

**ATLANTIC COAST PIPELINE, LLC
ATLANTIC COAST PIPELINE**

Construction, Operations, and Maintenance Plans

ATTACHMENT D

Winter Construction Plan

Previously filed with FERC on July 18, 2016 (Accession No. 20160718-5164)



ATLANTIC COAST PIPELINE, LLC
ATLANTIC COAST PIPELINE
Docket Nos. **CP15-554-000**
 CP15-554-001

and



DOMINION TRANSMISSION, INC.
SUPPLY HEADER PROJECT
Docket No. **CP15-555-000**

Winter Construction Plan

Updated, Rev. 1

Prepared by



July 18, 2016

TABLE OF CONTENTS

1.0 INTRODUCTION.....1
2.0 PURPOSE.....1
3.0 TRAINING2
4.0 SNOW REMOVAL2
5.0 GENERAL CONSTRUCTION AND RESTORATION MEASURES.....3
6.0 WETLANDS.....5
7.0 WATERBODIES6
8.0 EROSION CONTROLS, MULCHING, AND SEEDING6
9.0 TEMPORARY EQUIPMENT BRIDGES.....8
10.0 TRENCH DEWATERING8
11.0 HYDROSTATIC TESTING.....8
12.0 WINTER AND SPRING INSPECTIONS8
13.0 SPRING THAW CONDITIONS.....9
14.0 SPRING RIGHT-OF-WAY ASSESSMENT.....10
15.0 FINAL CLEAN-UP AND RESTORATION10
16.0 MONITORING AND REPORTING10
17.0 REFERENCES.....11

LIST OF ACRONYMS AND ABBREVIATIONS

ACP	Atlantic Coast Pipeline
Atlantic	Atlantic Coast Pipeline, LLC
ATWS	additional temporary workspace
DTI	Dominion Transmission, Inc.
EI	Environmental Inspector
FERC	Federal Energy Regulatory Commission
NOAA	National Oceanic and Atmospheric Administration
Plan	Upland Erosion Control, Revegetation, and Maintenance Plan
Procedures	Wetland and Waterbody Construction and Mitigation Procedures
Projects	Atlantic Coast Pipeline and Supply Header Projects
SHP	Supply Header Project

1.0 INTRODUCTION

Atlantic Coast Pipeline, LLC (Atlantic) – a company formed by four major energy companies – Dominion Resources, Inc.; Duke Energy Corporation; Piedmont Natural Gas Co., Inc.; and AGL Resources, Inc. – proposes to construct and operate approximately 600 miles of natural gas transmission pipelines and associated aboveground facilities in West Virginia, Virginia, and North Carolina. This Project, referred to as the Atlantic Coast Pipeline (ACP), will deliver up to 1.5 million dekatherms per day of natural gas from supply areas in the Appalachian region to demand areas in Virginia and North Carolina. Atlantic has contracted with Dominion Transmission, Inc. (DTI), a subsidiary of Dominion Resources, Inc., to construct and operate the ACP on behalf of Atlantic.

In conjunction with the ACP, DTI proposes to construct and operate approximately 37.5 miles of pipeline loop and modify existing compression facilities in Pennsylvania and West Virginia. This Project, referred to as the Supply Header Project (SHP), will enable DTI to provide firm transportation service to various customers, including Atlantic.

2.0 PURPOSE

Construction of the ACP and SHP (collectively, the Projects) is scheduled to begin in the Spring of 2017, subject to the receipt of necessary permits and authorizations, and will continue through the fourth quarter of 2018. All facilities are anticipated to be placed in service in the fourth quarter of 2018. With this schedule, construction activities in the Winter season will be required.

