

JPA Section M - Northampton County
Erosion and Sediment Control Plan



PennEast Pipeline Company, LLC

PHASE 1 OF THE PENNEAST PIPELINE PROJECT



Erosion and Sedimentation Control Plan

Narrative

Application for:

PA Chapter 102 Erosion and Sediment Control General Permit – 3

December 2018

Revised September 2020

Contents

APPLICATION FOR:	1
PA CHAPTER 102 EROSION AND SEDIMENT CONTROL GENERAL PERMIT – 3	1
1.0 INTRODUCTION	1
1.1 Purpose of this Plan	1
1.2 Guidelines and Requirements	2
1.3 Surveys, Permits, and Notifications.....	2
1.4 Inquiries	2
2.0 EXISTING CONDITIONS.....	2
2.1 Existing Land Use and Land Cover.....	2
2.2 Receiving Waters.....	3
2.3 Watercourses with Regulated Riparian Areas	4
2.4 Soil Characteristics	4
2.5 Naturally Occurring Geologic Formations	5
3.0 PROPOSED CONDITIONS.....	7
3.1 Proposed Land Cover.....	7
3.2 Proposed Site Drainage Characteristics	8
3.3 Proposed Riparian Buffer	9
4.0 SUPERVISION AND INSPECTION.....	9
4.1 Responsibilities of the Environmental Inspectors.....	9
4.2 Environmental Training for Construction.....	11
5.0 DESCRIPTION OF EROSION AND SEDIMENT CONTROL BMPS	11
5.1 Temporary and Permanent Revegetation.....	14
5.2 Protection of Sensitive and Special Value Features.....	14
5.3 Minimize Earth Disturbance	14
5.4 General Erosion and Sediment Control Plan Requirements	14
6.0 PROJECT SITE RUNOFF PRIOR TO SITE RESTORATION	15
7.0 RECYCLING/DISPOSAL OF MATERIALS.....	15
8.0 ANTIDegradation ANALYSIS	16
8.1 Nondischarge Alternatives.....	16
8.1.1 Alternative Routes.....	16
8.1.2 Limited Disturbed Area.....	17
8.1.3 Limiting Extent and Duration of the Disturbance	17
8.1.4 Riparian Buffers and Riparian Forest Buffers.....	17
8.1.5 Treatment Train Combination of BMPs.....	18
8.2 Antidegradation Best Available Combination of Technologies	18
8.2.1 Site Access	18
8.2.2 Sediment Barriers.....	18
8.2.3 Stabilization.....	18
9.0 CONSTRUCTION TECHNIQUES FOR NATURAL GAS PIPELINES	19
9.1 Typical ROW Requirements.....	19
9.2 Access Roads	19

9.3	Wareyards	20
9.4	Off-ROW Disturbance	20
9.5	Construction Sequence	20
9.5.1	Clearing	21
9.5.2	Installing Temporary BMPs	22
9.5.3	Grading	22
9.5.4	Installing Temporary Waterbars	24
9.5.5	Trenching	24
9.5.6	Trench Dewatering	24
9.5.7	Pipe Installation	25
9.5.8	Backfilling	25
9.5.9	Hydrostatic Testing	26
9.6	CWA Restoration and Final Cleanup	26
9.6.1	Permanent Erosion Control	27
9.6.2	Revegetation and Seeding	28
9.6.3	Mulch	28
9.6.4	Winter Stabilization	29
9.7	Unauthorized Vehicle Access to ROW	29
10.0	SPECIAL CONSTRUCTION METHODS	30
10.1	Agricultural Areas	30
10.1.1	Drain Tiles	30
10.1.2	Irrigation	30
10.1.3	Soil Compaction Mitigation	30
10.1.4	Landowner Requested Temporary and Permanent Stabilization	30
10.2	Road Crossings	31
10.3	Residential Areas	31
10.3.1	Construction Procedures	31
10.3.2	Construction Techniques	31
10.3.3	Cleanup and Restoration	32
11.0	WATERCOURSE CROSSINGS	32
11.1	Watercourse Definitions	32
11.2	General Watercourse Procedures	33
11.2.1	Time Window for Construction	33
11.2.2	Temporary Equipment Bridges	33
11.2.3	Clearing and Grading	33
11.2.4	Installing Temporary Erosion and Sediment Control	34
11.2.5	Various Types of Crossings	34
11.2.6	Restoration	38
12.0	WETLAND CROSSINGS	38
12.1	General Procedures	39
12.1.1	Clearing and Grading	39
12.1.2	Temporary Erosion and Sediment Control	39
12.1.3	Crossing Procedure	40
12.1.4	Cleanup and Restoration	40

13.0 PREPAREDNESS, PREVENTION, AND CONTINGENCY (PPC) PLAN..... 40

14.0 POST CONSTRUCTION ACTIVITIES 41

 14.1 Post-Construction Monitoring 41

 14.2 Post-Construction Maintenance 42

 14.2.1 Uplands 42

 14.2.2 Watercourses and Wetlands..... 42

 14.3 Reporting 43

Tables

Table 2.2-1	Summary of Pennsylvania-Designated High Quality Waters, Exceptional Value Waters, and Water with Trout Designations Crossed by the Pipeline Facilities
Table 3.1-1	PennEast Pipeline MLV Sites in Pennsylvania

Appendices

Appendix 1	PADEP Standard E&S Worksheet 1 (Compost Filter Sock)
Appendix 1A	Luzerne County
Appendix 1B	Carbon County
Appendix 1C	Monroe County
Appendix 1D	Northampton County
Appendix 2	Clean Water Diversions: Drainage Area Mapping & PADEP Standard E&S Worksheets 9, 10, & 11
Appendix 2A	Luzerne County
Appendix 2B	Carbon County
Appendix 2C	Monroe County
Appendix 2D	Northampton County
Appendix 3	North American Green Product Specifications
Appendix 3A	Filtrexx Siltsoxx (Durasox) Specifications
Appendix 3B	Filtrexx Runoff Diversion Media Specifications
Appendix 4	Geologic Hazard Mitigation Plan
Appendix 5	PADEP Standard E&S Worksheet 22 (Plan Preparer Record of Training and Experience in Erosion and Sediment Pollution Control Methods and Techniques)
Appendix 6	Soil Map Units Crossed by the Construction and Operation of the Project Pipeline Facilities and Important Soil Attributes
Appendix 7	MLV Sites - PADEP Standard E&S Worksheet 11 (Channels) & Runoff Calculations
Appendix 7A	Luzerne County
Appendix 7B	Carbon County
Appendix 7C	Northampton County
Appendix 8	MLV Sites - Drainage Area Mapping
Appendix 8A	Luzerne County
Appendix 8B	Carbon County
Appendix 8D	Northampton County

****EROSION AND SEDIMENT CONTROL DRAWINGS PROVIDED SEPARATELY****

1.0 INTRODUCTION

This Erosion and Sediment Control Plan (E&SCP or Plan) has been developed to address control of accelerated erosion and sedimentation resulting from earth disturbance associated with the proposed Phase 1 of the PennEast Pipeline Project (Project). The Plan consists of this written narrative and the attached appendices and plan drawings. It was developed to be in accordance with the requirements of 25 PA Administrative Code Chapters 78 and 102, as well as the Clean Streams Law (35 P. S. §§ 691.1001), as amended, utilizing guidelines and Best Management Practice (BMP) information provided in the Pennsylvania Department of Environmental Protection (PADEP) Erosion and Sediment Pollution Control Program Manual dated March 2012 (PADEP E&S Manual) and Pennsylvania Stormwater BMP Manual dated December 2006 (PADEP BMP Manual). This E&SCP complements the Site Restoration Plan (SR Plan) /Post Construction Stormwater Management Plan (PCSM Plan) prepared for this project and was planned and designed to be consistent with the SR/PCSM Plan under PA Code § 102.8. An up to date copy of this E&SCP Plan (including this narrative and all appendices, and any subsequently granted variances to the Plan) shall be maintained and available at the Project site during all stages of earth disturbance activity. This Plan was prepared under the direct supervision of a Pennsylvania licensed Professional Engineer trained and experienced in erosion and sediment (E&S) control methods and techniques applicable to the size and scope of the proposed project.

PennEast Pipeline Company, LLC (PennEast) has prepared this E&SCP to support its application to the Federal Energy Regulatory Commission (FERC or Commission) for a certificate of public convenience and necessity (Certificate) for the Project. PennEast proposes to construct, install, and operate the Project facilities to provide approximately 650,000 dekatherms per day (Dth/Day) of year-round transportation service from northern Pennsylvania to markets directly in eastern and southeastern Pennsylvania, and indirectly in surrounding states via existing downstream pipeline networks.

The Project consists of the following primary components in Pennsylvania:

- 67.7 miles of new 36-inch diameter mainline transmission pipeline extending from Dallas Township in Luzerne County to Bethlehem Township in Northampton County (PennEast Mainline Pipeline Route);
- 0.5 mile of new 4-inch diameter lateral in Carbon County, Pennsylvania to transport gas to an interconnection with UGI Central Penn Gas, Inc. (Blue Mountain Interconnect) known as the Blue Mountain Lateral;
- One new compressor station in Kidder Township, Carbon County, Pennsylvania; and
- Various associated aboveground facilities including interconnects, launchers, receivers, and mainline block valves (MLVs) to support the pipeline system.

1.1 Purpose of this Plan

This E&SCP has been prepared for use by PennEast and its contractors as a guidance manual for minimizing erosion of disturbed soils and transportation of sediments off the right-of-way (ROW) and into sensitive resources (wetlands, streams, and residential areas) during natural gas pipeline construction. The procedures developed in this E&SCP, which represent the PennEast's BMPs, are designed to accommodate varying field conditions while maintaining rigid minimum standards for the protection of environmentally sensitive areas.

This E&SCP is designed to provide specifications for the installation and implementation of soil erosion and sediment control measures while permitting adequate flexibility to use the most appropriate measures based on site-specific conditions. The intent of this E&SCP is to provide general information on the pipeline construction process and to describe specific measures that will be employed during and following construction to minimize impacts to the environment along the pipeline ROW.

This E&SCP Narrative is applicable to all earth disturbance associated with the Project, with the exception to the following aboveground facilities:

- Wyoming Interconnect
- Springville Interconnect
- Auburn & Leidy Interconnects
- Kidder Compressor Station
- Blue Mountain Interconnect
- Church Road Interconnects

Each of these aboveground facilities has an individual report that includes site specific information.

The goal of this E&SCP is to preserve the integrity of environmentally sensitive areas and to maintain existing water quality by implementing the following objectives:

- Minimize the extent and duration of disturbance;
- Protect exposed soil by diverting runoff to stabilized areas;
- Install temporary and permanent erosion control measures; and
- Establish an effective inspection and maintenance program.

1.2 Guidelines and Requirements

The measures described in this E&SCP have been developed based on guidelines from the FERC, the United States Army Corps of Engineers (USACE), the United States Fish and Wildlife Service (USFWS), the United States Department of Agriculture (USDA), the Pennsylvania Game Commission (PAGC), the PADEP, and the Pennsylvania County Conservation Districts, as well as PennEast’s standard construction practices.

1.3 Surveys, Permits, and Notifications

PennEast shall perform the required environmental field surveys, conduct appropriate agency coordination, and acquire the necessary environmental permits prior to start of construction of the Project. PennEast shall notify the appropriate federal and state agencies prior to, during, and/or subsequent to the construction of the Project.

1.4 Inquiries

Inquiries regarding this E&SCP should be addressed to:

Mott MacDonald
 Michael DeNichilo, P.E.
 111 Wood Avenue South
 Iselin, NJ 08830-4112
 michael.denichilo@mottmac.com

2.0 EXISTING CONDITIONS

2.1 Existing Land Use and Land Cover

Construction and operation of the Project’s facilities may result in both temporary and permanent alterations to land use and land cover. This section identifies land requirements for the Project and describes existing land use within the proposed Project areas. The locations of mapped soil types are shown on the E&SCP drawings. Information provided in this section includes land that will be affected by the temporary construction and permanent ROW, MLVs, extra work or staging areas, and wareyards. Land use data was calculated based on information obtained through field surveys, review of aerial photography and USDA National Agricultural

Statistics Service (NASS) Cropland Data Layer (USDA-NASS, 2014). The land use characteristics are classified by primary vegetation cover type and/or predominant land use. Land use types within the Project area are classified into the following ten categories:

- Agricultural - Active cropland, pasture, orchards, vineyards, and/or hay fields;
- Commercial/Industrial - Electric power or gas utility stations, manufacturing or industrial plants, landfills, mines, quarries, and commercial or retail facilities;
- Upland Forest - Tracts of upland or wetland forest or woodland that would be removed for the construction ROW or extra work or staging areas;
- Institutional - Land occupied by public buildings such as schools, universities, government office buildings, art galleries, and museums;
- Urban - Land characterized by high human population density and built features in comparison to the areas surrounding it;
- Open Land - Non-forested lands, herbaceous and scrub-shrub wetlands, and maintained utility ROW;
- Residential - Residential yards and residential subdivisions;
- Roadways/Railroads - roadway and railroad ROWs;
- Special Land Use – Characterized by religious and recreational use such as churches, parks, baseball fields, etc.;
- Open Water - Water Crossings.

PennEast compared aerial photography from September 2010 available through Google Earth Pro and compared it to aerial photography that PennEast captured in 2015. There have been no significant changes to land use along the proposed pipeline alignment in the past five years.

2.2 Receiving Waters

PennEast completed a wetland and watercourse investigation of the project area. The boundary of this site investigation, and all environmental resources identified during this investigation are shown in the E&SCP drawings. A Wetland and Watercourse Delineation Report is included in the Section 404 / Chapter 105 General Permit submittal under separate cover for wetlands work completed in Pennsylvania.

The study area associated with the project site is tributary to numerous receiving waters. Refer to the E&SCP alignment sheet drawing watershed name band and watershed classification band for the name of each watershed crossed by the Project and their associated PA Code, Title 25, Chapter 93 Designated or Existing Uses.

High Quality (HQ) and Exceptional Value (EV) waters and waters with trout classifications crossed by the Project in Pennsylvania are summarized in Table 2.2-1.

**Table 2.2-1
Summary of Pennsylvania-Designated High Quality Waters, Exceptional Value Waters, and Waters with Trout Designations Crossed by the Pipeline Facilities**

Facility	PA Code Designated/Existing Use ¹		PFBC Fishery Designations ²	
	HQ ³	EV ³	Stocked Trout ³	Wild Trout Waters ³
PennEast Mainline	83	16	12	146
Blue Mountain Lateral	3	0	0	3

Notes:

1. Sources: PADEP Streams Chapter 93 Existing Use, dated 3/2019 and PADEP Streams Chapter 93 Designated Use, dated 3/2019. If a stream has an existing use, the designated use has been replaced with that value. Available at www.pasda.psu.edu.
2. Sources: PASDA Stocked Trout Waters (Flowing Waters), dated 2019 and PASDA Trout Stocked Streams, dated 2019. PFBC Stream Sections that Support Wild Trout Production, dated 7/2019 and PFBC Class A Wild Trout Streams, dated 7/2019. Available at www.pasda.psu.edu.
3. If the Project crosses a watercourse resource more than once, each crossing is counted separately.

Based on the PADEP 2016 Pennsylvania Integrated Water Quality Monitoring and Assessment Report, the Lehigh River, Monocacy Creek, and East Branch Monocacy Creek are siltation impaired watercourses.

