plant species were documented on-site, plant surveys were requested to be conducted for target species in Project areas that met the conditions of each species' habitat (Podniesinski 2018). Survey windows vary for each species based primarily on flowering times, or other times of year when the plant is most readily apparent. Table S2.C.2(ii)-1 describes suitable habitat and flowering windows for each of the seven state-listed plant species. The federally listed northeastern bulrush is described above under the USFWS section.

Table S3.D.2(iii)-1 Habitat and Flowering Windows for State-Listed Plant Species Potentially Occurring Within the Project Area			
Common Name	Scientific Name	Habitat	Flowering Window
White Twisted-stalk	<i>Streptopus amplexifolius</i>	Seepy cliffs and rock outcrops, in cool shaded conditions, often near waterfalls.	Flowers May-June
Swamp Currant	<i>Ribes lacustre</i>	Grows in damp soil on rocky slopes and talus areas, moist to seepy rock outcrops and cliffs, and in cool woods and swamps.	Flowers May - June
Creeping Snowberry	<i>Gaultheria hispidula</i>	Grows on decaying logs, stumps, and moss hummocks in bogs, peaty wetlands, and swamps.	Flowers June, fruits September
Showy Mountain-ash	<i>Sorbus decora</i>	Moist or dry woods, montane woods, rocky slopes, lake and stream shores.	Flowers May, fruits September – October
Bebb's Sedge	<i>Carex bebbii</i>	Wet places with calcareous or neutral soils, gravelly lakeshores, stream banks, meadows, forest seeps.	Fruits June – July
Soft-leaved Sedge	<i>Carex disperma</i>	Swampy woods, bogs, and rhododendron swamps.	Fruits May-August
Purple Bedstraw	<i>Galium latifolium</i>	Woods, rocky slopes and roadsides.	Flowers June-July
Sources: Podniesinski 2018; PNHP n.d.(b); Flora of North America n.d.(a), n.d.(b).			

Transco completed all surveys for state-listed plant species identified within and surrounding the Project area. No state-listed species were identified within the LOD. The closest occurrence of a state-listed species was Purple Bedstraw along the Hensel Replacement. The population of Purple Bedstraw was located upslope of the existing and proposed ROW ranging from approximately 10 to 75 feet outside the LOD. Due to the occurrence being upslope of the LOD and the proposed E&S Control BMP's, no impacts are anticipated to the species. A survey report is included in Appendix S2-3.

Timber Rattlesnake

According to correspondence with the PFBC, Hensel Replacement, Hilltop Loop, and the Compressor Station 620 site are within the range of the timber rattlesnake (*Crotalus horridus*) (Allison 2018).

The PFBC requested Transco complete a habitat assessment of the Hensel Replacement and Hilltop Loop in Clinton County, and Compressor Station 620 in Schuylkill County. Transco

completed Phase I habitat assessment surveys and Phases II presence/absence surveys between March 20 and May 10, 2019. Potential habitat was identified in ten areas along the Hensel Replacement, and eight areas along the Hilltop Loop. No timber rattlesnake habitat was found at the Compressor Station 620 site. The location of the identified habitat are provided in the Timber Rattlesnake Phase I Habitat Assessment and Phase II Presence/Absence Denning Survey Report provided in Appendix 2-3. During Phase II presence/absence surveys, timber rattlesnakes were observed in six of the ten potential habitat areas along the Hensel Replacement and three of the eight potential habitat areas along the Hilltop Loop.

Three of the active habitat areas along the Hensel Replacement and one of the active habitat areas along the Hilltop Loop are within the proposed Project workspaces. The active habitat areas within Hensel Replacement workspaces are gestation habitat areas only; no confirmed denning habitat is present within the Project area. The single active habitat area within Hilltop Loop consists of four discrete denning locations, with one location also containing gestation habitat.

Transco has consulted with PFBC to develop mitigation measures for impacts to timber rattlesnake habitat. Transco proposes to restrict blasting to mitigate denning impacts: no blasting will occur within 50 feet of confirmed denning habitat between the start of denning in the fall (approximately October 1st) and spring emergence (approximately May 15th). Transco proposes to mitigate impacts by restoring gestation habitat in accordance with PFBC guidelines as described within the Survey Report provided in Appendix S2-3. The PFBC provided a response to the survey report on August 21, 2019; which is included in Module 2, Appendix S2-3.