Within the ACP Project area and SHP Project area, the timing and extent of Winter conditions, such as snowfall and frozen soils, vary a great deal. The northern portions of the Projects, including Pennsylvania and the mountainous regions of West Virginia and Virginia, can have temperatures below freezing from early October through late April, with frozen soil conditions potentially occurring within these months (National Oceanic and Atmospheric Administration [NOAA], 2012a and 2012b). Southern portions of the ACP, including the coastal areas in Virginia and North Carolina, can have temperatures below freezing between late October and early April, but sustained temperatures below freezing and frozen soil conditions are less likely than in northern or mountainous regions (NOAA, 2012c).

The purpose of this *Winter Construction Plan* is to identify best management practices for construction activities during the Winter. Under frozen soil conditions, the measures in this plan will supersede relevant or corresponding measures in the Federal Energy Regulatory Commission's (FERC) *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan) and *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures) as well as Atlantic's and DTI's *Restoration and Rehabilitation Plan*. In the transitional period between non-frozen and frozen soil conditions, Atlantic and DTI will implement appropriate measures as described in the Plan, Procedures, *Restoration and Rehabilitation Plan*, or this *Winter Construction Plan* based on site-specific conditions (e.g., soil stability) as determined by

Atlantic's and DTI's Environmental Inspectors (EIs),¹ activity inspectors, and construction manager.

3.0 TRAINING

Prior to the start of construction, Atlantic and DTI will conduct environmental and safety training for Company and Contractor personnel. The training program will focus on the Plan and Procedures; other construction, restoration, and mitigation plans, including this *Winter Construction Plan*; and applicable permit conditions. In addition, Atlantic and DTI will provide large-group training sessions before each work crew commences construction with periodic follow-up training for groups of newly assigned personnel.

4.0 SNOW REMOVAL

Snow will be removed from construction work areas to expose soils for grading and excavation. Snow removal will be limited to active construction areas and areas needed to maintain access to the construction rights-of-way. Snow will be bladed or pushed to the edges of the right-of-way with a motor-grader, snowplow, or bulldozer, and stockpiled within the right-of-way or in approved additional temporary workspace (ATWS) areas. Snow will not be bladed off the right-of-way. The bladed equipment on the motor-grader, snowplow, or bulldozer will be fitted with a "shoe" to minimize impacts on the underlying soil and vegetation. Alternatively, in the event of extreme snow events or significant snow drifts, and with landowner permission, snow may be blown off the right-of-way using industrial blowers mounted to construction vehicles. Snow that is blown off the construction right-of-way will be directed away from existing roads and driveways, parking areas, residences, or other landowner structures. Regardless of the method used, snow removal equipment will access the construction areas from approved access roads, and will operate from within the construction right-of-way or approved ATWS areas.

Snow also will be removed, as necessary, from approved access roads by plowing to the edges of the road or blowing off the road (away from driveways, parking areas, residences, or other landowner structures) to allow safe access to the construction right-of-way. Access roads will be maintained in accordance with applicable permit requirements and landowner agreements. Snow removal from private access roads will continue as necessary through the end of active construction. Atlantic and DTI will not be responsible for snow plowing or removal on publicly maintained roads.

Snow will be removed from both the working and spoil sides of the construction right-of-way prior to topsoil segregation and grading to prevent mixing of snow with excavated spoil. Snow will be removed and stockpiled along the edges of the construction right-of-way or in approved ATWS areas, or blown off the right-of-way as described above. Gaps will be left in stockpiled snow piles based on an assessment of drainage patterns to allow water to drain off of the right-of-way during the Spring thaw or other warm periods. Gaps also will be left in the stockpiled snow at drainage crossings.

¹ The role and responsibilities of an EI are defined in the FERC's Plan.

If practicable, and in times of extremely cold weather, snow may be stored over the trenchline prior to trench excavation to prevent frost penetration along the trenchline. This snow will be bladed or pushed to the edge of the spoil side of the construction right-of-way immediately prior to topsoil removal and trenching activities.

Additional snow which accumulates on the right-of-way during construction will be removed and stockpiled along the edges of the construction right-of-way or in approved ATWS areas, or blown off the right-of-way as described above. Large accumulations of snow on excavated spoil piles will be removed as practicable prior to backfilling. Snow will not be mixed with spoil during backfilling to the extent practicable.