2.3 Watercourses with Regulated Riparian Areas

The Project alignment will cross riparian buffers regulated under PA Chapter 102. Specifically, these regulated areas include 150 feet from the top of bank of perennial and intermittent waters located within Exceptional Value and High Quality watersheds. Anticipated watercourses which will be crossed are delineated on the E&SCP plan view drawings.

PennEast intends to obtain and comply with the applicable Pennsylvania permits required to authorize these disturbances.

2.4 Soil Characteristics

Important attributes of the soils map units crossed by the pipeline are presented on the E&SCP Legends sheet (Drawing 000-01-01-002). The Legends sheet includes the soil use limitations from the PADEP E&S Manual Appendix E for all soils impacted by the Project in Pennsylvania. For all applicable soil use limitations, a resolution has been proposed. The locations of mapped soil types are shown on the E&SCP drawings in plan view as well as in a crossing band on the alignment sheets. These soil boundaries and associated information were obtained from the USDA SSURGO database.

The methods that will be utilized to minimize impacts on soils during construction include, but are not limited to:

- Minimize the area and duration of soil exposure;
- Protect critical areas by reducing the velocity of and controlling runoff;
- Install and maintain erosion and sediment control measures;

- Segregating and stockpiling topsoil on cultivated lands;
- Reestablish vegetation following final grading; and
- Inspect the ROW and maintain erosion and sediment controls, as necessary, until final stabilization is achieved.

2.5 Naturally Occurring Geologic Formations

Coal Mining:

The project crosses the Northern Anthracite Coal Field from MP 5.0R3 to MP 11.5R2. This area was mined via underground mining and surface mining methods from the late 19th century into the mid 20th century. The project crosses directly over worked coal mine seams, strip mines and mining spoil heaps.

PennEast has performed an investigation of the conditions and construction methodology has been reviewed to maintain safe working practice throughout terrain which has been modified by historic mining activities. Hazardous conditions have been identified and will be mitigated as described in Appendix 4, “Geologic Hazard Mitigation Plan.”

Mineral Resources:

Information regarding mining activities and locations was obtained from the PADEP Office of Active and Abandoned Mine Operations and USGS Mineral Resources Online Spatial Data (PADEP, 2014a-c; USGS, 2005).

There are two active quarries located within 0.25 miles of the Project area in Pennsylvania located at MP 9.0R2 to 9.2R2 and near MP 9.8R2 to 9.9R2 in Luzerne County. Compost filter sock will be used as perimeter pollution control at these locations as shown on the E&SCP drawings.

In addition, there are numerous reported abandoned mines or reclaimed mines located within 0.25 miles of the Project area in Luzerne County between MP 5.0R3 and 11.5R2 as mentioned above. Refer to Appendix 4 for mitigation measures.

Landslide Susceptibility:

“Landslide” is a general term for downslope mass movement of soil, rock, or a combination of materials on an unstable slope. Landslides can vary greatly in their rate of movement, area affected, and volume of material. The principal types of movement are falling, sliding, and flowing, but combinations of these are common. The primary cause of landslides is when colluvial (loose) soil and old landslide debris on steep slopes give way. The geologic instabilities that cause landslides are often exacerbated by highway projects in which the earth is cut and soil is loosened. Other primary causes of landslides are rainfall or rain-on-snow events that can weaken debris on steep mountain slopes (McCormick Taylor, 2009).

According to the USGS landslide susceptibility map, portions of the Project area in Luzerne, Carbon, and Northampton Counties, Pennsylvania are susceptible to landslides. The Project area between MPs 5.3 and 15.2 in Luzerne County and between MPs 40.7R2 in Carbon County and 53.2R3 in Northampton County have a relatively high susceptibility to landsliding with moderate incidence. The Project area between MP 20.9 in Luzerne County and MP 23.6 in Carbon County and between MPs 33.6R3 and 35.0 and 38.0 and 40.7R2 in Carbon County have a moderate landslide incidence.

PennEast conducted a seismic hazard evaluation, including a screening-level ground failure evaluation, to evaluate potential seismic hazards such as landslides.

In addition, as part of the seismic hazard evaluation, PennEast conducted a preliminary evaluation of seismically induced landslides using the USGS landslide susceptibility maps and induced seismic demand.

This procedure provides negligible Permanent Ground Disturbance (PGD) for MPs with low and moderate susceptibility and PGD displacements less than 0.1 m for MPs located in high susceptibility zone including segments from MP 5.3 to MP 15.2 and MP 40.7R2 to MP 53.2R3. Mitigation measures are provided in Appendix 4.

PennEast has performed a project specific geohazard review. The review process commenced with a desktop study to query topography and geological data to identify areas of potential hazard. Several locations in Pennsylvania were identified as worthy of a field review to confirm and evaluate conditions. Following the field review, the majority of locations were evaluated to be of low risk and not requiring any specific design changes above the standard E&SC measures for work on slopes. Several of the locations were identified as high risk slopes and to mitigate the risk, the pipeline was rerouted to avoid some of these locations. Refer to Appendix 4 for mitigation measures for the remaining high risk slopes identified for the proposed pipeline route.

Earthquake Probability:

A seismic disturbance is any earth movement (natural or manmade) that is caused by a momentary disturbance of the elastic equilibrium of a portion of the earth. AECOM conducted a seismic hazard evaluation to evaluate the potential seismic hazard of the Project pipeline (68.2 miles in Pennsylvania). The purpose of the study was to estimate the levels of ground motions that will be exceeded at specified annual frequencies (or return periods) by performing a probabilistic seismic hazard analysis (PSHA). Based on the results of the PSHA, design ground motions in terms of peak horizontal ground acceleration (PGA) and peak horizontal ground velocity (PGV) were estimated and provided as input for the seismic design of the pipeline.

In summary, seismic hazard due to wave propagation effects should not pose a significant threat to the PennEast Project. Also, there is no conclusive evidence of Quaternary fault displacement. Therefore, the PGD hazard due to fault offset is considered insignificant.

Potential Geologic Hazard:

Subsidence is the local downward movement of surface material with little or no horizontal movement (Nuhfer, Proctor, and Moser, 1993). Subsidence is a potential geologic hazard in areas where karst terrain occurs and where underground mining has taken place. The project crosses both karst terrain and locations of underground mining.

In karst terrain, limestone and dolomite bedrock are eroded by water and create karst features such as subsurface channels, caves, and sinkholes. USGS Mineral Resources On-Line Spatial Database was used to report the presence or absence of sinkholes for the Project areas. A detailed geophysical survey was completed using electrical resistivity imaging (ERI) to investigate karst conditions proximate to the Project area and borehole drilling program was undertaken at key locations. The presence of karst has been identified at several locations along the proposed pipeline in Pennsylvania and mitigation measures are presented in Appendix 4.

PennEast has installed exploratory borings at select locations where ERI identified potential air-filled and clay-filled voids to confirm their presence and to provide more information to confirm the interpretation of the ERI results. Where large voids are encountered near the surface, they will be excavated and filled using a method that preserves their local drainage function in accordance with Chapter 17 (Areas of Special Concern) in the PADEP E&S Manual.

In mining areas PennEast has conducted a desk study to map documented underground and surface historic mining operations and has drilled boreholes to confirm mine seam locations and evaluate the current conditions. PennEast met with the Pennsylvania Bureau of Abandoned Mine Reclamation to obtain additional mine mapping records. The underground mining operations occurred over 60 years ago and thus the majority of ground settlement has already occurred. The settlement of mine workings has been considered during pipeline design. Sediment and erosion control construction items are designed to manage the conditions

identified. The potential for acid mine drainage from flooded mine workings and from mine spoil heaps does exist within the Project area and will be mitigated via appropriate methods if these conditions encountered.

Faults:

The eastern area of North America including the Project site, is far from the boundaries of the North American plate, which are located in the center of the Atlantic Ocean, the Caribbean Sea, and along the west coast of North America.

The project area crosses the Ramapo fault systems (RFS) which extends from Pennsylvania to New Jersey into New York. No Quaternary-active fault capable of producing surface rupture is recognized in the North Eastern US. No authoritative data source recognizes a Quaternary fault in the vicinity of the pipeline or the North Eastern US. Hence, the surface fault displacement hazard along the pipeline is considered to be negligible and no mitigation measures are required.

3.0 PROPOSED CONDITIONS

The amount of earth disturbed is to be minimized as much as possible. Planning of the construction sequencing is required to limit the amount and duration of open trench sections, as necessary, to prevent excessive erosion or sediment flow into environmental resource areas. Approximately 1,101.0 acres will be disturbed throughout the Project work limits in Pennsylvania. The disturbance along the pipeline ROW and within wareyards is to be temporary. Disturbed areas are to be immediately seeded and mulched upon placement of the proposed pipeline and associated fill.

Earth disturbance is to be restricted to the Limit of Disturbance (LOD) delineated on the E&SCP drawings. These drawings contain “Plan views” which depict proposed facilities and site features. This includes the limits of earth disturbance, the locations of existing roads, and the location of proposed BMPs.

3.1 Proposed Land Cover

During the initial construction stage of the project, much of the area will consist of exposed soils. Upon installation of the pipeline, the ROW is to be stabilized with vegetative cover as indicated on the E&SCP drawings. With the exception of long-term maintenance to trim woody vegetation and occasional mowing, no permanent topographic or land cover changes are proposed along the pipeline alignment aside from areas within the tree clearing limits.

In several locations along the pipeline, there are proposed MLVs which will require minimal grading and cover change with the placement of stone. The table below provides a list of the Project’s proposed MLV sites. Each of these MLVs listed have a separate E&S facility drawing package, which includes existing and proposed land cover types.

Table 3.1-1

PennEast Pipeline MLV Sites in Pennsylvania

Facility Location	Type	MP ¹	Municipality	County	River Basin	Coordinates
PennEast Mainline	Mainline Block Valve 1	8.3R3	Plains Twp	Luzerne	Upper Susquehanna	41° 17' 29.002" N
						75° 49' 51.700" W
PennEast Mainline	Mainline Block Valve 2	19.5	Bear Creek Twp	Luzerne	Upper Delaware	41° 10' 50.892" N
						75° 41' 48.652" W
PennEast Mainline	Mainline Block Valve 3	32.3R2	Kidder Twp	Carbon	Upper Delaware	41° 0' 56.261" N
						75° 37' 2.993" W
PennEast Mainline	Mainline Block Valve 4	46.0	Towamensing Twp	Carbon	Upper Delaware	40° 51' 42.002" N
						75° 31' 52.758" W
PennEast Mainline	Mainline Block Valve 6	57.0	Moore Twp	Northampton	Upper Delaware	40° 46' 6.690" N
						75° 26' 39.997" W
PennEast Mainline	Mainline Block Valve 7	62.4R3	Upper Nazareth Twp	Northampton	Upper Delaware	40° 43' 48.756" N
						75° 21' 49.920" W
Blue Mountain Lateral	Blue Mountain Side Valve	BL-0.0R3	Lower Towamensing Twp	Carbon	Upper Delaware	40° 49' 10.159" N
						75° 29' 43.875" W

Notes:

Source: USGS National Hydrography Dataset (NHD) HUC-6 Watershed Boundaries.

1. MPs shown are based on alignment sheet information and are based on pipeline centerline. All route deviations implemented after the FERC Certificate Application are denoted with an "R" and indicate a MP equation. MPs with an "R1" indicate route deviations implemented and provided to FERC prior to the issuance of the DEIS. MPs with an "R2" indicate route deviations implemented as part of the September 2016 Route Update. Mileposts with an "R3" and "R4" indicate route deviations implemented post-FERC certificate issuance. All MPs without an "R" indicate that the route has not changed since the Certificate Application.

Key:

Twp = Township

Boro = Borough

3.2 Proposed Site Drainage Characteristics

An assessment of the Project site’s natural features was completed at the initial stage of Project planning. The proposed facilities have been sited to protect sensitive natural resources by avoiding these areas whenever possible. The site has also been planned and designed to maintain pre-development drainage patterns to the maximum extent practicable. A conscious effort has been made to maintain existing vegetation where possible and limit the extents of earth disturbance to the area necessary to construct the proposed facilities. Where possible, site drainage will be directed to previously established drainage features. No permanent changes to topography or drainage patterns are proposed for the pipeline aside from permanent waterbars to help prevent formation of rivulets. The location of the proposed drainage features are referenced on the E&SCP and Site Restoration drawings. The MLV sites each have separate PCSM reports and drawing packages, which include proposed site drainage.

3.3 Proposed Riparian Buffer

The proposed Project is an oil and gas activity for which site reclamation or restoration is part of the permit authorization in PA Code Chapters 78, 86-90 and 102. The proposed activities will leave existing riparian buffers undisturbed to the extent practicable. Riparian buffers within the Project area will be protected and maintained according to Pennsylvania regulations discussed in Section 2.3.

A riparian conservation seed mix will be used to restore riparian buffers within 150 feet of HQ/EV watercourses and within 100 feet of other watercourses. This seed mix will be used to revegetate the entire LOD in riparian areas where slopes are less than 10%. Tree and shrub plantings will also occur in forested riparian buffers, where workspace outside of the 30-foot maintained ROW will be planted.

As detailed in the Riparian Buffer Waiver Request (ESCGP-3 Section 1-7), PennEast requests riparian buffer waivers in accordance with 25 PA Code §102.14(d)(2)(ii) for linear project impacts, waivers in accordance with 25 PA Code §102.14(d)(2)(vi) for minor impacts at aboveground facilities due to site characteristics, and approval of one riparian buffer impact as an allowable activity under 25 PA Code 102(f)(2)(i).

4.0 SUPERVISION AND INSPECTION

To effectively mitigate Project-related impacts, the approved E&SCP must be available on the site at all times and properly implemented in the field. Quick and appropriate decisions in the field regarding critical issues such as stream and wetland crossings, placement of erosion controls, trench dewatering, spoil containment, and other construction related items are essential.

To properly implement the E&SCP, it is planned that there will be a Chief Environmental Inspector as well as two Environmental Inspectors (EIs) for each spread. FERC third-party monitors will also review construction throughout the construction time period. The EI will have peer status with all other activity inspectors and will report directly to the Resident Engineer/ Chief Inspector who has overall authority on the construction spread. On smaller segments of the Project, the EI role may be carried out by the Resident Engineer/ Chief Inspector or a Craft Inspector, as designated by PennEast. The EI will have the authority to stop activities that violate the environmental conditions of the FERC's Orders (if applicable), other federal and state permits, or landowner requirements, and to order corrective action.