S3.D.2(iv) Recreation

Hunting

Pipeline

The majority of the Hensel Replacement and a small portion of the Hilltop Loop is located on Sproul State Forest. Private lands along the Project may allow for similar recreational opportunities as Sproul State Forest; however, such opportunities are limited to only those with permission to access these properties. Hunting opportunities may be temporarily impacted as a result of the Project. Considering the timeline and extent of the Project, it is anticipated that construction may overlap with hunting seasons, and therefore may limit hunting opportunities in

and within the vicinity of the ROW. Transco will coordinate with affected landowners to minimize potential conflicts with hunting to the extent practicable.

Big Ridge Trail

Due to the small size of this resource, hunting opportunities are not anticipated to be impacted as a result of the Project.

Compressor Station 607

This site is located on private lands managed for agricultural use. Recreational hunting opportunities are limited to only those with permission to access these properties. Recreational hunting is not anticipated to be impacted.

Fishing

Pipeline

The Project is located within the Little Muncy Creek, Buck Run, West Branch of Little Muncy Creek, Young Womans Creek, Skunk Hollow, Paddy Run, Hensel Fork and Drury Run watersheds, which are considered wild trout streams by the PFBC. PFBC instream construction restrictions for these streams would be from October 1 – December 31.

Young Womans Creek is also listed as trout stocked streams where the Hilltop Loop is proposed. PFBC instream construction restrictions for Young Womans Creek would also include March 1 – June 15.

The restrictions outlined above have been adopted to not only minimize potential impacts to spawning trout at the instream crossings, but also to the stocked trout fisheries, as the spring stocking windows are generally at a peak use period for trout fishing. Due to the adoption of the trout restrictions, and use of approved Project BMPs, it is expected that minimal impacts will occur as a result of the Project.

The streams listed above are located on both public and private grounds. Access and use to these properties to recreationally fish may be limited during construction; however, fishing opportunities exist to those that have permission to access the property upstream and downstream of the construction activities.

Big Ridge Trail

No watercourse impacts are proposed at the Big Ridge Trail; therefore, no recreational fishing opportunities will be impacted.

Compressor Station 607

No watercourse impacts are proposed at Compressor Station 607; therefore, no recreational fishing opportunities will be impacted.

Hiking and Plant/Wildlife Observation

Pipeline

The Project will cross the Sproul State Forest, where hiking and plant/wildlife observation opportunities are available to the public. Transco will coordinate with DCNR concerning activities occurring in Sproul State Forest. Typical notification measures include posting signs during construction and posting a notification regarding the timing and location of planned construction activities at centrally located or designated facilities within each recreation area. Impacts on users of these areas may include temporary increases in noise and dust during construction, as well as temporary delays for traffic in the area when equipment is being moved. Permanent impacts on hiking or observation of plants/wildlife is not expected as a result of the proposed Project.

Big Ridge Trail

Temporary use of the trail during construction could be impacted by hikers, however Transco will coordinate with DCNR on activities within Sproul State Forest. No plant/wildlife observation are anticipated to be impacted at this subfacility.

Compressor Station 607

Hiking and Plant/Wildlife Observation opportunities are not expected to be impacted at this site, as this is private agricultural property.

Swimming/Boating

Pipeline

One navigable water will be impacted by dry, open-cut crossings (Dam-and-Pump or Cofferdam) in Clinton County: Young Womans Creek (S1-T4-HL). Young Womans Creek is approximately 100 feet wide at the proposed crossing location. To enable navigation safely around the work area, signage will be placed as shown on the attached Aid to Navigation Plan (Appendix S3-5), and will include warning, portage, and exit signs (as needed). Signs will be placed at least two weeks prior to commencement of the crossing and will remain in place for the duration of the construction. Upon completion of all work, the signs will be removed. Aids to

Navigation Plan includes an approval letter from the PFBC for the plans and appropriate procedures to be conducted prior to and during construction.

Big Ridge Trail

No watercourses will be impacted at this site.

Compressor Station 607

No watercourses will be impacted at this site.