Generally, snow will be allowed to melt in place during the Spring thaw or other warm periods. The EIs for the Projects will work with the Contractors to identify sites where large accumulations of melting snow may flow away from the right-of-way causing erosion. Erosion control devices and diversion berms will be installed as appropriate in these areas in accordance with the Plan and Procedures or as described in Section 7.0 below. If site-specific conditions require the placement of erosion control devices or diversion berms outside the limits of the construction corridor or approved ATWS areas, Atlantic and/or DTI will request approval from the FERC and the affected landowner prior to installing these items.

5.0 GENERAL CONSTRUCTION AND RESTORATION MEASURES

In non-frozen conditions, all construction activities (topsoil removal and segregation, grading, trenching, pipe installation, backfilling, restoration, and clean-up) will be conducted in accordance with the Plan and Procedures, as appropriate. The following alternative methods will be implemented in frozen soil conditions, should these conditions be encountered during construction.

In agricultural lands, topsoil will be removed and segregated from the trenchline and the spoil side of the construction right-of-way with the exception of areas directly beneath snow stockpiles. In open uplands, including pasture and hay fields, topsoil will be removed and segregated from the trenchline only with the exception of limited areas where grading is necessary to create a level work surface within the construction right-of-way. Topsoil typically will be removed using a step blade attached to a bulldozer. Alternatively, Atlantic and DTI may remove topsoil in frozen conditions by ripping with a grader or heavy disc or by utilizing a pavement excavator to pulverize the topsoil and allow for conventional removal.

The method of topsoil removal will be determined by Atlantic's or DTI's EIs and construction manager based on site-specific conditions, including depth and extent of frost penetration into the soil. The method selected will be the best available for retaining soil and root structure within the excavated topsoil to the extent practicable given the soil conditions. Segregated topsoil will be placed on the construction right-of-way adjacent to stockpiled snow. Subsoil excavated from the trenchline will be stockpiled separately from topsoil in the area immediately adjacent to the trench.

Soils excavated while frozen may slump if they thaw. To prevent the mixing of topsoil and subsoil if slumping occurs, Atlantic and DTI will cover the stockpiled topsoil in mulch, which will create a barrier between topsoil and subsoil.

Trenching, lowering-in, and backfilling operations will be scheduled to minimize the exposure time of excavated spoil material to freezing conditions and to reduce the potential for snow accumulation in the trench. Appreciable accumulations of snow in the trench (generally greater than 12 inches in depth) will be removed prior to installation of the pipeline. Backfilling operations will commence as soon as practicable after the pipeline is installed in the trench.

In upland areas, the trench will be backfilled with subsoil as described below. Depending on the extent of frost penetration in topsoil piles, however, the topsoil may be stockpiled over the Winter for replacement during the following Spring when it can be worked and contoured.

Stockpiled subsoil will develop a layer of frost penetration, the thickness of which will be dependent on water content, temperature, wind, and snow cover conditions. Prior to backfilling, frozen material will be skimmed off the top of the subsoil pile to provide access to underlying, unfrozen subsoil for backfilling. The unfrozen subsoil material will be backfilled over the pipeline first, followed by the frozen subsoil material. If frozen subsoil exhibits lumps or sharp edges that could damage the coating on the pipeline, Atlantic's or DTI's construction manager will determine appropriate backfill measures to be implemented. Such measures may include the use of mechanical shakers or grinders to break up frozen subsoils prior to backfilling, or in extreme cases, the use of sand padding around the pipe. If sand padding is used, it will be obtained from an upland commercial source and used in upland areas only.

In certain limited areas, such as graded slopes and road and railroad crossings, subsoil (in addition to topsoil) may be stockpiled over the Winter for replacement during the following Spring. In these areas, Atlantic and DTI will ensure that there are adequate gaps between the topsoil and subsoil piles to allow water to drain between the piles during the Spring thaw and to prevent mixing of the soils. Signs will be installed as necessary to differentiate between the subsoil and topsoil piles.