4.1 Responsibilities of the Environmental Inspectors

At a minimum, the EIs shall be responsible for:

1. Inspecting construction activities for compliance with the requirements of this E&SCP, the construction drawings, the environmental conditions of the FERC's Orders (if applicable), proposed mitigation measures, other federal or state environmental permits and approvals, and environmental requirements in landowner easement agreements;
2. Identifying, documenting, and overseeing corrective actions, as necessary to bring an activity back into compliance;
3. Verifying that the limits of authorized construction work areas and locations of access roads are visibly marked before clearing, and maintained throughout construction;
4. Verifying the location of signs and highly visible flagging marking the boundaries of sensitive resource areas, watercourses, wetlands, or areas with special requirements along the construction work area;
5. Identifying erosion/sediment control and stabilization needs in all areas;

6. Verifying that the location design of waterbars will not cause erosion or direct water into sensitive environmental resource areas, including cultural resources sites, wetlands, watercourses, and sensitive species habitat;
7. Verifying that dewatering activities are properly monitored and do not result in the deposition of sand, silt, and/or sediment into a sensitive environmental resource areas, including wetland or watercourse, cultural resource sites, and sensitive species habitats; stopping dewatering activities if such deposition is occurring and checking that the design of the discharge is changed to prevent reoccurrence; and verifying that dewatering structures are removed after completion of dewatering activities;
8. Verifying that subsoil and topsoil are tested in agricultural areas to measure compaction and determine the need for corrective action;
9. Advising the Chief Inspector when environmental conditions (such as wet weather or frozen soil) make it advisable to restrict or delay construction activities to avoid topsoil mixing or excessive compaction;
10. Checking restoration of contours and topsoil;
11. Verifying that the soils imported for agricultural or residential use have been certified as free of noxious weeds and soil pests, unless otherwise approved by the landowner;
12. Verifying that erosion controls are properly installed to prevent sediment flow into environmental resource (e.g., wetlands, watercourses, cultural resource sites, and sensitive species habitats) and onto roads and determining the need for additional erosion control devices;
13. Inspecting temporary erosion control measures at least:
 - a) On a daily basis in areas of active construction or equipment operation;
 - b) On a weekly basis in areas with no construction or equipment operation; and
 - c) Within 24 hours of each 0.5 inch of rainfall.

NOTE: This responsibility may be transferred to field operations after construction is complete but before restoration is successful;
14. Checking the repair of all ineffective temporary erosion control measures within 24 hours of identification, or as soon as conditions allow if compliance with this timeframe would result in greater environmental impacts;
15. Identifying areas that should be given special attention to verify stabilization and restoration after the construction phase;
16. Verifying that the Contractor implements and complies with PennEast's Preparedness, Prevention, and Contingency (PPC) Plan;
17. Keeping records of compliance with the environmental conditions of the FERC's Orders, proposed mitigation measures, and other Federal or state environmental permits during active construction and restoration; and
18. Verifying that locations for any disposal of excess construction materials for beneficial reuse comply with Section 9.5.3.2 and 9.5.3.3 of this E&SCP.
19. Taking new pre-construction photos at each of the crossing areas depicting the existing conditions. Preparing and maintaining a record of pre- and post- construction conditions of each stream crossing.

4.2 Environmental Training for Construction

Environmental training will be given to both PennEast personnel and contractor personnel whose activities will impact the environment during pipeline construction. The level of training will be commensurate with the type of duties of the personnel. All construction personnel from the chief inspectors, EIs, craft inspectors, contractor job superintendents to loggers, welders, equipment operators, and laborers will be given some form of environmental training. Note that PennEast will use FERC's third-party monitoring program during construction. In addition to the EIs, all other construction personnel are expected to play an important role in maintaining strict compliance with all permit conditions to protect the environment during construction. Training will be given prior to the start of construction and throughout the construction process, as needed, and will cover the following issues:

- The specifics of this E&SCP and the PPC Plan;
- Job or activity specific permit requirements;
- Company policies and commitments;
- Cultural resource procedures and restrictions;
- Threatened and endangered species restrictions; and
- Any other pertinent information related to the job.

Inspectors should be knowledgeable in the principles and practice of erosion and sediment controls and possess the skills to access conditions at the construction site that could impact stormwater quality and assess the effectiveness of any sediment and control measures selected to control the quality of stormwater discharges from the construction site.

5.0 DESCRIPTION OF EROSION AND SEDIMENT CONTROL BMPS

The erosion and sediment control BMPs for this earth disturbance activity have been planned to minimize the extent and duration of the proposed earth disturbance, to protect existing drainage features and vegetation, minimize soil compaction, and employ measures and controls that minimize the generation of increased runoff. Specific BMPs have been selected for the Project in order to achieve these broad goals. The location of each proposed BMP is shown on the E&SCP drawings.

Rock Construction Entrances

Rock construction entrances are specified on the E&SCP drawings to control sediment tracking from the construction site at egress points. The rock construction entrance detail is presented on Drawing 000-03-09-001 (Figure 1). In HQ/EV watersheds, rock construction entrances will be extended to a minimum 100-foot length, as referenced in the detail and shown in applicable locations on the E&SCP drawings.

Broad Based Dips

Broad-based dips may be used to direct runoff from active access roads to well-vegetated areas. Broad-based dips, unlike waterbars, are easily traversed by most construction equipment and typically require less upkeep to maintain their integrity. In HQ/EV watersheds, waterbar end treatment (sump with compost filter sock) should be utilized at the discharge end of the broad-based dip. The locations of broad-based dip installation are specified on the E&SCP plan view drawings and shall be in accordance with Drawing 000-03-09-001 (Figures 2A & 2B).

Sediment Barriers

Compost filter socks are specified on the E&SCP plan view drawings as a perimeter control to prevent silt-laden runoff from exiting the LOD. The compost filter sock detail and specifications are presented on Drawing 000-03-09-002 (Figures 5A, 5B, & 5C).

The J-hook sediment barrier configuration detail is presented on Drawing 000-03-09-003 (Figure 7). This configuration becomes necessary when sediment barrier is needed but cannot be oriented parallel to the contour. It is intended to intercept runoff from disturbed areas and capture some of the flow in a “J-hook” at the low end of each section of sediment barrier.

In locations where failure of a sediment barrier occurs due to concentrated flow, a rock filter outlet shall be installed in accordance with the detail presented on Drawing 000-03-09-003 (Figure 8).

Waterbars

Earthen waterbars (slope breakers) are specified on the E&SCP plan view drawings in hillside locations where it will be necessary to divert both upslope and disturbed area runoff to vegetated areas to help minimize accelerated erosion and sedimentation. A construction detail is provided on Drawing 000-03-09-003 (Figures 9 & 10). They are to be aligned such that runoff will be directed towards the downslope side of the disturbed area and avoid flowing back into the ROW. The construction detail calls for a sump with a compost filter sock barrier at the waterbar point of discharge.

Permanent waterbars within the ROW shall be left in place after permanent stabilization has been achieved. Waterbars will be removed from agricultural and residential areas. Maintenance of waterbars shall be provided until ROW has achieved permanent stabilization.

Trench Plugs

Trench plugs are specified on the E&SCP drawings to inhibit channelized flow which may occur in the trench when open during construction. Trench plugs shall remain in place during and after backfilling to prevent the trench from draining wetlands and/or changing the hydrology along the pipeline. The construction details are presented on Drawings 000-03-09-003 (Figure 12) and 000-03-09-004 (Figure 13).

Erosion Control Blanket

In accordance with the notes listed on Drawing 000-03-09-004 (Figures 14A, 14B, & 15), erosion control blanket is to be placed on disturbed areas within 50 feet of streams and on slopes steeper than 3H:1V. In HQ/EV watersheds, erosion control blanket is to be placed on disturbed areas within 100 feet of streams. Areas to be blanketed are indicated on the E&SCP plan view drawings.

Temporary Equipment Bridges

Temporary equipment bridges are specified on the E&SCP plan view drawings in locations where construction equipment will be crossing an existing stream channel (watercourse with a defined bed and bank). Temporary bridges shall be installed in accordance with the construction details provided on Drawing 000-03-09-005 (Figures 22 & 23).

Timber Mats

Timber mats are specified on the E&SCP plan view drawings in locations where construction equipment will be traveling through an existing wetland. Timber mats shall be installed in accordance with the construction details provided on Drawing 000-03-09-006 (Figures 25 & 26).

Pumped Water Filter Bags

In locations where the work area must be dewatered, filter bags may be used to filter water pumped from disturbed areas prior to discharging to surface waters. Compost filter sock shall be installed below filter bags located in HQ/EV watersheds, within 50 feet of any receiving surface water, or where a well-vegetated area is not available. Filter bags shall be installed in accordance with the construction detail provided on Drawing 000-03-09-008 (Figure 29).

Cleanwater Diversions

Temporary diversion channels are proposed to divert runoff from undisturbed upslope areas and convey the runoff around areas of earth disturbance within the pipeline ROW corridor. All temporary diversion channels will utilize a Filtrexx Diversion Sock (or approved equal). From the diversion sock, the channelized flow will outlet to a temporary pipe(s) (clean water) crossing, which is installed across the right-of-way, and discharge to a perforated HDPE pipe level spreader covered in stone. In this scenario, clean water leaving the level spreader will return to sheet flow downslope of the disturbed ROW.

All level spreaders are expected to meet the proposed 200-foot maximum length. All level spreader and slope pipe sizing is presented as part of the Clean Water Diversion summary table on E&SCP Drawing 000-03-09-010.

A downstream analysis of clean water diversion discharge point to the receiving water is not required for the following reasons. Velocities at the discharge of the level spreader are near zero since the stormwater will be discharged through the perforated pipe and minimum 4-inches of stone surrounding the perforated pipe. Once the discharge exits the orifices in the perforated pipe and trickles through the surrounding stone, it loses all its velocity and transforms into sheet flow. The discharge will be to a vegetated area and will ultimately follow the same drainage path as before the clean water diversion installation.

The clean water diversions collect clean stormwater above the disturbance, the slope pipe transports the clean water across the disturbance, and the level spreader connected to the slope pipe outlet discharges the clean water below the disturbance. The clean water diversions are being limited to 5 acres in accordance with the PADEP E&S Manual, except in several locations along the Blue Mountain Lateral and between mainline MPs 49 and 51, as noted in the Clean Water Diversion summary table. The limited project workspace and large drainage areas coming from Blue Mountain restrict the placement of additional slope pipes and level spreaders to break up the drainage areas.

The clean water diversions are temporary in nature and will remain in place from disturbance to after vegetation is established and BMPs are removed. The clean water diversions collect and discharge stormwater in the same drainage area and do not take stormwater from one drainage area and discharge to a different drainage area. The clean water diversions do not change cover types, resulting in no change to the calculated runoff rates or volumes, and the clean water diversion discharge is returned to sheet flow at the level spreader, a flow condition similar to or better than the existing flow condition.

The discharge areas of the clean water diversions will be monitored in accordance with the ESCGP-3 permit required inspection.

Discharges to existing waterways are proposed wherever possible. Refer to the Clean Water Diversion summary table for locations where temporary diversion channels discharge to a location other than a slope pipe/level spreader. As listed in the summary table, there are several locations where clean water is diverted to a watercourse, roadside ditch, or to overland. Conditions downslope of the level spreader have been checked for percent slope and cover type in order to verify no offsite erosion would occur at these locations.

All hydrologic calculations utilized to size the temporary diversion channels, slope pipes, and level spreaders were calculated using Standard E&S Worksheets #9 and #10, for time of concentration and rational equations respectively. The temporary diversion channels were sized utilizing flow rates and allowable shear stress.

Temporary diversion channels are designed using material specifications for North American Green (NAG) products. Shear stresses are analyzed for the proposed temporary diversion channels, which are expected to be in place for a maximum of 12 months. All NAG lining products specified in the Clean Water Diversion summary table meet a construction period of 12 months. It should be noted that published design shear strengths are valid for the design life of the lining. As a result, no decrease in shear strength is expected over the life of the proposed swale linings. Published design shear strengths and design lives for individual linings

are provided in Appendix 3. An iterative approach was used in the design of all proposed temporary diversion channels and liners, which was a function of Manning's 'n,' slope, and depth of water within the channel.

Drainage area mapping as well as Standard E&S Worksheets #9, #10, and #11 are provided for each clean water diversion in Appendix 2 (by county). Clean water diversion locations are specified on the E&SCP plan view drawings. Clean water diversions shall be installed in accordance with the construction details presented on Drawings 000-03-09-008 (Figures 33 & 34A) and 000-03-09-009 (Figures 34B & 34C).

5.1 Temporary and Permanent Revegetation

Revegetation requirements and procedures are presented in Section 9.6.2 of this E&SCP. As indicated on the drawings, disturbed areas are to be temporarily stabilized in accordance with regulatory agency requirements. Upon completion of construction activity, disturbed areas are to be permanently stabilized.

5.2 Protection of Sensitive and Special Value Features

During Project planning, the pipeline layout was field viewed to identify wetlands and streams. Where possible, the alignment was adjusted to minimize impacts. The opportunity to avoid impacts, however, is constrained by landowner preferences and construction requirements.

5.3 Minimize Earth Disturbance

Limiting the extents and duration of earth disturbance to that absolutely necessary to construct the proposed facility is a simple and the most effective BMP available. The LOD delineated on the E&SCP drawings has been established to restrict construction activities to the minimum area needed to effectively and efficiently construct the proposed facilities. In addition to limiting the extents of the proposed earth disturbance, construction activities have been planned to limit the duration of earth disturbance.

Installation of the pipeline will typically proceed from one end of the construction spread to the other in an assembly line or "mainline" fashion. The spacing between the individual crews responsible for each interdependent activity is based on anticipated rate of progress. Construction is sequenced to limit, to the extent possible, the amount and duration of open trench sections, to prevent excessive erosion or sediment flow into environmental resource areas.

5.4 General Erosion and Sediment Control Plan Requirements

The BMPs listed in this E&SCP shall be installed and maintained in accordance with FERC requirements and the PADEP E&S Manual. These BMPs shall be installed as shown prior to earth disturbance (including clearing and grubbing) within the drainage area of the BMP in question. Appropriate BMPs shall be provided for each stage of activity. Each BMP shall be kept functional until all earth disturbances within the drainage area are completed and a minimum vegetative cover (uniform 70% coverage of perennial vegetation over the entire disturbed area) has been achieved or other suitable permanent erosion protection has been installed.

At least 7 days prior to starting any earth disturbance activities (including clearing and grubbing), the owner and/or operator shall invite all contractors, the E&SCP preparer, the SR/PCSM Plan preparer, and a representative from the applicable PADEP regional office to an on-site preconstruction meeting.

Prior to commencement of any earth disturbance activity including clearing and grubbing, the owner and/or operator shall clearly delineate sensitive areas, riparian forest buffer boundaries, areas proposed for infiltration practices, the limits of clearing, and trees that are to be conserved within the Project site. These parties shall also install appropriate barriers where equipment may not be parked, staged, operated, or located for any purpose.

E&SC measures and facilities shall be installed and operational as indicated in the construction schedule prior to any earth moving activities. See the “Installing Temporary BMPs” in Section 9.5.2 of this E&SCP and on the E&SCP drawings. Control measures must be in place and operational at the end of each workday. Where it is possible, the disturbed area will be permanently stabilized immediately after the final earthmoving has been completed. For disturbed areas not able to be permanently stabilized, interim stabilization in the form of temporary seeding and mulching will be implemented. Until the site is permanently stabilized, all E&S measures must be maintained properly by the Contractor.

After permanent stabilization is achieved, temporary E&SC measures will be removed. Areas disturbed during removal of the controls must be stabilized immediately. For vegetated areas, permanent stabilization is defined as a uniform 70% perennial vegetative cover.

Minor modification to the approved E&SCP shall be noted on the E&SCP that is available at the site and initialed by the appropriate reviewing entity staff from PADEP and/or the County Conservation District. Minor changes to the E&SCP may include adjustments to BMPs and locations within the permitted boundary to improve environmental performance, prevent potential pollution, change in ownership or address, typographical errors and on-site field adjustments such as the addition or deletion of BMPs, or alteration of earth disturbance activities to address unforeseen circumstances.

Major modifications to the approved E&SCP involving new or additional earth disturbance activity other than those described as minor modifications above, and/or the addition of a discharge will require prior approval by the reviewing entity and may require the submittal of a new E&SCP.