S3.D.3 Effect on Overall Ecology

The majority of impacts associated with construction of the pipeline component of the Project are temporary in nature. Streams impacted by the project will be crossed in dry conditions with equipment bridges installed to not create sediment pollution in the watercourse. Although minor stream and wetland impacts (TMPWI and PIPE) will occur during construction of the pipelines, they will be crossed and restored in accordance with PADEP Chapter 102 and 105 guidelines. Ecological impacts associated with permanent direct and temporary wetland impacts (WDTIM, TMPWI and BRDG) along Big Ridge Trail are anticipated to be minor because they are located on and adjacent to an existing access road. Permanent direct impacts (WDTIM) associated with Compressor Station 607 occur at two isolated PEM wetlands and along the edge of a larger wetland. Temporary wetland impacts (TMPWI) are also anticipated at Compressor Station 607 which will be restored to original conditions and contours upon completion of construction. As a result, there is very minimal effect to the overall regime and ecology of the watercourse or wetland associated with the Project. Water quality, streamflow, fish and wildlife, aquatic habitat, and instream and downstream uses are minimally impacted by the subfacilities mentioned above, which will have very minimal effect on these environmental factors.

S3.D.4 Upstream and Downstream Property or Riparian Rights

The Project is not expected to result in impacts to upstream and downstream properties. The implementation of the BMPs associated with applicable state and federal permits to be approved for the project prior to construction will minimize impacts to properties upstream and downstream of the Project. The general nature of construction of pipeline projects is that it is temporary in nature.

S3.E Antidegradation Analysis

Transco is meeting the state antidegradation requirements contained in Chapters 93, 95, 102 and 105 through various measures provided in the Project design, such as proposed construction measures and requests for permit approvals for activities associated with the Project. The Project is almost entirely located within EV and HQ watersheds, as defined by Chapter 93. Transco will install ABACT BMPs throughout the Project, protecting the existing uses of the designated high-quality streams, “Other” and “EV” wetlands impacted by the Project, and within a Section 303(d) listed impaired watershed. BMPs outlined in the E&S control and site restoration plans will be installed, monitored and maintained until the Project meets the vegetative cover requirements required by the approved permits for earth disturbance and water obstruction and encroachment. During the Project’s construction, any issues identified with the BMPs shall be repaired as described in the permits and plans.

No changes to the aquatic community or water chemistry within the streams or wetlands crossed or impacted by the Project are anticipated to occur. All streams crossed by the Project shall utilize clean water bypass BMPs during construction to allow continuous flow of all streams crossed, and these streams will be restored to pre-existing conditions once construction is complete. The wetlands impacts associated with temporary disturbance will be restored and stabilized upon final restoration with PSS and PFO impacted wetlands outside the proposed maintained corridor being replanted. The wetland, stream, and floodway impacts are considered isolated to their disturbance area and do not extend beyond the Projects LOD.

As part of the Project design, impacts to resources were avoided and minimized where possible and include the following measures: siting new compressor stations with minimal water resource impacts, pipeline co-location within/adjacent to an existing right-of-way, restoration of disturbed areas to pre-existing conditions with the exception of above ground facilities and from MP 191.10 to MP 192.55 where Transco will regrade the ROW to restore approximate original contours to remove an unnatural two-tone area, and limiting the extent and duration of earth disturbance. Transco has provided a nominal workspace of 75 feet in wetlands and floodways and 50 feet within the stream top-of-bank for the pipeline installation in most cases. Where these nominal workspaces were exceeded, site specific justification has been provided in Appendix S3-6 Alternatives Analysis. During construction, excavated trenches will be kept to the minimum width and depth necessary to safely complete construction activities. Project access has been

designed to utilize existing access roads as much as possible, thereby minimizing the need for new road construction.

Consultation is ongoing with the state and federal agencies regulating threatened and endangered (T&E) species. The agencies include the Pennsylvania Game Commission, PFBC, DCNR and the USFWS. Transco completed surveys, as required by the appropriate agency, for T&E species. Clearance letters from each agency will be required prior to issuance of Chapter 102 and 105 approvals.