Where topsoil is stockpiled over Winter, Atlantic and DTI will cover the pile in mulch and crimp the mulch or install mechanically-fastened erosion control fabric (e.g., Curlex) over the stockpile to prevent loss of topsoil during the Winter and throughout the Spring melt or other warming event. Gaps will be installed within soil piles based on an assessment of drainage patterns to allow water to drain off of the right-of-way during the Spring thaw, and berms or water bars will be installed as necessary to prevent water flow down the right-of-way.

Where final grading and restoration cannot be completed due to frozen conditions, the right-of-way will be left in a roughened condition to reduce the potential for erosion during the Spring melt. In upland areas, a slight subsoil crown may be left over the pipeline to account for settling as backfilled soils thaw. If a crown is left over the pipeline, breaks will be installed to allow water to drain across the right-of-way during the Spring melt. Atlantic and DTI will install erosion and sedimentation control devices in accordance with the Plan and Procedures or as described in Section 7.0 below, but will not reseed during frozen conditions.

In areas where topsoil replacement is delayed to the following Spring due to frozen soil conditions, or in areas where seeding is delayed due to seeding period restrictions, Atlantic and DTI will mulch disturbed areas within the right-of-way in non-cultivated uplands in accordance with the Plan.

Final cleanup activities will be performed once the ground is fully thawed in the Spring and the topsoil (and subsoil, if applicable) stockpiled over Winter has dried sufficiently to allow it to be worked without causing excessive compaction and/or rutting. The schedule for final clean-up will be determined based on ground conditions, but Atlantic and DTI anticipate that activities will resume in the Spring or as soon as extended periods above freezing occur. Final clean-up and restoration activities (including final grading, topsoil replacement, and reseeded) will be conducted in accordance with the Plan and Procedures and *Restoration and Rehabilitation Plan*.

The potential for soil compaction is minimal under frozen soil conditions; however, Atlantic and DTI will implement measures identified in the Plan and Procedures to decompact soils, where necessary, during final clean-up and restoration activities.

6.0 WETLANDS

Construction in Winter months may minimize impacts in wetlands because construction will occur outside of the wet (Spring, Summer, and Fall) seasons in areas where sustained frozen conditions occur along the pipeline routes. In Winter conditions, frozen soils may provide stability for construction equipment working on the right-of-way and help prevent sloughing of the pipe trench which could occur in the Spring, Summer, and Fall seasons due to saturated conditions.

Construction across wetlands will be conducted in accordance with the Procedures, except that snow berms (rather than silt fences) may be installed as temporary erosion control devices to prevent sediment migration off the right-of-way. If snow is not available, or if melted runoff may undercut snow berms, other temporary erosion control devices, such as silt fence, coir logs, or filter socks, will be installed to prevent sediment migration off the right-of-way. Regardless of the initial method used, silt fence will be installed across the right-of-way on the approaches to wetlands prior to the Spring run-off or warm Winter periods.

In non-frozen soil conditions in wetlands, Atlantic and DTI will remove and segregate topsoil from the area disturbed by trenching, except in areas where standing water is present or soils are saturated. In frozen soil conditions in wetlands, Atlantic and DTI will remove and segregate topsoil from the area disturbed by trenching, but a thin layer of topsoil may be left over the trenchline during the process of removing the topsoil to prevent the introduction of subsoil into the segregated topsoil. In both non-frozen and frozen conditions, the trench in wetlands will be backfilled with subsoil as described above for uplands and the topsoil (where segregated) will be replaced at the time of construction. Atlantic and DTI will not stockpile topsoil from wetlands over the Winter for replacement the following Spring; this will minimize the need to conduct restoration activities in wetlands during the wet (Spring, Summer, and Fall) season.