6.0 PROJECT SITE RUNOFF PRIOR TO SITE RESTORATION

A primary component of this E&SCP was the design of erosion and sediment control BMPs to minimize and control accelerated erosion and minimize the generation of increased runoff. All proposed E&SC facilities have been designed per design guidance provided in the PADEP E&S Manual. Aside from road crossings, there are significant areas of existing pavement within the proposed limits of disturbance, such as commercial parking lots.

This linear Project traverses many watersheds. Runoff cannot be meaningfully or practically calculated without defining many discharge points and/or boundaries. Also, parameters describing runoff characteristics of disturbed construction zones, giving consideration to the attenuating effect of sediment barriers, trenches, and waterbars are neither readily available nor well-established. Therefore, runoff volume and peak discharge estimates have not been provided. Proposed BMPs were sized based on the maximum tributary drainage area anticipated during construction. Runoff volumes and rates for specific BMPs were calculated utilizing the methods recommended in the PADEP E&S Manual for that type of facility.

7.0 RECYCLING/DISPOSAL OF MATERIALS

Building materials and other construction site wastes must be properly managed and disposed of to reduce potential for pollution to surface and ground waters as per 25 PA Code § 102.4(b)(5)(xi). All building materials and wastes shall be removed from the site and recycled or disposed of in accordance with PADEP’s Solid Waste Management Regulations at 25 PA Code 260.1 et seq., 271.1 and 287.1 et. seq. No building materials, wastes, or unused building materials shall be burned, buried, dumped, or discharged at the site. No off-site disposal area has been identified as part of this E&SCP. Construction waste will be disposed of properly by the Contractor at a state-approved facility or recycled.

The Contractor will develop and implement procedures which will detail the proper measures for disposal and recycling of materials associated with or from the Project site in accordance with PADEP regulations. Construction wastes include, but are not limited to, excess soil materials, building materials, concrete wash water, and sanitary wastes that could adversely impact water quality. The Contractor will inspect the Project area weekly and properly dispose of all construction wastes. Measures will be planned and implemented for

housekeeping materials management and litter control. Wherever possible, re-useable wastes will be segregated from other waste and stored separately for recycling.

The Contractor shall be responsible for submitting an E&SCP for any borrow or waste areas required completing the work. Disposal locations for excess soil/rock waste will have appropriate BMPs implemented at the waste site. The disposal locations must be verified with the applicable state department to show compliance with wetland and floodplain regulations. If an off-site location is used for borrow or disposal, the contractor is responsible for developing and implementing an adequate E&SCP(s) and submitting the E&SCP(s) to PADEP or the applicable County Conservation District for review and approval. The Contractor must immediately stabilize the waste site upon completion of any stage or phase of earth disturbance activity at the waste site.

8.0 ANTIDegradation ANALYSIS

As identified in Section 2.2 of this narrative, the pipeline crosses siltation impaired waters as well as HQ/EV watercourses. The following antidegradation analysis has been prepared in accordance with 25 PA Code, §102.4(b)(6).

8.1 Nondischarge Alternatives

The proposed Project has been evaluated for nondischarge alternatives for compliance with state regulatory agency antidegradation requirements. Nondischarge alternatives are defined as environmentally sound and cost effective BMPs that individually or collectively eliminate the net change in stormwater volume, rate and quality for storm events up to and including the 2-year design storm when compared to the stormwater rate, volume and quality prior to the earth disturbance activities.

Various BMPs identified as nondischarge alternatives in the PADEP E&S Manual were considered and evaluated for implementation as part of the proposed activities. These alternatives were evaluated individually, and in various combinations, for their ability to minimize accelerated erosion and sedimentation during the earth disturbance activity in order to achieve no net change from pre-development to post-development volume, rate and concentration of pollutants in stormwater runoff. The following nondischarge alternatives are utilized or considered for implementation on this Project.

8.1.1 Alternative Routes

As part of the overall pipeline route evaluation process PennEast undertook a thorough routing study and Critical Issues Assessment (CIA). The routing study initially focused on the identification of a series of corridors that extended from Dallas Township in Luzerne County, PA to Hopewell Township in Mercer County, NJ. PennEast initially looked at existing utility corridors (natural gas, liquid pipeline, electric transmission, water, and sewer) to identify potential areas where the pipeline could parallel or be co-located within existing maintained ROWs. This assessment found that some of these ROWs had been encroached upon by residential and commercial development resulting in inadequate area for the staging and construction of an additional pipeline between the existing facilities and the neighboring developments. Where environmental impacts were not greater, PennEast has aligned the Project with as many existing utility corridors as possible, while maintaining a Project that can be safely constructed and operated.

PennEast worked with engineering and design professionals to avoid and/or minimize potential direct impacts to environmental resources. The proposed construction work area has been reduced at wetland, watercourse channel, watercourse floodway, and riparian crossings to minimize impacts wherever feasible. In addition, ROW agents have worked and continue to work with individual landowners to avoid sensitive features on properties and address their concerns.

In accordance with FERC requirements, PennEast selected the most reasonable and practicable alternative route that would maximize the use of co-location along existing corridors and cause the least amount of environmental damage. This was followed by a CIA screening of these corridors to determine which were most feasible from an environmental and engineering perspective. A selected 400-foot wide route corridor was then analyzed for a width of 200 feet on either side of the centerline for the desktop analysis. This distance was chosen in order to be able to adjust the pipeline alignment should constraints be identified during field surveys, and to allow adequate area for construction adjustments. The route was assessed using federal, state and regional secondary source databases to map out resources in proximity to the corridor. Once this mapping was completed, a meeting was held to electronically review the mapping on aerial photographs with engineers, wetland ecologists, wildlife biologists, cultural resource specialists and other professionals. The route was desktop evaluated along its entirety, and the centerline adjusted to avoid and/or minimize direct impacts to known resource areas.

8.1.2 Limited Disturbed Area

As discussed in Section 5.2, the LOD delineated on the E&SCP drawings has been established to restrict construction activities to the minimum area needed to effectively and efficiently construct the proposed facilities. This BMP is very effective at reducing the runoff volume rate, volume and concentration of pollutants in stormwater runoff. This BMP is “self-crediting” in that it automatically reduces the area to be treated and provides a corresponding reduction in stormwater impacts. However, it is not capable of addressing the impacts of the change in land cover associated with the proposed earth disturbance.

8.1.3 Limiting Extent and Duration of the Disturbance

This nondischarge alternative will be utilized to the extent possible on this project. The majority of the proposed earth disturbance will occur in the early activities of the construction sequence of the Project, including clearing and grading, with a much smaller earth disturbance occurring during site restoration. As described in Section 9.5 Construction Sequence, and throughout this E&SCP, the duration and extent of earth disturbances will be limited to the current construction activity to be completed. Temporary or permanent stabilization is to occur as soon as possible upon completion of each activity. This BMP is very effective at reducing the concentration of pollutants in stormwater runoff and reducing the impact of bare earth on runoff volume and rate. However, it is not capable of addressing the impacts of the long-term change in land cover associated with the proposed earth disturbance.

8.1.4 Riparian Buffers and Riparian Forest Buffers

The feasibility of protecting, converting, or establishing a riparian forest buffer meeting the requirements of 25 PA Code §102.14 was analyzed for the proposed Project. Given the linear nature of the proposed Project, temporary impacts within riparian buffers is unavoidable. To mitigate for temporary disturbances within riparian buffers, PennEast has reduced workspace within riparian buffers to the extent practicable and will implement the BMPs detailed in this E&SCP. PennEast will employ multiple measures to reduce the extent and duration of Project impacts to riparian communities which include, but are not limited to the following:

- PennEast will limit the removal of stumps in wetlands and along watercourses to the trench line and what is necessary to safely install the equipment crossings to promote natural revegetation and surface stabilization;
- PennEast will utilize a riparian conservation seed mix within 150 feet of HQ/EV watercourses and within 100 feet of other watercourses. This seed mix will be used to revegetate the entire LOD in riparian areas where slopes are less than 10%. Tree and shrub plantings will also occur in forested riparian buffers, where all workspace outside of the 30-foot maintained ROW will be planted.

PennEast will implement BMPs to minimize riparian impacts and protect existing forested riparian buffers to the extent practicable. However, to manage the pipeline’s integrity during Project operation, PennEast must maintain a 30-foot wide tree free corridor over the pipeline; therefore, the entire forested riparian buffer cannot be replanted. Furthermore, because PennEast does not own the property on which the proposed earth disturbance will occur, PennEast cannot, without landowner permission, place deed restrictions or conservation easements to protect, convert, or establish a riparian buffer or riparian forest buffer to satisfy the antidegradation requirements of §102.4(b)(6) for the proposed earth disturbances.

As detailed in the Riparian Buffer Waiver Request (ESCGP-3 Section 1-7), PennEast requests riparian buffer waivers in accordance with 25 PA Code §102.14(d)(2)(ii) for linear project impacts, waivers in accordance with 25 PA Code §102.14(d)(2)(vi) for minor impacts at aboveground facilities due to site characteristics, and approval of one riparian buffer impact as an allowable activity under 25 PA Code 102(f)(2)(i).

8.1.5 Treatment Train Combination of BMPs

A combination of cost-effective and environmentally sound BMPs were considered for installation in a “treatment train” that collectively eliminate the net change in stormwater volume, rate and quality from pre-development to post-development conditions. The primary metric prohibiting the proposed Project from achieving non-discharge alternatives is the additional runoff volume generated by the earth disturbance necessary for the proposed activities. Permanent removal of runoff volume from the design storm hydrograph during earth disturbance phases was excluded from the available design alternatives due to the elevated sediment loadings expected during this stage of site construction. The “treatment train” approach was determined to be infeasible as a non-discharge alternative.

As demonstrated above, there is no combination of nondischarge alternative BMPs that enable the earth disturbance activities to achieve no net change from pre-development to post-development volume, rate and concentration of pollutants in stormwater runoff up to and including the 2-year/24-hour storm. In the absence of feasible nondischarge alternatives, Antidegradation Best Available Combination of Technologies (ABACT) BMPs will be utilized to address antidegradation requirements for the Pennsylvania portion of the Project.

8.2 Antidegradation Best Available Combination of Technologies

As demonstrated in the previous section, nondischarge alternatives do not exist for the proposed Project. Environmentally sound and cost-effective ABACT BMPs will be utilized to demonstrate that any change in PA stormwater runoff rate, volume, or quality will maintain and protect the existing quality and water uses of receiving surface waters and preserve existing baseflow. The E&SCP shows the locations of all planned ABACT BMPs and details for construction of these facilities. The following is a summary of the combination of ABACT BMPs that have been incorporated into the site design and the features that make them ABACT:

8.2.1 Site Access

- 100-foot long Rock Construction Entrance(s)

8.2.2 Sediment Barriers

- Compost filter socks will be utilized for all perimeter control needs

8.2.3 Stabilization

- Disturbed areas immediately stabilized upon completion, or temporary cessation, of earth disturbance activity

- Disturbed areas stabilized with erosion control blanket within 100 feet of special protection surface waters, within 50 feet of all other receiving surface waters, and on slopes 3H:1V or steeper.

9.0 CONSTRUCTION TECHNIQUES FOR NATURAL GAS PIPELINES

9.1 Typical ROW Requirements

During Project review, conditions evaluated include topography, soils, bedrock, boulders, wetlands, and watercourses, as well as proximity to existing roads, railroads, and residences. PennEast has considered these noted conditions along with machinery requirements needed for safe pipeline and support facility installation. Minimum size and area requirements for worker safety involving construction activities established by the U.S. Department of Transportation (DOT) and Occupational Safety and Health Administration (OSHA) were also considered. Under certain conditions, additional workspace may be necessary to maintain safe practices in specific locations and would extend beyond the nominal 100-foot corridor.

The Project requires a 50-foot permanent ROW and an approximately 50-foot temporary construction workspace for a nominal 100-foot-wide construction corridor. This corridor width is based on construction conditions of similar projects within Pennsylvania. From the center of the pipe trench, the spoil side of the construction ROW is proposed to be 35 feet. This footprint will serve as the primary spoil storage area. Thus, the working side of the construction work space will typically be 65 feet wide from the center of the pipe trench to the edge of the ROW and will serve to accommodate trench excavation, bank sloping, and safe equipment mobilization. Agricultural areas with full topsoil segregation will require an additional 25 feet, totaling a 125-foot-wide construction corridor.

In other limited, non-wetland locations, the construction ROW width may be expanded by up to 50 feet without approval from the FERC for the following situations:

1. To accommodate full construction work space topsoil segregation;
2. To maintain safe construction where topographic conditions (i.e., side-slopes) or soil limitations exist; and
3. For truck turn-arounds where no reasonable alternative access exists in limited, non-wetland or non-forested areas.

Use of these limited areas is subject to landowner approval and compliance with all applicable survey, mitigation, and reporting requirements.

9.2 Access Roads

To the extent practicable, existing public and private road crossings will be used as the primary means to access the ROW. Additional access points will be necessary beyond those available by use of existing public roads. Preliminarily, PennEast has identified 66 access roads for use during construction of the Pennsylvania portions of the Project. These Pennsylvania access roads include a total length of approximately 30 miles. These access roads include use of 35 existing roads and construction or enhancement of 18 partially existing access roads. The following access roads are identified by County:

- 33 access roads – Luzerne County, Pennsylvania
- 18 access roads – Carbon County, Pennsylvania
- 1 access road – Monroe and Carbon Counties, Pennsylvania
- 14 access roads – Northampton County, Pennsylvania

Temporary access roads sited outside an existing roadway will require temporary improvements and will require E&S controls as shown on the plans. Permanent access roads may require permanent improvements

(e.g. permanent grading, placement of impervious cover) and are included as part of the PCSM design. At all access roads, selective tree limb cutting and placement of temporary stone during construction may be needed. ATWS will be located adjacent to several access roads for temporary vehicle parking, vehicle turn-out passing areas, and/or staging of minor supplies (e.g., hay bales for erosion control activities). Temporary access roads (TARs) for construction will be restored to original conditions upon project completion. Landowner permission will be obtained for all proposed permanent access roads (PARs).

9.3 Wareyards

Wareyards are required for storing and staging equipment, pipe, fuel, oil, pipe fabrication, and other construction related materials. PennEast has identified 7 wareyards in Pennsylvania for use during construction of the Project. The total area of the Pennsylvania wareyards will be approximately 20.1 acres. A Highway Occupancy Permit (HOP) will be acquired from the Pennsylvania Department of Transportation for access to the wareyards if required.

The Contractor shall perform the following measures at wareyards:

1. Strip and segregate topsoil in agricultural lands;
2. Install erosion control structures as directed by the EI, outlined in this E&SCP, or identified on the construction drawings, and maintain them throughout construction and restoration activities;
3. Implement and comply with the PPC Plan; and
4. Restore and revegetate all disturbed areas in accordance with the measures outlined in this E&SCP and as directed by the EI.