During construction, the Transco's Construction Spill Prevention and Response Procedures for Oil and Hazardous Materials (Spill Plan) outlined in Appendix S3-4 will be implemented to minimize the potential for spills and the effects of any spills that may occur. Details of how the site materials are managed, including the storage of equipment, hazardous materials, fuels, and lubricating oils and other construction items are identified in the Spill Plan. The plan defines the procedures for spill notification, emergency response, spill response, personal protective equipment, clean-up procedures and spill presentation practices. As part of the Project, hydrostatic discharge testing will be completed. Discharges associated with the testing will conform to permit conditions specific to the discharge, meeting the state antidegradation requirements.

The cumulative effect of the Project will not result in the impairment of the Commonwealth's EV and other wetland resources. A review of the Section 303(d) list of the Clean Water Act indicated that no surface waters crossed by the Project are classified as impaired waterbodies. The wetlands impacts will involve temporary disturbance while the pipeline is being installed, as the wetlands will be restored and stabilized upon final restoration. The wetland impacts are isolated to their disturbance area and do not extend beyond the Projects LOD. The Project has been co-located with Transco's existing gas pipeline system, to avoid fragmentation and to minimize resource impacts. Construction BMPs, including erosion control devices and timber matting, to mitigate for soil compaction within the wetlands, will be utilized to minimize impacts throughout the Project. Transco will follow their Project specific Upland Erosion Control, Revegetation, and Maintenance Plan (Appendix S3-3) and their Project-Specific Wetland and Waterbody Construction and Mitigation procedures (Appendix S4-1), as well as other permit conditions outlined by the PADEP. The Leidy South Project is a single and complete Project, with no foreseeable additional impacts to wetland resources of the

Commonwealth of Pennsylvania, other than those proposed. The Project will result in no loss of wetland resources and will not result a major impairment of the Commonwealths “EV” or “other” wetland resources.

S3.F. Alternatives Analysis

The Alternatives Analysis is provided in Appendix S3-6.

S3.G. Potential Secondary Impact Evaluation

S3.G.1 Environmental Impacts on Adjacent Lands

The wetlands proposed for permanent fill along the existing access road (Big Ridge Trail) associated with the Hensel Replacement will consist of drainage improvements to properly convey sheet flow across the road. Filling these wetlands will not cause any direct or any indirect impacts on adjacent landowners given the isolated nature of the resource.

At Compressor Station 607, two of the wetlands proposed for permanent fill are isolated resources. The other permanent fill is located along the outer edge of a wetland resource. Given the isolated nature of two of the wetland resources, and the small size of the proposed impact to the other wetland, there should be no direct or indirect impact on adjacent land or resources.

The remaining stream and wetland resources crossed by the Project will be restored to original contours following construction. Impacts addressed as permanent indirect are not anticipated to cause any direct or indirect impact on adjacent land or resources because the construction activities are temporary in nature.

S3.G.2 Impacts on all other Dams, Water Obstructions, or Encroachments

There are no other dams, water obstructions, or encroachments necessary to fulfill this project purpose.

S3.H Cumulative Impacts to Wetland Resources

The cumulative impacts associated with the Project may result from the impacts of construction and operation of the Project components combined with the impacts of other proposed major developments occurring within the vicinity of the Project. To review potential cumulative impacts, Transco considered recently completed, current, and reasonably foreseeable future major projects and other human-related activities (collectively “activities”) near the Project facilities. The basic assumption of the cumulative impacts analysis was that if activities were

deemed to have minor or insignificant impacts, the cumulative impacts resulting from the activities and Project would also be considered minor or insignificant.

Focus was placed on permanent wetland and watercourse impacts, as temporary impacts are not considered an adverse cumulative impact based on PADEP's Comprehensive Environmental Assessment Technical Guidance Document (TGD) entitled *Comprehensive Environmental Assessment of Proposed Project Impacts for Chapter 105 Water Obstruction and Encroachment Permit Applications Technical Guidance Number 310-2137-006*.

Permanent direct impacts would include 0.22 acres. These impacts would be associated with improvements to an existing access road (Hensel Replacement) that will result in permanent fill within 0.02 acres of Palustrine Emergent (PEM) wetlands and permanent fill within 0.20 acres of PEM wetlands (Compressor Station 607).