Contours in wetlands will be restored as near as practicable to pre-construction condition. If necessary, Atlantic and DTI will use mechanical shakers or grinders, or other suitable methods to break up frozen topsoil prior to replacement over the trench. In frozen soil conditions, a topsoil crown (average of 4 inches in height, but no greater than 8 inches in height) will be left over the trenchline to account for settling as backfilled soils thaw. Breaks will be installed in the crown to allow water to flow across the trenchline and to prevent water from ponding on either side of the crown.

7.0 WATERBODIES

Construction in the Winter may minimize impacts on waterbodies because construction will occur outside of the wet seasons in the areas crossed. This may avoid or minimize the potential for increased turbidity within waterbodies as well as impacts on fisheries.

Construction activities will be conducted in accordance with the Procedures. Contours of the bed and banks will be restored as near as practicable to pre-construction condition. Additional measures, such as the installation of erosion control blankets, will be implemented as necessary to stabilize the bed and banks of the waterbody in advance of the return of water flow or the Spring melt.

Atlantic and DTI will use stream gauge data from the U.S. Geological Survey to determine the highest anticipated flows during the time of each waterbody crossing. In the absence of stream gauge data, Atlantic's and DTI's engineers and EIs will estimate the highest anticipated flows based on the width of the waterbody at the ordinary high water mark, the depth of the waterbody, existing flows at the time of the crossing, and the weather forecast at the time of the crossing. As a contingency, Atlantic and DTI will stage additional materials (e.g., flume pipes and erosion control devices) at the crossing in the event that the volume of flow increases due to an unexpected precipitation event or snow melt. The duration of most in-stream construction activities, i.e., 24 hours for minor waterbodies and 48 hours for intermediate waterbodies (excluding blasting), will minimize the exposure time for increased flows due to a unexpected precipitation event or snowmelt.

If thick ice is encountered on waterbodies at the time of construction, the ice will be removed where required for safe construction and placed outside of the waterbody on the spoil side of the right-of-way.

8.0 EROSION CONTROLS, MULCHING, AND SEEDING

Temporary and permanent erosion and sedimentation control measures will be implemented in accordance with the Plan and Procedures or as described below depending on ground conditions. The EIs for the Projects will verify that the erosion and sedimentation control measures are appropriate for the weather conditions. The following measures will be implemented in order for erosion control devices to be effective throughout the Winter and able to withstand the runoff that accompanies Spring thaw and snow melt conditions:

- Temporary erosion control devices (silt fences in non-frozen conditions or straw bales, straw logs, or snow berms in frozen conditions) will be installed where

appropriate during topsoil stripping and grading activities to prevent the movement of disturbed soils off the right-of-way.

- In non-frozen conditions, temporary slope breakers consisting of mounded and compacted soil will be installed during clearing and grading activities in areas required by the Plan and Procedures. In frozen conditions, temporary slope breakers will not be installed during initial clearing and grading activities because soils will be frozen and not subject to erosion. However, temporary slope breakers will be installed prior to the Spring thaw, where required by the Plan and Procedures, as follows:
 - In cultivated lands, temporary slope breakers consisting of mounded and compacted subsoil will be placed across the right-of-way. Breaks will be installed in snow and topsoil piles where intersected by the temporary slope breakers to promote water flow off of the right-of-way during melting periods. When restoration activities resume the following Spring or Summer, the temporary slope breakers will be removed; the topsoil stockpiled over Winter will be replaced across the right-of-way; and silt fences will be installed in areas required by the Plan or Procedures.
 - In open uplands, including cleared forests, grasslands, hay fields, and pasture, temporary slope breakers consisting of mounded and compacted subsoil will be placed across the right-of-way. Breaks will be installed in snow and topsoil piles where intersected by the temporary slope breakers to promote water flow off of the right-of-way during the Spring thaw. When restoration activities resume the following Spring, the temporary slope breakers will be left in place; the topsoil stockpiled over Winter will be replaced over the right-of-way, including over the temporary slope breakers; and silt fences will be installed in areas required by the Plan or Procedures. In this way, the temporary slope breakers will form the basis of permanent slope breakers across the right-of-way.²
- Energy dissipating devices, such as stone riprap, will be installed at the outlet end of slope breakers as required by site conditions.
- Erosion control devices will be inspected by the EIs and repaired as necessary to be functional for Spring runoff.
- If an erosion control device is located in an area which is not accessible due to weather conditions or saturated soils during Spring thaw, Atlantic or DTI will request a variance from the FERC. Requested variances will depend on specific circumstances and site conditions, but would likely be related to the timeframe associated with installation, repair, or maintenance of erosion control devices.
- Mulch will be applied to topsoil stockpiled over Winter as described in Section 4.0 above.