9.4 Off-ROW Disturbance

With certain exceptions, which are required in order to comply with FERC Plan and Procedures, all construction activities are restricted to within the limits identified on the construction drawings (exceptions include the installation of waterbars, installation of energy-dissipating devices, installation of dewatering structures, and drain tile repair which are subject to applicable survey requirements). However, in the event that off-ROW disturbance occurs, the following measures will be implemented:

1. The EI will immediately report the occurrence to the Chief Inspector and ROW Agent;
2. The conditions that caused the disturbance will be evaluated by the Chief Inspector and the EI, and they will determine whether work at the location can proceed under those conditions; and
3. If deemed necessary by the Chief Inspector and EI, one or more of the following corrective actions will be taken: immediate restoration of the original contours, seeding and mulching of the disturbed area, and/or installation of erosion control devices. PennEast's Environmental Construction Permitting Department will be notified as soon as practical.

9.5 Construction Sequence

Natural gas pipelines are installed using conventional overland buried pipeline construction techniques. These activities are necessary for the installation of a stable, safe, and reliable transmission facility consistent with DOT requirements and regulations. This section provides an overview of the equipment and operations necessary for the installation of a natural gas pipeline, describes potential impacts that may occur from each operation, and identifies the measures that will be implemented to control these potential impacts. This section also discusses in detail the erosion and sediment control techniques that apply to each construction activity including clearing, grading, trenching, lowering-in of pipe, backfilling, and hydrostatic testing. ROW

restoration will be addressed in Section 9.6. The activities listed below are normally performed in the following sequence:

- Survey and flag the pipeline route, limits of disturbance, foreign line crossings, wetlands and other sensitive areas;
- Installing temporary erosion and sediment controls;
- Clearing the construction work area (CWA);
- Grading the CWA to establish safe work space; installing additional erosion and sediment controls;
- Installing temporary waterbars/best management practices;
- Trenching/excavating the trench;
- Pipe stringing and bending;
- Welding, weld inspection and installing weld coating;
- Trench dewatering;
- Lowering the pipe into the trench; installing trench plugs;
- Backfilling the trench;
- Hydrostatic testing of pipe; and
- Permanent stabilization and restoration;
- Demobilization and site cleanup;
- Post-construction monitoring.

Obstacles to the mainline technique are often encountered and are not considered to be out of the ordinary. These obstacles, which include side hill crossings, rock, wetlands, streams, roads, and residential areas, do not normally interrupt the assembly line flow.

9.5.1 Clearing

Clearing operations will include the removal of vegetation within the CWA. Various clearing methods will be employed depending on tree size, contour of the land, and the ability of the ground to support clearing equipment. Vegetative clearing will either be accomplished by hand or by cutting equipment. The following procedures will be standard practice during clearing:

1. Prior to beginning the removal of vegetation, the limits of clearing will be established and identified in accordance with the construction drawings;
2. All construction activities and ground disturbance will be confined to within the limit of disturbance shown on the construction drawings;
3. Clearly mark and protect trees to be saved as per landowner requests or as otherwise required;
4. All brush and trees will be felled into the CWA to minimize damage to trees and structures adjacent to the CWA. Trees that inadvertently fall beyond the edge of the CWA will be immediately moved onto the CWA and disturbed areas will be immediately stabilized;
5. Trees will be chipped or cut into lengths identified by the landowner and then stacked at the edge of the CWA or removed;
6. Brush and limbs may be disposed of in one or more of the following ways depending on local restrictions, applicable permits, construction Line List stipulations, and landowner agreements:
 - a) Stockpiled along the edge of the CWA or in staging areas or;
 - b) Chipped, spread evenly across the CWA in upland areas; and plowed in; or
 - c) Hauled off site or;
 - d) Blown off-site with landowner approval.

7. Existing surface drainage patterns will not be altered by the placement of timber or brush piles at the edge of the construction ROW.

9.5.1.1 Thermal Impacts

On this Project, the principal source of thermal impacts would be related to disturbance of vegetative cover. The following provisions are included in this E&SCP to avoid, minimize, or mitigate potential pollution from thermal impacts:

- Section 11.2.3 requires minimal disturbance within 50 feet of streams. Section 11.2.6 requires immediate revegetation (or mulch in non-germinating season) when earth disturbing activities are complete.
- Section 11.2.3 limits removal of vegetation, especially tree cover, to only that necessary for construction.

The permanent pipeline ROW may be mowed periodically and woody vegetation may be trimmed to allow safe pipeline operation. Some tree cover may be permanently removed in wooded areas. As discussed in Section 8.1.4, PennEast will replant forested riparian buffers, and the canopy is anticipated to expand over the pipeline ROW to mitigate long-term thermal impacts.

9.5.2 Installing Temporary BMPs

BMPs, which are temporary erosion controls intended to minimize the flow of sediment and to prevent the deposition of sediments beyond approved workspaces or into sensitive resources, shall be installed following vegetative clearing operations. They may be constructed of materials such as compost filter socks, staked straw bales, compacted earth (e.g., drivable berms across travel lanes), sandbags, HDPE piping, riprap and stone, jute matting, timber mats, wood stakes, clay, bentonite, synthetic foam, concrete, or an equivalent material as identified by the EI. Where permitted by regulatory agencies, hay bales may be used in lieu of straw bales with the following restrictions: hay bales shall not be used for mulching and the Contractor is responsible for their removal and disposal.

Install temporary BMPs at the base of slopes adjacent to road crossings and at watercourse and wetland crossings in accordance with Section 9.5.4.

1. Do not stake or trench in place straw bales used on equipment bridges or on mats across the travel lane.
2. Inspect temporary BMPs daily in areas of active construction to verify proper functioning and maintenance. In other areas, BMPs will be inspected and maintained on a weekly basis throughout construction, and within 24 hours following storm events.
3. Maintain all temporary BMPs in place until permanent revegetation measures are successful or the upland areas adjacent to wetlands, watercourses, or roads are stabilized.
4. Remove temporary BMPs from an area when replaced by permanent erosion control measures or when the area has been successfully restored as specified in Section 14.1.

9.5.3 Grading

The construction ROW will be graded as needed to provide a level workspace for safe operation of heavy equipment used in pipeline construction. The following procedures will be standard practice during grading.

9.5.3.1 Topsoil Segregation

Topsoil segregation methods will be used in all residential areas and when the construction CWA is wider than 30 feet in cultivated or rotated croplands, managed pastures, hayfields, and other areas at the landowner's or land managing agency's request.

1. Prevent the mixing of topsoil with subsoil by stripping topsoil from either the full work area or from the trench line and subsoil storage area (ditch plus spoil side method) as stipulated in the Construction Contract or Line List.
2. Segregate at least 12 inches of topsoil in deep soils with more than 12 inches of topsoil. In soils with less than 12 inches of topsoil, make every effort to segregate the entire topsoil layer.
3. Where topsoil segregation is required, maintain separation of salvaged topsoil and subsoil throughout all construction activities.
4. For wetlands, segregate the top 12 inches of topsoil within the ditchline, except in areas where standing water is present or soils are saturated.
5. Leave gaps in the topsoil piles for the installation of temporary interceptor dikes to allow water to be diverted off CWA.
6. Topsoil replacement (i.e., importation of topsoil) may be used as an alternative to topsoil segregation if approved by the landowner and PennEast.
7. Never use topsoil for padding the pipe, constructing temporary slope breakers or trench plugs, improving or maintaining roads, or as a fill material.
8. Stabilize topsoil piles and minimize loss due to wind and water erosion with use of BMPs, mulch, temporary seeding, tackifiers, or functional equivalents, where necessary.

9.5.3.2 Tree Stump Removal and Disposal

1. Remove tree stumps in upland areas along the entire width of the permanent ROW to allow adequate clearance for the safe operation of vehicles and equipment. Stumps within the CWA will be removed or ground to a suitable height that will allow the safe passage of equipment, as stipulated by the Chief Inspector or EI.
2. Dispose of stumps by one of the following methods, pending approval by the Chief Inspector and the landowner, and in accordance with regulatory requirements:
 - Moved to PennEast-approved off-site location (except in wetlands and agricultural areas);
 - Chipped on-site. Removed from ROW and hauled off site or blown off-site with landowner approval. Chipped material not removed from the site may be spread across the upland areas of the CWA in a manner that will not inhibit revegetation or broadcast into off-ROW and stable areas. Wood chips will not be left within agricultural lands, wetlands, or within 50 feet of wetlands. Wood chips will not be stockpiled in a manner that they may be transported into a wetland.
 - Ground to grade in wetlands, excess chips must be removed from wetlands for reuse on-site or properly disposed off-site.

9.5.3.3 Rock Disposal

When rock is encountered it will be broken up either by drilling, pneumatic hammer or blasting. If blasting is required PennEast will conduct pre-blast surveys with landowner permission to assess the condition of

structures, wells, springs and utilities within 150 feet. Blasting will follow all procedures and safety measures according to PennEast's Blasting Plan.

Rock (including blast rock) will be disposed of in one or more of the following ways:

1. Buried on the ROW or in approved construction work areas either in the ditchline or as fill during grade cut restoration in accordance with the construction specifications. In cultivated/agricultural lands, wetlands, and residential areas, rock may only be backfilled to the top of the existing bedrock profile;
2. Windrowed per written landowner agreement with PennEast;
3. Removed and disposed of at a PennEast approved site.

9.5.4 Installing Temporary Waterbars

Temporary waterbars, which are temporary erosion control measures intended to reduce runoff velocity and divert water off the CWA, shall be installed following grading operations. The waterbars are to be installed on all disturbed areas as necessary to avoid excessive erosion. Temporary waterbars will be constructed of materials such as compacted soil and staked compost filter sock.

Waterbars must be installed on either side of watercourses and wetlands and upslope of road crossings at the locations shown on the E&SCP plan view drawings or as determined by the EI (closer spacing should be used if necessary).

9.5.5 Trenching

The trench centerline will be staked after the CWA has been prepared. In general, a trench will be excavated to a depth that will permit burial of the pipe with a minimum of 3 feet of cover, 4 feet of cover in agricultural areas and 5 feet beneath watercourses. Overland trenching may be accomplished using a conventional backhoe or a rotary wheel-ditching machine. In shale or rocky areas where the use of the wheel-ditching machine is limited, a tractor-drawn ripper will be employed to break and loosen hard substratum material. In areas where rock cannot be ripped, drilling and blasting may be required. A backhoe may then be used to remove rock and soil from the ditch.

The following procedures will be standard practice during ditching:

1. Flag drainage tiles damaged during ditching activities for repair; and
2. Place spoil at least 10 feet from the edge of watercourses. Spoil will be contained with erosion and sediment control barriers (BMPs) to prevent spoil materials or heavily silt-laden water from transferring into watercourses and wetlands or off of the CWA.

9.5.6 Trench Dewatering

Trench dewatering may be periodically required along portions of the proposed pipeline prior to and/or subsequent to installation of the pipeline to remove collected water from the trench.

1. Trench dewatering will be conducted (on or off the CWA) in such a manner that does not cause erosion and does not result in silt-laden water flowing into any watercourse or wetland.
2. The intakes of the hoses used to withdraw the water from the trench will be elevated and screened to minimize pumping of deposited sediments.
3. Water may be discharged into areas where adequate vegetation is present adjacent to the CWA to function as a filter medium.

4. Where vegetation is absent or in the vicinity of watercourse/ wetland areas, water will be pumped into a filter bag or through a structure composed of BMPs. When using filter bags, secure the discharge hose to the bag with a clamp.
5. Remove dewatering structures as soon as practicable after the completion of dewatering activities.

9.5.7 Pipe Installation

The following sections describe how the pipe will be installed for the Project.

9.5.7.1 Stringing and Bending

Following trench excavation, pipe sections will be delivered to the construction site by truck or tracked vehicle and strung out along the trench. Individual pipe sections will be placed on temporary supports or wooden skids and staggered to allow room for work on the exposed ends. Certain pipe sections will be bent, as necessary, to conform to changes in slope and direction of the trench.

9.5.7.2 Welding and Weld Inspection

Once the bending operation is complete, the pipe sections will be welded together on supports using approved welding procedures that comply with Company welding specifications. After welding, the welds will be inspected radiographically or ultrasonically to check their structural integrity.

9.5.7.3 Lowering-in

Lowering-in consists of placing the completed pipeline sections into the trench where a tie-in weld will be made. Lowering-in is usually accomplished with two or more sideboom tractors acting in unison and spaced so as not to buckle or otherwise damage the pipe. The pipeline will be lifted from the supports, swung out over the trench, and lowered directly into the trench. The equipment uses a “leap frogging” technique requiring sufficient area to safely move around other tractors within the CWA to gain an advanced position on the pipe.

9.5.8 Backfilling

Backfilling consists of covering the pipe with the earth removed from the trench or with another fill material hauled to the site when the existing trench spoil is not adequate for backfill. Backfilling will follow lowering-in of the pipeline as close as is practical.

In areas where the trench bottom is irregularly shaped due to consolidated rock or where the excavated spoil materials are unacceptable for backfilling around the pipe, padding material may be required to prevent damage to the pipe. This padding material will generally consist of sand or screened spoil materials from trench excavation.

1. Under no circumstances shall topsoil be used as padding material.
2. Excess rock, including blast rock, may be used to backfill the trench to the top of the existing bedrock profile in accordance with Company specifications. Rock that is not used to backfill the trench will be treated as described in Section 9.5.3.3.
3. Any excess material will be spread within the CWA in upland areas and land contours will be roughed-in to match adjacent topography.
4. The trench may be backfilled with a crown over the pipe to compensate for compaction and settling. Openings will be left in the completed trench crown to restore pre-construction drainage patterns. Crowning shall not be used in wetland areas.

9.5.8.1 Trench Plugs

Trench plugs are intended to slow subsurface water flow and erosion along the trench and around the pipe in sloping terrain. Trench plugs will be constructed with clay, bentonite, synthetic foam, or concrete filled sacks. Where trench slope is greater than 100%, cement filled bags shall be used. Topsoil shall not be used to construct trench plugs. Trench plugs, which are used in conjunction with waterbars (slope breakers), shall be installed at the locations shown on the E&SCP alignment sheet drawings or as determined by the EI. Permanent impervious trench plugs are required for all waterbody and wetland crossings, as well as up slope from roadway and railroad cut slopes.

9.5.9 Hydrostatic Testing

Once the pipeline is completed and before it is placed into service, it will be hydrostatically tested for structural integrity in accordance with FERC regulations. Hydrostatic testing involves filling the pipeline with clean water and maintaining a test pressure in excess of normal operating pressures. The testing procedure involves filling the pipeline with test water, performing the pressure test, and disposing of the test water.

1. Withdrawing water from any watercourse, spring, well, or other source is prohibited. Water must be sourced from a water supplier with an existing docket/approval from the Susquehanna River Basin Commission (MP 0.0R1 - MP 14.4) or the Delaware River Basin Commission (MP 14.4 - MP 68.2R3).
2. Use only the water sources identified in the clearance package/permit book.
3. Locate hydrostatic test manifolds outside wetlands and riparian areas to the greatest extent practicable.
4. Discharge of hydrostatic test water, drilling mud, or other wastewater is prohibited. Wastewater must be disposed of at an approved facility.
5. Use only approved disposal locations identified in the clearance package/permit book.
6. Transfer of water between the Susquehanna River Basin (MP 0.0R1 - MP 14.4) and the Delaware River Basin (MP 14.4 - MP 68.2R3) is prohibited.

9.6 CWA Restoration and Final Cleanup

Restoration of the CWA will begin after pipeline construction activities have been completed. Restoration measures include the re-establishment of final grades and drainage patterns as well as the installation of permanent erosion and BMPs to minimize post-construction erosion. Residential areas will be restored in accordance with Section 10.3.3. Property shall be restored as close to its original condition as practical unless otherwise specified by the landowner. Any restoration activities which entail a post construction change in land use shall be evaluated for post construction stormwater impacts, approved by PA DEP and/or the appropriate conservation district, and may require the installation of PCSM BMPs to manage stormwater rate, volume and water quality impacts.