Permanent indirect impacts would include 3.22 acres to wetlands and 3.22 acres to watercourses. These permanent indirect impacts would be associated with the existing and proposed maintained ROW and include functional conversion of Palustrine Forested (PFO) and Palustrine Scrub-Shrub (PSS) wetlands; which will result in 0.11 acres of conversion. The PFO and PSS wetland cover type conversion will result in a change to the wetland Cowardin class but will result in no more than minimal individual and cumulative adverse environmental effects. Functional conversion impacts will be offset through the enhancement at an offsite compensatory mitigation site, described in the Appendix S4-3.

Transco has identified past, present, and reasonably foreseeable projects and other human-related activities occurring in the vicinity of the Project (within 10 miles) that may result in cumulative effects when combined with the effects of the Project. Transco consulted with the affected municipal and county planning agencies to identify projects in the vicinity of the Project. Transco also identified other activities, such as transportation and energy development projects located within the counties affected by the Project. Table S3.H-1 provides a list of recent, ongoing, and reasonably foreseeable projects in the vicinity of the Project.

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Table S3.H-1 Summary of Impacts for Projects Evaluated for Potential Cumulative Effects				
Project (Company Name as appropriate)	Construction Impacts (acres)	Waterbody Impacts (number of crossings)	Wetland Impacts (acres)	Land Use Impacts
FERC-Jurisdictional Natural Gas Pipeline Projects				
Transco Atlantic Sunrise Project (CP15-138)	2,822.2	388	PEM – 30.8 acres PSS – 4.3 acres PFO – 11.3 acres	Agricultural land – 1,789.2 acres Open land – 430.6 acres Upland forest – 1,043.2 acres Industrial/commercial land – 255.0 acres Transportation land – 88.5 acres Residential land – 70.9 acres
Transco Regional Energy Expansion	Information not available	Information not available	Information not available	Information not available
National Fuel FM100 Project (CP-19-491)	529.3	120	PEM – 12.0 acres PSS – 1.9 acres POW – 92.0 acres PUB – 16.5 acres	Agricultural land – 57.0 acres Open land – 197.0 acres Upland forest – 145.4 acres Industrial/commercial land – 147.5 acres Residential land – 0.9 acres
Transco Leidy Southeast Expansion (CP13-551-000)	796.6	87	PEM – 15.1 acres PSS – 2.9 acres PFO – 8.5 acres	Agricultural land – 26.9 acres Open land – 226.5 acres Upland forest – 105.2 acres Industrial/commercial land – 7.9 acres Residential land - 18.8 acres
Other Natural Gas Facilities				
Wells/Shale Development				
Various	Information not available	Information not available	Information not available	Information not available
Other Actions				
Other Energy Facilities				
Renovo Energy Center	68	Information not available	Information not available	Information not available
Potential wind development	Information not available	Information not available	Information not available	Information not available
Transportation Projects				
Various bridge replacement and improvement projects	Information not available	Information not available	Information not available	Information not available
Other Development				

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Table S3.H-1 Summary of Impacts for Projects Evaluated for Potential Cumulative Effects				
Project (Company Name as appropriate)	Construction Impacts (acres)	Waterbody Impacts (number of crossings)	Wetland Impacts (acres)	Land Use Impacts
Nicholas Meat Anaerobic Digester Wastewater Treatment System	40.7	Information not available	Information not available	Agricultural land – 40.7 acres
Sources: FERC 2019a, 2019b; PADEP 2019; PennDOT 2019				
Key: PEM = Palustrine emergent PFO = Palustrine forested PSS = Palustrine scrub-shrub POW = Palustrine open water				

As described in Table S3.H-1, many of the projects considered in the cumulative impact assessment involve wetland and watercourse crossings. Transco expects that these projects will be or were constructed in accordance with the FERC Order (for FERC jurisdictional pipelines) and applicable environmental permit conditions and construction plans to avoid, minimize, and mitigate effects on wetlands and watercourses. Other projects not regulated by the FERC would also need to comply with federal and state regulations and permit conditions relative to wetlands and waterbody effects, including implementation of BMPs to avoid and minimize potential effects, as well as development of suitable mitigation plans for unavoidable effects or losses of water resources. Based on the above analysis, Transco believes there will be no significant measurable cumulative effects of the Project on wetlands or watercourses.

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