² In pasture and hayfields, temporary slope breakers will be removed if requested by the landowner.

- Mulch will be applied to disturbed areas within the construction right-of-way in non-cultivated uplands in areas where topsoil replacement is delayed to the following Spring or Summer due to frozen soil conditions or in areas where seeding is delayed due to seeding period restrictions.
- Where required on the construction right-of-way, mulch typically will be applied at a rate of 2 tons/acre. When mulching before seeding, however, mulch will be applied at a rate of 3 tons/acre on slopes within 100 feet of waterbodies and wetlands. If conditions preclude crimping, Atlantic or DTI may elect to spray water to freeze the mulch in place, or apply a biodegradable tackifier.
- Following final grading and cleanup, and in the appropriate season, Atlantic and DTI will condition the construction right-of-way for planting including the preparation of a seedbed and application and incorporation of soil amendments, as appropriate. Reseeding will be conducted in accordance with the Plan and Procedures and *Restoration and Rehabilitation Plan*, as appropriate.

9.0 TEMPORARY EQUIPMENT BRIDGES

Temporary bridges will be installed at waterbody crossings as required by the Procedures. Snow will be removed from the temporary bridges by plowing the snow off the bridge onto the right-of-way or approved ATWS. Snow will not be plowed off the bridge into the waterbody.

10.0 TRENCH DEWATERING

Trench dewatering in both non-frozen and frozen conditions will be conducted in accordance with the Plan and Procedures, as appropriate. Under frozen conditions, dewatering structures may need to be larger and located further away from the construction area to avoid trench water moving back into the construction right-of-way due to low infiltration rates.

11.0 HYDROSTATIC TESTING

Hydrostatic testing is not anticipated in the Winter or in frozen conditions.

12.0 WINTER AND SPRING INSPECTIONS

Following pipeline construction activities and prior to the resumption of restoration activities the following Spring, Atlantic's and DTI's EIs will inspect the condition of erosion control devices within 48 hours of a significant rain or snow melt event, if accessible and weather permitting, to ensure that the devices remain in place and are effective in controlling snow melt and Spring runoff. The EIs will use public roads and approved access roads for access to the construction right-of-way. Particular attention will be paid to steep slopes and wetland and waterbody crossings. The EIs will determine the most effective means of correcting problems, taking into account the suitability of the right-of-way for equipment access, damage that could occur as a result of equipment crossing the right-of-way (e.g., in saturated soil conditions), and the urgency/significance of the problem.

To ensure that sufficient materials are available to repair or replace erosion control devices as necessary at the time they are inspected, Atlantic and DTI will stockpile materials

within its staging areas over the Winter and Spring so they are available to the EIs and Contractor personnel. Atlantic's and DTI's EIs and the construction contractors will attempt to complete repairs at the time non-functioning or damaged erosion control devices are discovered. If repairs to erosion control devices cannot be completed within 7 days, Atlantic or DTI will seek a variance from FERC.