1. The Contractor shall make every reasonable effort to complete final cleanup of an area (including final grading and installation of permanent erosion control structures) within 20 days after backfilling the trench in that area (within 10 days in residential areas). If seasonal or other weather conditions prevent compliance with these time frames, maintain temporary erosion controls (temporary waterbars, BMPs, and mulch) until conditions allow completion of cleanup.
2. The disturbed CWA will be seeded within 4 working days of final grading, weather and soil conditions permitting.
3. If final cleanup and seeding cannot be completed and is delayed until the next recommended growing season, the winter stabilization measures in Section 9.6.4 shall be followed.

4. Grade the CWA to pre-construction contours.
5. Spread segregated topsoil back across the graded CWA to its original profile.
6. Remove excess rock from at least the top 12 inches of soil to the extent practical in all rotated and cultivated cropland, hayfields, managed pastures, residential areas, and other areas at the landowner's request. The size, density, and distribution of rock on the CWA should be similar to adjacent areas not disturbed by construction. The landowner or land management agency may approve other provisions in writing.
7. A travel lane may be left open temporarily to allow access by construction traffic if the temporary erosion control structures are installed, regularly inspected and maintained. When access is no longer required, the travel lane must be removed and the CWA restored.
8. Remove all construction debris from all construction work areas unless the landowner or land managing agency approves leaving materials onsite for beneficial reuse, stabilization, or habitat restoration.
9. Remove temporary BMPs when replaced by permanent erosion control measures or when revegetation is successful per permit requirements.

9.6.1 Permanent Erosion Control

9.6.1.1 Permanent Waterbars

Permanent waterbars are intended to reduce runoff velocity, divert water off the CWA, and prevent sediment deposition into sensitive resources. Permanent waterbars will be constructed of compacted soil. Stone or some functional equivalent may be used when directed by the EI.

1. Install permanent waterbars across the entire width of the permanent ROW in all areas, except cultivated areas and lawns, at the locations shown on the construction drawings or as directed by the EI. Installation shall be in conformance with Drawing 000-03-09-003 (Figures 9 & 10).
2. Install permanent waterbars across the entire width of the permanent ROW at all watercourse and wetland crossings, and at the base of slopes adjacent to roads. When the permanent ROW parallels an existing utility ROW, permanent waterbars may be installed to match existing waterbars on the adjacent undisturbed pipeline ROW.
3. Construct waterbars with a 2 to 4 percent outslope to divert surface flow to a stable vegetative area without causing water to pool or erode behind the interceptor dike. In the absence of a stable vegetative area, install an energy-dissipating device at the end of the interceptor dike.
4. Install a rock-lined drainage swale along the ROW with restricted drainage features when directed by the EI.
5. On slopes greater than 30 percent, install waterbars with erosion control blanket on the swale side.

9.6.1.2 Erosion Control Blanket

1. Install erosion control fabric at waterbar outlets and drainage swales as necessary or as directed by the EI.
2. Install erosion control blanket or matting on slopes greater than 30 percent, on disturbed areas within 50 feet of streams, and within 100 feet of streams in HQ and EV watersheds. Anchor the erosion control blanket or matting with staples or other appropriate devices in accordance with the manufacturers' recommendations.

3. The EI will direct the installation of high-velocity erosion control blanket on the swale side of permanent waterbars.

9.6.2 Revegetation and Seeding

Successful revegetation of soils disturbed by Project-related activities is essential. Seeding will be conducted using the following requirements:

1. Fertilize and add soil pH modifiers as appropriate in residential and agricultural areas. Incorporate recommended soil pH modifier and fertilizer into the top 2 inches of soil as soon as practical after application;
2. Seed all disturbed areas within 4 working days of final grading, weather and soil conditions permitting;
3. Prepare seedbed in disturbed areas to a depth of 3 to 4 inches to provide a firm seedbed. When hydroseeding, scarify the seedbed to facilitate lodging and germination of seed;
4. Seed disturbed areas in accordance with the seed mixes, rates, and dates presented on Drawing 000-01-01-003C, except in upland areas where landowners or a land management agency may request alternative seed mixes. Seeding is not required in cultivated croplands unless requested by the landowner.
5. Perform seeding of permanent vegetation within the recommended seeding dates as outlined in the E&SCP. If seeding cannot be done within those dates, use appropriate temporary erosion control measures discussed in Section 9.5.2 and perform seeding of permanent vegetation at the beginning of the next recommended seeding season. Dormant seeding or temporary seeding of annual species may also be used, if necessary, to establish cover, as approved by the Environmental Inspector. Mulch in accordance with Section 9.6.3. Lawns may be seeded on a schedule established with the landowner;
6. Base seeding rates on Pure Live Seed (PLS). Use seed within 12 months of seed testing;
7. Treat legume seed with an inoculant specific to the species using the manufacturer's recommended rate of inoculant appropriate for the seeding method (broadcast, drill, or hydroseeding); and
8. Uniformly apply and cover seed in accordance with the E&SCP. In the absence of any recommendations from the local soil conservation authorities, landowner, or land managing agency to the contrary. A seed drill equipped with a cultipacker is preferred for application, but broadcast or hydroseeding can be used at double the recommended seeding rates. Where seed is broadcast, firm the seedbed with a cultipacker or roller after seeding. In rocky soils, or where site conditions may limit the effectiveness of this equipment, other alternatives may be appropriate (e.g., use of a chain drag) to lightly cover seed after application, as approved by the EI.

9.6.3 Mulch

Mulch is intended to stabilize the soil surface and shall consist of weed-free straw or hay, wood fiber hydromulch, erosion control blanket, or some functional equivalent as approved by the EI and Chief Inspector. Hay shall not be used for mulch.

1. Mulch all disturbed upland areas (except cultivated cropland) **before** seeding if:
 - a) Final cleanup, including final grading and installation of permanent erosion control measures, is not completed in an area within 20 days after the trench in that area is backfilled (10 days in residential areas); or

- b) Construction or restoration activity is interrupted for extended periods, such as when seeding cannot be completed due to seeding period restrictions.

NOTE: When mulching before seeding, increase mulch application on all slopes within 100 feet of watercourses and wetlands to a rate of 3 tons/acre of straw or equivalent.

1. Apply mulch on all slopes (except in cultivated cropland) concurrent with or immediately after seeding, where necessary, to stabilize the soil surface and to reduce wind and water erosion. Spread mulch uniformly over the disturbed areas at a rate of 3 tons/acre of straw or equivalent.
2. Mulch with woodchips only under the following conditions with prior approval from PennEast and the EI:
 - a) Do not use more than 1 ton/acre; and
 - b) Add the equivalent of 11 lbs/acre available nitrogen (at least 50 % of which is slow release).
3. Verify that mulch is anchored to minimize loss by wind and water. Anchoring may be achieved by wet soil conditions (when approved by the EI), mechanical means, or with liquid mulch binders.
4. When anchoring with liquid mulch binders, use rates recommended by the manufacturer. **Do not use liquid mulch binders within 100 feet of wetlands and watercourses**, except where product is certified environmentally non-toxic by the appropriate state or federal agency or independent standards-setting organization.
5. Do not use synthetic monofilament mesh/netted erosion control materials in areas designated as sensitive wildlife habitat, unless the product is specifically designed to minimize harm to wildlife. Biodegradable or photodegradable backed erosion control blankets will be used in these areas as needed. Anchor the erosion control blanket with staples or other appropriate devices.

9.6.4 Winter Stabilization

In the event that restoration occurs too late in the year for cleanup activities to adequately proceed, the following procedures will be implemented along the disturbed CWA at those locations until final restoration measures can be completed.

1. Install permanent interceptor dikes at specified intervals on all slopes, or as directed by the EI;
2. Install temporary BMPs adjacent to stream and wetland crossings, as well as other critical areas;
3. Seed and mulch the disturbed areas and seed segregated topsoil piles in accordance with the E&SCP; and Remove flumes from watercourse crossings to reestablish natural stream flow.

9.7 Unauthorized Vehicle Access to ROW

PennEast will offer to install and maintain measures to control unauthorized vehicle access to the ROW based on requests by the manager or owner of forested lands. These measures may include:

- Signs;
- Fences with locking gates;
- Slash and timber barriers, pipe barriers, or a line of boulders across the permanent ROW; or
- Conifers or other appropriate shrubs with a mature height of 4 feet or less across the permanent ROW.

10.0 SPECIAL CONSTRUCTION METHODS

PennEast will utilize the following specialized construction procedures for agricultural areas, road crossings, and residential areas along the Project. The Project construction drawings, Line Lists, and Construction Contract will indicate the locations where specialized construction methods will be used.

10.1 Agricultural Areas

10.1.1 Drain Tiles

1. Attempt to locate existing drain tiles and irrigation systems and also determine (via landowner) future drain tiles that are likely to be installed within 3 years of the authorized construction.
2. Develop procedures for constructing through drain tiled areas, maintaining irrigation systems during construction, and repairing drain tiles and irrigation systems after construction.
3. Engage qualified drain tile specialists, as needed, to conduct or monitor repairs to drain tile systems affected by construction. Use drain tile specialist from the Project area, if available.
4. Repair damaged drain tiles to their original condition. Filter-covered drain tiles may not be used unless the local soil conservation authorities and the landowner agrees in writing prior to construction.
5. Verify that the depth of cover over the new pipeline is sufficient to avoid interference with drain tile systems (existing or proposed). For adjacent pipeline loops in agricultural areas, install the new pipeline with at least the same depth of cover as the existing pipeline(s).

10.1.2 Irrigation

1. Maintain water flow in crop irrigation systems, unless shutoff is coordinated with affected parties.
2. Repair any damage to the systems as soon as practical.

10.1.3 Soil Compaction Mitigation

1. Test topsoil and subsoil for compaction at regular intervals in agricultural areas disturbed by construction activities. Conduct tests on the same soil type under similar moisture conditions in undisturbed areas to identify approximate preconstruction conditions. Use penetrometers or other appropriate devices to conduct tests.
2. Plow severely compacted agricultural areas with a paraplow or other deep tillage implement. In areas where topsoil has been segregated, plow the subsoil before replacing the segregated topsoil. If subsequent construction and cleanup activities result in further compaction, conduct additional tilling.

10.1.4 Landowner Requested Temporary and Permanent Stabilization

Upon completion of final grading, the contractor will stabilize disturbed areas within 4 days of the cessation of construction activities. In most areas, this will include seeding with a permanent seed mix and mulching. Wetland and riparian seed mixes will be used where noted on the Wetland and Riparian Reforestation Plan. Erosion control blankets will be installed along steep slopes and near watercourse crossings in accordance with the E&SCP. Restoration will be monitored for the overall Project until permanent stabilization is achieved, the PADEP determines that permit conditions have been met, and the PADEP terminates the permit.

The exception to the above will be in cultivated croplands, where landowners may request that PennEast not seed the Project area with the Project's seed mixes to prevent the introduction of new plant species to their

fields. Landowners may want to plant crops soon after Project construction is complete, which could be substantially before the entire Project has reached stabilization. PennEast would request agency approval, via a partial NOT for these associated lands only, to release these areas from the permit's permanent stabilization requirements by alternately allowing a cover crop to stabilize the soil. In these instances, PennEast will stabilize the ROW in accordance with the PADEP approved Temporary Stabilization Requirements using mulch and coordinate with the PADEP and County Conservation Districts to complete post-construction inspections of the agricultural lands. Upon receiving approval for the partial NOT, perimeter BMPs will be removed to allow the farmer access to the Project area, but BMPs along the edges of wetlands or watercourses would be left in place to provide continuous protection of sensitive resources. PennEast would work with the landowners to remove the remaining BMPs along sensitive resources after the crop cover has been established by removing these BMPs via a non-disturbing technique such as via manually.

10.2 Road Crossings

Unpaved private and public roads supporting minimal traffic volumes are usually crossed by boring or by means of an open cut, if this method is approved by the owner or appropriate road management agency. An open cut crossing may involve closing the road to all traffic and constructing an adequate detour around the crossing area or excavating one-half of the roadway at a time allowing through traffic to be maintained.

The trench for an open cut crossing is excavated with a backhoe or similar equipment, all backfill is compacted, and the road resurfaced. All state, national, and interstate highways as well as all railroads must be crossed by boring, unless the crossing permit allows an open cut crossing. Access roads shall be used in accordance with Section 9.2.

10.3 Residential Areas

10.3.1 Construction Procedures

Specialized construction procedures will be utilized in areas of heavy residential or commercial/ industrial congestion where residences or business establishments are located within 50 feet of construction work areas.

1. Install safety fence at the edge of the CWA for a distance of 100 feet on either side of the residence or business establishment.
2. Attempt to maintain a minimum distance of 25 feet between any residence/business establishment and the edge of the construction work area for a distance of 100 feet on either side of the residence/business establishment.
3. Avoid removal of mature trees and landscaping within the construction work area unless necessary for safe operation of construction equipment, or as specified in landowner agreements.
4. Restore all lawn areas and landscaping immediately following cleanup operations, or as specified in landowner agreements.
5. If seasonal or other weather conditions prevent compliance with these time frames, maintain and monitor temporary erosion controls (BMPs and mulch) until conditions allow completion of restoration.

10.3.2 Construction Techniques

In addition to the previously identified specialized procedures, smaller "spreads" of labor and equipment, operating independent of the mainline work force, will utilize either the stove pipe or drag section pipeline construction techniques in those areas of congestion where a minimum distance of 25 feet cannot be

maintained between the residence (or business establishment) and the edge of the construction work area. In no case shall the temporary work area be located within 10 feet of a residence unless the landowner agrees in writing, or the area is within the existing maintained ROW. The following techniques shall be utilized for a distance of 100 feet on either side of the residence or business establishment at the locations identified in the Construction Contract and/or Line List.

1. The stove pipe construction technique is a less efficient alternative to the mainline method of construction, typically used when the pipeline is to be installed in very close proximity to an existing structure or when an open trench would adversely impact a commercial/industrial establishment. The technique involves installing one joint of pipe at a time whereby the welding, weld inspection, and coating activities are all performed in the open trench. At the end of each day after the pipe is lowered-in, the trench is backfilled and/or covered with steel plates or timber mats. The length of excavation performed each day cannot exceed the amount of pipe installed.
2. The drag section construction technique, while less efficient than the mainline method, is normally preferred over the stove pipe alternative. This technique involves the trenching, installation, and backfill of a prefabricated length of pipe containing several segments all in one day. At the end of each day after the pipe is lowered-in, the trench is backfilled and/or covered with steel plates or timber mats. Use of the drag section technique will typically require adequate staging areas outside of the residential and/or commercial/industrial congestion for assembly of the prefabricated sections.

10.3.3 Cleanup and Restoration

1. Reseed all disturbed lawns with a seed mixture acceptable to landowner or comparable to the adjoining lawn.
2. Landowners shall be compensated for damages to ornamental shrubs and other landscape plantings.
3. Landowners shall be compensated for damages in a fair and reasonable manner, and as specified in the damage provision within the controlling easement on each property.

11.0 WATERCOURSE CROSSINGS

The following section describes the construction procedures and mitigation measures that will be used for pipeline installations at watercourses. The intent of these procedures is to minimize the extent and duration of Project related disturbances within watercourses.

11.1 Watercourse Definitions

The term “**watercourse**” as used in this E&SCP includes any natural or artificial stream, river, or drainage with perceptible flow at the time of crossing, and other permanent watercourses such as ponds and lakes. In this E&SCP, watercourses are characterized into three main categories depending on the width of the watercourse. The categories are as follows:

- A “**minor watercourse**” includes all watercourses less than or equal to 10 feet wide at the water’s edge at the time of construction.
- An “**intermediate watercourse**” includes all watercourses greater than 10 feet wide but less than or equal to 100 feet wide at the water’s edge at the time of construction.
- A “**major watercourse**” includes all watercourses greater than 100 feet wide at the water's edge at the time of construction.

11.2 General Watercourse Procedures

11.2.1 Time Window for Construction

Construction restriction time windows for fisheries of special concern at watercourse crossings must be followed unless written approval is obtained from the PFBC Division of Environmental Services or National Marine Fisheries Service (NMFS).

No work shall commence through a stream, river, or other waterbody during inclement weather. Prior to commencement of construction activities for a stream crossing installation, an assessment of current weather conditions, weather forecast, and flows of the stream channel for crossing feasibility will be conducted. This determination will be captured in a document requiring sign-off from the Environmental Inspector, Contractor, and PennEast representative that a crossing can be achieved in the projected timeframe.

11.2.2 Temporary Equipment Bridges

A temporary equipment bridge is a structure that may be installed across a watercourse to provide a means for construction equipment to cross the stream while minimizing impacts to the channel bottom or banks.

1. Until the equipment bridge is installed, only clearing equipment and equipment necessary for installation of equipment bridges may cross the watercourse and the number of crossings shall be limited to one crossing per piece of equipment, unless otherwise authorized by the appropriate permitting agency.
2. Construct equipment bridges to maintain unrestricted flow and to prevent soil from entering the watercourse. Examples of such bridges include:
 - a) Equipment pads and culverts
 - b) Clean crushed stone and culverts
 - c) Flexi-float or portable bridges
 - d) Equipment pads or railroad car bridges without culverts
3. Construct crossings as close to perpendicular to the axis of the watercourse channel.
4. Maintain each equipment bridge to withstand typical flows that would occur in the watercourse. Align culverts/flumes to prevent bank erosion or streambed scour. If necessary, install energy dissipating devices downstream of the culverts.
5. Do not use soil to construct or stabilize equipment bridges.
6. Design and maintain equipment bridges to prevent soil from entering the watercourse.
7. Remove temporary equipment bridges as soon as practicable after permanent seeding.
8. If there will be more than 1 month between final cleanup and the beginning of permanent seeding and reasonable alternative access to the ROW is available, remove equipment bridges as soon as practical after final cleanup.
9. Obtain any necessary permits from the USACE or the PADEP for temporary and permanent bridges.

11.2.3 Clearing and Grading

1. Confine construction activities and ground disturbance to within the limit of disturbance boundaries shown on the construction drawings.

2. Restrict extra work areas (such as staging areas and additional spoil storage areas) to those shown only on the construction drawings. All extra work areas must be located at least 50 feet away from the water's edge, except where the adjacent upland consists of cultivated or rotated cropland or other disturbed land. If site-specific conditions do not permit a 50-foot setback, PennEast can receive written approval from the FERC to locate these extra work areas closer than 50 feet from the water's edge.
3. If the pipeline parallels a watercourse, PennEast will typically maintain at least 15 feet of undisturbed vegetation between the watercourse (and any adjacent wetland) and the permanent ROW.
4. Clear the CWA adjacent to all watercourses up to the high-water bank (where discernible).
5. Immediately remove all cut trees and branches that inadvertently fall into a watercourse and stockpile in an upland area on CWA for disposal.
6. Grade the CWA adjacent to watercourses up to within 10 feet of the high-water bank, leaving an ungrubbed vegetative strip intact.
7. Clearing and grading operations may proceed through the 10-foot vegetative strip **only on the working side of the CWA** in order to install the equipment bridge and travel lane. Use temporary BMPs to prevent the flow of bank spoil into the watercourse.
8. Maintain adequate flow rates to protect aquatic life and prevent the interruption of existing downstream uses.

11.2.4 Installing Temporary Erosion and Sediment Control

1. Install BMPs immediately after initial disturbance of the watercourse or adjacent upland. BMPs must be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench), until replacement by permanent erosion controls or restoration of adjacent upland areas is complete.
2. Install BMPs across the entire CWA at all watercourse crossings, where necessary to prevent the flow of sediments into the watercourse. Temporary or removable BMPs such as interceptor dikes or drivable berms may be used in lieu of BMPs in front of equipment bridges or timber mats across the travel lane.

These temporary BMPs can be removed during the construction day but must be reinstalled after construction has stopped for the day and/or when heavy precipitation is imminent.

1. Install BMPs as necessary along the edge of the CWA to contain spoil within the CWA and prevent sediment flow into the watercourse where watercourses are adjacent or parallel to the CWA and the CWA slopes toward the watercourse.
2. Use temporary trench plugs at all watercourse crossings to prevent diversion of water into upland portions of the pipeline trench and to keep any accumulated trench water out of the watercourse. Trench plugs shall be of sufficient size to withstand upslope water pressure.

11.2.5 Various Types of Crossings

Pipeline construction across watercourse channels may result in short term water quality impacts. Decisions regarding watercourse crossing techniques will be based on agency consultations and permit conditions. Mobilization of construction equipment, trench excavation, and backfilling will be performed in a manner that will minimize the potential for erosion and sedimentation within the watercourse channel. Erosion control measures will be implemented to confine water quality impacts within the immediate construction area and to minimize impacts to downstream areas. The length of the crossing, the sensitivity of the area,

existing conditions at the time of the crossing, and permit requirements will determine the most appropriate measures to be used.

PennEast proposes to cross watercourses with flow at the time of construction using a combination of horizontal directional drilling (HDD), conventional bore, coffer dam, and dry-crossing methods, as described below. The watercourse crossing method band on the alignment sheets indicates the primary, secondary, and tertiary crossing methods selected for each watercourse. If the primary crossing method listed is not feasible at the time of construction due to field conditions or other site-specific constraints, the contractor may contact the PADEP for approval to utilize the secondary crossing method. If both the primary and secondary crossing methods listed are not feasible for similar reasons, the contractor may contact the PADEP for approval to utilize the tertiary crossing method.

Generally during crossings, the full width of the CWA will be used on either side of the watercourse for construction staging and pipeline fabrication. Extra temporary construction workspace may be required in some situations and will be located in upland areas a minimum of 50 feet from the watercourse, whenever possible; certain crossings may require extra workspace in closer proximity to the watercourse.

11.2.5.1 General Crossing Procedures

1. Dewater trench in accordance with the procedures described in Section 9.5.6.
2. For minor watercourses:
 - a) Place all spoil from the watercourse within the CWA at least 10 feet from the water's edge or in the extra work areas shown on the construction drawings. Use BMPs to prevent flow of spoil or heavily silt-laden water into the watercourse.
3. For intermediate watercourses:
 - a) Less than 30 feet in width, place all spoil from the watercourse within the CWA at least 10 feet from the water's edge or in the extra work areas shown on the construction drawings. Use BMPs to prevent flow of spoil or heavily silt-laden water into the watercourse.
 - b) Greater than 30 feet in width, spoil may be temporarily sidecast into the watercourse provided that site specific approval is received from the PADEP.
4. For major watercourses:
 - a) Place all upland bank spoil from the watercourse within the CWA at least 10 feet from the water's edge or in the extra work areas shown on the construction drawings. Use BMPs to prevent flow of spoil or heavily silt laden water into the watercourse.
5. Restore and stabilize the banks and channel in accordance with Section 11.2.6.

11.2.5.2 Dry Crossing If No Flow

Crossing of watercourses when they are dry or frozen and not flowing may proceed using standard upland construction techniques, provided that the EI verifies that water is unlikely to flow between initial disturbance and final stabilization of the feature. This typically applies to ephemeral and intermittent watercourses that may not have flow during dry periods (i.e. summertime construction). In the event of perceptible flow, PennEast will utilize the secondary or tertiary crossing method and comply with all necessary Procedure requirements.

11.2.5.3 Flumed Crossing

The flumed crossing method utilizes a flume pipe(s) to transport stream flow across the disturbed area and allows trenching to be done in drier conditions. The flume pipe(s) installed across the trench will be sized to accommodate anticipated stream flows. This method is utilized for perennial watercourses (minor and

intermediate) up to 30 feet wide that are state designated fisheries including coldwater fisheries and warmwater fisheries considered significant by the state. Flumes are generally not recommended for use on a watercourse with a broad unconfined channel, unstable banks, a permeable substrate, excessive stream flow, or where the installation and construction of the flume crossing will adversely affect the bed or banks of the stream.

1. The flumed crossing shall be installed as follows:
 - a) Install flume pipe(s) after blasting and other rock breaking measures (if required), but before trenching;
 - b) Properly align flume pipe(s) to prevent bank erosion and streambed scour;
 - c) Use sand bags or equivalent dam diversion structure to provide a seal at either end of the flume to channel water flow (some modifications to the stream bottom may be required to achieve an effective seal);
 - d) **Do not remove flume pipe during trenching**, pipe laying (thread pipe underneath the flume pipe(s)), or backfilling activities, or initial streambed restoration efforts unless authorized by agency permits; and
 - e) Remove all flume pipes and dams that are not also part of the equipment bridge as soon as final cleanup of the stream bed and bank is complete.

11.2.5.4 Dam and Pump Crossing

The dam and pump method is presented as an alternative dry crossing procedure to the flumed crossing. The dam and pump crossing is accomplished by utilizing pumps to transport stream flow across the disturbed area. This method involves placing sandbags across the existing stream channel upstream from the proposed crossing to stop water flow and downstream from the crossing to isolate the work area. Pumps are used to pump the water across the disturbed area and back into the stream further downstream. The dam and pump procedure allows for more space and flexibility during trenching and pipe installation, which shortens the duration of time spent at the watercourse.

1. The dam and pump method may be used for crossings of watercourses where pumps can adequately transfer stream flow volumes around the work area, and where there are no concerns about sensitive species passage.
2. Implementation of the dam and pump crossing method will meet the following performance criteria:
 - a) Use sufficient pumps, including onsite backup pumps, to maintain downstream flows;
 - b) Construct dams with materials that prevent sediment and other pollutants from entering the watercourse (e.g., sandbags or clean gravel with plastic liner);
 - c) Screen pump intakes to minimize entrainment of fish;
 - d) Prevent streambed scour at pump discharge; and
 - e) Continuously monitor the dam and pumps to maintain proper operation throughout the watercourse crossing.
3. The dam and pump crossing shall be installed as follows:
 - a) Install and properly seal sandbags at the upstream and downstream location of the crossing;
 - b) Create an in-stream sump using sandbags if a natural sump is unavailable for the intake hose;
 - c) Initiate pumping of the stream around the work area prior to excavating the trench;
 - d) Screen all intake hoses to prevent the entrainment of fish and other aquatic life;
 - e) Direct all discharges from the pumps through energy dissipaters to minimize scour and siltation;

- f) Monitor pumps at all times until construction of the crossing is completed; and
- g) Following construction, remove the equipment crossing and sandbag dams.
- h) Construct the crossing in accordance with the measures contained in this E&SCP to the maximum extent practical.

11.2.5.5 Cofferdam Crossing

A cofferdam is a temporary structure built into a watercourse to contain, or divert movement of water and to provide a reasonably dry waterbody crossing construction area. Cofferdams are commonly made of steel sheet pile, rock, gabions, concrete jersey barriers, vinyl tubes filled with water, or wood and may be lined with geotextile, plastic sheeting, or other materials to prevent water from entering the construction area. The advantages of the use of cofferdams include, maintain flow of the watercourse with phased construction approaches, minimal subsurface impacts, and short installation and breakdown times.

A typical cofferdam crossing will have two phases. Each of the phases will be conducted from opposite stream banks. Each phase will consist of placing sand bags or other equivalent cofferdam materials such that a portion of the watercourse to be crossed can be blocked from upstream and downstream water flow while at least one third of the total crossing width remains open to water flow. The area within the cofferdam area will be dewatered and pipeline work construction will be carried out in the dry. After completion of one bank (phase) the same configuration will be used from the other bank to complete a continuous pipeline crossing through the watercourse.

1. Cofferdams shall be constructed with materials that prevent sediment and other pollutants from entering the watercourse (e.g. sandbags or clean gravel with plastic liner);
2. Cofferdam and dewatering pumps shall be monitored to maintain proper operation throughout the watercourse crossing.

11.2.5.6 Conventional Bore Crossing

Watercourse crossings in close proximity to a conventional bore road crossing will be included as part of the bored crossing. The conventional bore method is used in place of traditional trenching methods to reduce disturbance and environmental impacts. The approximate location of bore pits for all conventional bore crossings are identified on the alignment sheet plan view drawings.

1. The conventional bore crossings shall be installed as follows:
 - a) Verify placement of compost filter socks downgradient of the bore and receiving pits.
 - b) Excavate pits. Stockpile material from the pit excavation in the CWA.
 - c) Bore beneath streams where indicated on the construction drawings.
 - d) Water from the bore pits and work areas shall be pumped to a pumped water filter bag.
 - e) Upon completion, backfill all pits.

11.2.5.7 Horizontal Directional Drill

For each watercourse or wetland that would be crossed using the HDD method, a site-specific plan will be implemented that includes:

1. Site-specific construction diagrams that show the location of mud pits, pipe assembly areas, and all areas to be disturbed or cleared for construction;
2. Justification that disturbed areas are limited to the minimum needed to construct the crossing;

3. Identification of any aboveground disturbance or clearing between the HDD entry and exit workspaces during construction;
4. A description of how an inadvertent release of drilling mud would be contained and cleaned up; and
5. A contingency plan for crossing the watercourse or wetland in the event the HDD is unsuccessful and how the abandoned drill hole would be sealed, if necessary.

11.2.6 Restoration

For minor watercourse crossings, the preferred restoration method is to achieve final grade and restore the watercourse, its banks, and 50-foot buffers (100-foot in HQ/EV watersheds) within 24 hours of backfilling. For intermediate watercourse crossings, the preferred restoration method is to achieve final grade and restore the watercourse, its banks, and 50-foot buffers (100-foot in HQ/EV watersheds) within 48 hours of backfilling. If conditions do not permit the preferred method, the construction work area not in use for access will be promptly rough graded and stabilized with a temporary seed mix. **Do not use liquid mulch binders within 100 feet of wetlands and watercourses**, except where product is certified environmentally non-toxic by the appropriate state or federal agency or independent standards-setting organization.