13.0 SPRING THAW CONDITIONS

When possible, construction during Spring thaw conditions will be avoided or minimized to reduce or avoid impacts within the construction right-of-way. However, in the event that the construction activities are required in Spring thaw conditions, the following measures will be implemented to prevent soil mixing, rutting, and compaction:

- The Contractors will work only in well drained, dry sites and/or frozen areas until conditions improve.
- The Contractors will use equipment best suited to existing ground conditions, e.g., low ground pressure equipment.
- The Contractors will install mats along the travel lane where soils are excessively wet and rutting is occurring to prevent mixing of topsoil and subsoil.
- The Contractors may use frost driving measures, such as snow packing, to increase the load bearing capacity of the ground where necessary to remove equipment off the right-of-way (but not as a condition to allow construction to continue). The frost driving measures will be implemented in the early morning or evening to take advantage of colder temperatures.
- If native materials become unsuitable for frost driving, e.g., mud resulting from snow melt, timber equipment mats will be used to create a suitable driving surface.
- When ground conditions are frozen, construction activities in problem areas will be postponed until evening or early morning.
- If the EI and construction manager determine that muddy conditions are severe and rutting occurs, work will be suspended until conditions improve.
- The EI will monitor, report, and initiate repairs in problem areas associated with Spring thaw.
- If the measures above do not allow for suitable soil conditions, Atlantic's or DTI's Contractors will suspend construction activities in problem areas until soil conditions are suitable.

14.0 SPRING RIGHT-OF-WAY ASSESSMENT

Atlantic and DTI will conduct pedestrian, windshield, and aerial reconnaissance surveys along the construction right-of-way in the late Winter or early Spring of 2018 and 2019, depending on construction spread, after the snow cover has disappeared and thaw is progressed. The surveys will identify erosion control structures in need of repair, areas of slope instability along the construction right-of-way, areas where settling of soils or subsidence has occurred along the trench line, and areas where erosion is occurring. Data from the surveys will be used to plan final clean-up and restoration activities in the Spring of 2018 or 2019, depending on construction spread.

15.0 FINAL CLEAN-UP AND RESTORATION

In frozen conditions, final clean-up and restoration (including weed treatments where required, topsoil replacement, final grading, and seeding) will be deferred to the Spring of 2018 and 2019, depending on construction spread. EIs will be deployed to verify that clean-up and restoration work is conducted in compliance with the environmental requirements of the Projects.

Special measures will be implemented during final clean-up and restoration in the event that subsidence is identified along the trenchline. In areas where topsoil is stockpiled over the Winter, the right-of-way may be re-graded prior to topsoil replacement. Additional subsoil will be placed over the trenchline during grading to restore pre-construction contours to the extent practicable. If subsidence has occurred in areas where topsoil is replaced prior to the end of active construction (e.g., in wetlands or in areas where construction occurred during non-frozen conditions), the topsoil will be removed and the right-of-way re-graded as described above to restore pre-construction contours to the extent practicable. In both cases, topsoil will be replaced after re-grading is complete. If insufficient topsoil is available to restore the area to pre-construction condition, additional topsoil will be obtained from local sources to restore the area.

16.0 MONITORING AND REPORTING

Atlantic and DTI will conduct monitoring and reporting in accordance with the Plan and Procedures, Certificate and permit conditions, and the *Restoration and Rehabilitation Plan*.

17.0 REFERENCES

- National Oceanic and Atmospheric Administration. 2012a. Charleston, West Virginia Field Office, Spring Freeze Maps. Available online at: <http://www.erh.noaa.gov/rlx/climate/springfreeze.html>. Accessed June 2015.
- National Oceanic and Atmospheric Administration. 2012b. Charleston, West Virginia Field Office, Fall Freeze Maps. Available online at: <http://www.erh.noaa.gov/rlx/climate/fallfreeze.html>. Accessed June 2015.
- National Oceanic and Atmospheric Administration. 2012c. Eastern Regional Headquarters. Spring and Fall Freeze Dates and Probabilities for Southeastern North Carolina and Northeastern South Carolina. Available online at: <http://www.erh.noaa.gov/ilm/climate/freeze/>. Accessed June 2015.