1. For each watercourse crossing, a permanent waterbar/slope breaker and a trench plug will be installed at the base of slopes near the watercourse. Permanent waterbars may not be installed in agricultural or residential areas.
2. Return all watercourse banks to preconstruction contours or to stable angle of repose as approved by the EI.
3. Install erosion control fabric or a functional equivalent on watercourse banks at the time of final bank recontouring. Do not use synthetic monofilament mesh/netted erosion control materials in areas designated as sensitive wildlife habitat unless the product is specifically designed to minimize harm to wildlife. Anchor erosion control fabric with staples or other appropriate devices.
4. Use clean gravel or native cobbles for the upper 12 inches of trench backfill in all watercourses identified in the Clearance Package/Permit Book.
5. Limit the placement of riprap to the slopes along the disturbed watercourse crossing.
6. Install erosion control fabric anchored with staples or other appropriate devices along watercourses with low flow conditions as presented on Drawing 000-03-09-005 (Figure 21).
7. Revegetate disturbed riparian areas with the Riparian Buffer Mix presented on Drawing 000-01-01-003C. In the event that final cleanup is deferred more than 20 days after the trench is backfilled, all slopes within 100 feet of watercourses shall be mulched with 3 tons/acre of straw. Liquid mulch binders will not be used within 100 feet of watercourses.
8. Remove all temporary BMPs when replaced by permanent erosion controls or when restoration of adjacent upland areas is successful as specified in Section 14.1.

12.0 WETLAND CROSSINGS

The term “**Wetland**” as used in this E&SCP includes any area that satisfies the requirements of the current Federal methodology for identifying and delineating wetlands. Wetland areas have been delineated prior to construction and are identified on the construction drawings.

The wetland crossing procedures described in this Plan will comply with USACE and PADEP permit terms and conditions. The requirements outlined below do not apply to wetlands in cultivated or rotated cropland. Standard upland protective measures including workspace and topsoiling requirements, will apply to these agricultural wetlands.

12.1 General Procedures

12.1.1 Clearing and Grading

1. Limit construction activity and ground disturbance in wetland areas to a CWA width of 75 feet or as shown on the construction drawings. With written approval from the FERC for site-specific conditions, CWA width within the boundaries of delineated wetlands may be expanded beyond 75 feet.
2. Wetland boundaries and buffers must be clearly marked in the field with signs and /or highly visible flagging until construction-related ground disturbing activities are complete.
3. Restrict extra work areas (such as staging areas and additional spoil storage areas) to those shown only on the construction drawings. All extra work areas must be located at least 50 feet away from wetland boundaries, except where the adjacent upland consists of cultivated or rotated cropland or other disturbed land. If site-specific conditions do not permit a 50-foot setback, PennEast can receive written approval from the FERC to locate these extra work areas closer than 50 feet from the wetland.
4. If standing water or saturated soils are present, or if construction equipment causes ruts or mixing of the topsoil and subsoil in wetlands, use low-ground-weight construction equipment or operate normal equipment on timber, prefabricated equipment mats or terra mats on the working side of the ROW during clearing operations. Do not use more than two layers of timber mats to stabilize the ROW.
5. Cut vegetation just above ground level and grind stumps to ground level, leaving existing root systems in place. Immediately remove all cut trees and branches from the wetland and stockpile in an upland area on CWA for disposal.
6. Limit pulling of tree stumps and grading activities to directly over the trenchline. Do not grade or remove stumps or root systems from the rest of the CWA in wetlands unless the Chief Inspector and EI determine that safety-related construction constraints require removal of tree stumps from under the working side of the CWA.
7. Do not cut trees outside of the CWA to obtain timber for riprap or equipment mats.
8. Cleared materials (slash, logs, brush, wood chips) shall not be permanently placed within wetland areas.

12.1.2 Temporary Erosion and Sediment Control

1. Install BMPs immediately after initial ground disturbance at the following locations:
 - a) Within the CWA at the edge of the boundary between wetland and upland;
 - b) Across the entire CWA immediately upslope of the wetland boundary to contain spoil within the CWA and prevent sediment flow into the wetland;
 - c) Along the edge of the CWA, where the CWA slopes toward the wetland, to protect adjacent, off CWA wetland; and
 - d) Along the edge of the CWA as necessary to contain spoil and sediment within the ROW through wetlands.
2. Maintain all BMPs throughout the construction period and reinstall as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls or restoration of adjacent upland areas is complete.

12.1.3 Crossing Procedure

1. Minimize the length of time that topsoil is segregated, and the trench is open. Do not trench the wetland until the pipeline is assembled and ready for lowering in.
2. Do not use rock, soil imported from outside the wetland, tree stumps, or brush riprap to stabilize the CWA.
3. Perform topsoil segregation in accordance with Section 9.5.3.1 and trench dewatering in accordance with Section 9.5.6.
4. Assemble the pipeline in an upland area unless the wetland is dry enough to adequately support skids and pipe.
5. Install trench plugs at wetland boundaries and every 100' throughout wetland crossings, and/or seal the trench bottom as necessary to maintain the original wetland hydrology at locations where the pipeline trench may drain a wetland.
6. Restore pre-construction wetland contours to maintain the original wetland hydrology.
7. Install a permanent waterbars and a trench plug at the base of slopes near the boundary between the wetland and adjacent upland areas. In addition, install BMPs as outlined in Section 9.5.2. Permanent waterbars shall not be installed in agricultural or residential areas.
8. Restore segregated topsoil to its original position after backfilling is complete. When required, additional fill material imported from off the CWA must be approved by the EI. The original wetland contours and flow regimes will be restored to the extent practical.

12.1.4 Cleanup and Restoration

1. Revegetate the disturbed wetland areas with the Wetland Seed Mix presented on Drawing 000-01-01-003C, unless standing water is present.
2. **Do not use mulch, lime or fertilizer in wetland areas unless required in writing by the appropriate federal or state agency.**
3. Mulch the disturbed CWA only when required by the appropriate land management or state agency, as identified in the Clearance Package/Permit Book.
4. In the event that final cleanup is deferred more than 20 days after the trench is backfilled, all slopes adjacent to wetlands shall be mulched with 3 tons/acre of straw for a minimum of 100 feet on each side of the crossing. Liquid mulch binders will not be used within 100 feet of wetlands or watercourses.
5. Remove all timber mats and prefabricated equipment mats upon completion of construction.
6. Develop specific procedures in coordination with the appropriate federal or state agencies, where necessary, to prevent the invasion or spread of invasive species and noxious weeds (such as purple loose strife and common reed).
7. Verify that all disturbed areas permanently revegetate in accordance with Section 14.1.
8. Remove temporary BMPs located at the boundary between wetland and adjacent upland areas after upland revegetation and stabilization of adjacent upland areas are successful as specified in Section 14.1.

13.0 PREPAREDNESS, PREVENTION, AND CONTINGENCY (PPC) PLAN

The Contractor shall adhere to PennEast's PPC Plan at all times.

1. Do not store hazardous materials, chemicals, fuels, or lubricating oils within 100 feet of any wetland, watercourse or within any designated municipal watershed area where feasible. If the 100-foot setback cannot be met, this activity can be performed within the 100-foot setback, with EI approval, if done in accordance with the PPC Plan.
2. Refuel all construction equipment at least 100 feet from any wetland or watercourse, where feasible. If the 100-foot setback cannot be met, this activity can be performed within the 100-foot setback, with EI approval, if done in accordance with the PPC Plan.
3. Do not perform fiber bonded epoxy (FBE) or concrete coating activities within 100 feet of any wetland or watercourse, unless the location is an existing industrial site designated for such use. If the 100-foot setback cannot be met, these activities can be performed within the 100-foot setback, with EI approval, if done in accordance with the PPC Plan. These activities can occur closer only if the EI determines that there is no reasonable alternative, and the Project sponsor and its contractors have taken appropriate steps (including secondary containment structures) to prevent spills and provide for prompt cleanup in the event of a spill;
4. Pumps operating within 100 feet of a watercourse or wetland boundary utilize appropriate secondary containment systems to prevent spills; and
5. Bulk storage of hazardous materials, including chemicals, fuels, and lubricating oils have appropriate secondary containment systems to prevent spills.

14.0 POST CONSTRUCTION ACTIVITIES

14.1 Post-Construction Monitoring

The Project, conducted under this E&SCP, shall meet the monitoring requirements set forth in this section. Company personnel shall perform the following:

1. Establish and implement a program to monitor the success of restoration upon completion of construction and restoration activities;
2. Conduct follow-up inspections of all disturbed areas, as necessary to determine the success of revegetation and address landowner concerns. At a minimum, conduct inspections after the first and second growing seasons in upland areas. Monitor wetland and watercourse crossing restoration for a minimum of five years, or until restoration is considered successful by the USACE and PADEP;
3. Revegetation in nonagricultural areas shall be considered successful if the vegetative cover is sufficient to prevent the erosion of soils on the disturbed CWA and density and cover are similar to that in adjacent undisturbed area. Sufficient coverage in upland areas is defined when vegetation has a uniform 70 percent vegetative coverage. In agricultural areas, revegetation shall be considered successful when upon visual survey, crop growth and vigor are similar to adjacent undisturbed portions of the same field, unless the easement agreement specifies otherwise. Revegetation efforts (such as fertilizing or reseeding) will continue until revegetation is successful;
4. Restoration shall be considered successful if the CWA surface condition is similar to adjacent undisturbed lands, construction debris is removed (unless otherwise approved by the land owner or land managing agency), revegetation is successful, and proper drainage has been restored;
5. Monitor and correct problems with drainage and irrigation systems resulting from pipeline construction in active agricultural areas until restoration is successful;

6. Make efforts to control unauthorized off-road vehicle use, in cooperation with the landowner, throughout the life of the Project. Maintain signs, gates, and permanent access roads as necessary;
7. Monitor and record the success of wetland revegetation for a minimum of five years or until wetland revegetation is successful. Wetland revegetation will be considered successful if the success criteria outlined in PennEast's Post-Construction Wetland and Watercourse Monitoring Plan are satisfied.
8. For any wetland where vegetation is not successful at the end of 5 years after construction, PennEast shall develop and implement (in consultation with a professional wetland ecologist) a plan to actively revegetate the wetland with native wetland herbaceous and woody plant species; and
9. Inspect all temporary remaining erosion and sedimentation controls during routine patrols to maintain proper functioning. Any deficiencies found will be reported and corrected as needed. Once the area has revegetated and stabilized, the erosion controls will be removed.

14.2 Post-Construction Maintenance

All activities conducted under this E&SCP, shall meet the maintenance requirements set forth in this section. The following requirements restrict the amount of routine vegetation mowing or clearing that can occur on new pipeline facilities. Where the newly established pipeline ROW is located on other existing ROWs not affiliated with PennEast, the easement holder or owner will continue to maintain their ROWs using procedures specified in their vegetative management programs.

14.2.1 Uplands

Routine maintenance of the ROW is required to allow continued access for routine pipeline patrols, maintaining access in the event of emergency repairs, and visibility during aerial patrols. In upland areas, maintenance of the ROW will involve clearing the entire ROW of woody vegetation.

1. Routine vegetation mowing or clearing over a 30-foot wide corridor centered on the pipeline of the permanent ROW in uplands shall be conducted no more frequently than once every 3 years. However, to facilitate periodic corrosion and leak surveys, a 10-foot wide corridor centered on the pipeline may be cleared at a frequency necessary to maintain the 10-foot wide corridor in a herbaceous state.
2. In no case shall routine vegetation mowing or clearing occur during the migratory bird nesting season between April 15 and August 1 of any year unless specifically approved in writing by the responsible land management agency or the USFWS.

14.2.2 Watercourses and Wetlands

1. Routine vegetation mowing or clearing practices on the CWA adjacent to watercourses will consist of maintaining a riparian strip that measures 25 feet back from the mean high water mark. This riparian area will be allowed to permanently revegetate with native plant species across the entire ROW.
2. Routine vegetation mowing or clearing over the full width of the CWA in wetlands is prohibited.
3. To facilitate periodic corrosion and leak surveys at wetlands and watercourses, a 10-foot wide corridor centered on the pipeline may be cleared at a frequency necessary to maintain the 10-foot corridor in an herbaceous state. Trees and shrubs that are located within 15 feet of the pipeline that have roots that could compromise the integrity of the pipeline coating may be cut and removed from the ROW. Do not conduct any routine vegetation mowing or clearing in riparian areas that are between HDD entry and exit points.

4. Herbicides or pesticides will not be sprayed anywhere along the maintained permanent ROW.
5. Time of year restrictions (April 15 – August 1 of any year) apply to routine mowing and clearing of riparian areas.

14.3 Reporting

PennEast shall maintain records that identify by milepost:

1. Method of application, application rate, and type of fertilizer, pH modifying agent, seed, and mulch used;
2. Acreage treated;
3. Dates of backfilling and seeding; and
4. Names of landowners requesting special seeding treatment and a description of the follow-up actions.
5. The location of any subsurface drainage repairs or improvements made during restoration; and
6. Any problem areas and how they were addressed.

For the authorized projects, PennEast will file quarterly activity reports with FERC documenting the results of follow-up inspections and any problem areas, including those identified by the landowner, and corrective actions taken for at least 2 years following construction.

A wetland revegetation monitoring report identifying the status of the wetland revegetation efforts will be filed with FERC at the end of 3 years following construction, and annually thereafter documenting progress in these wetlands until revegetation is successful.

In accordance with the Post-Construction Wetland and Watercourse Monitoring Plan, PennEast will submit reports to the PADEP/USACE after each monitoring visit over the five-year monitoring period to document restoration progress of impacted wetlands.

Appendices are provided in the ESCGP Application Section 2-1

JPA Section O - Northampton County
Stormwater Management Analysis



625 West Ridge Pike
Suite E-100
Conshohocken, PA 19428
www.aecom.com

610 832 3500 tel
610 832 3501 fax

December 17, 2018

Linda Zembo
Northampton County
669 Washington Street
3rd Floor Room 3116
Easton, PA 18042

**Subject: Updated Stormwater Management Analysis
PennEast Pipeline Project
Northampton County, Pennsylvania**

Dear Linda Zembo,

On November 9, 2016, AECOM notified Northampton County that PennEast Pipeline Company, LLC had submitted Pennsylvania Chapter 105 Joint Permit Applications (JPAs) for authorization of wetland and watercourse crossings for the PennEast Pipeline Project (Project). PennEast will be submitting updated JPAs to the Pennsylvania Department of Environmental Protection (PADEP) in December 2018. In accordance with 25 Pennsylvania Code §105.13(e)(I)(v), PennEast is providing this stormwater management analysis for Project impacts within Northampton County.

Project Description

PennEast proposes to construct, install and operate the Project facilities to provide approximately 1.1 million dekatherms per day (MMDth/d) of year-round natural gas transportation services from the Marcellus Shale producing region in northern Pennsylvania to markets in New Jersey, eastern and southeastern Pennsylvania, and surrounding states. The Project will include a new pipeline and aboveground facilities that will provide a new source of low cost natural gas and enhance the region's supply diversity. The Project facilities include a 36-inch diameter, 115-mile mainline pipeline extending from Luzerne County, Pennsylvania, to Mercer County, New Jersey. The Project will extend from various receipt point interconnections in the eastern Marcellus Shale region to various delivery point interconnections in the heart of major northeastern natural gas-consuming markets.

Stormwater Management Analysis

Within Northampton County, PennEast proposes to construct approximately 25.4 miles of 36-inch diameter pipeline (the PennEast Mainline Pipeline), 2.1 miles of 24-inch diameter pipeline (the Hellertown Lateral), the Hellertown Launcher & Mainline Launcher/Receiver, Mainline Block Valves 7 and 8, and the TCO & UGI/LEH Interconnects, which will be located within the Hokendauqua Creek, Monocacy Creek, Bushkill Creek, Nancy Run, Saucon Creek, Lehigh River, Delaware River, and Delaware River North watersheds for which an Act 167 Stormwater Management Plan has been approved. A location map illustrating the location of the proposed pipeline and aboveground facilities in Northampton County is included as Attachment 1.

The pipeline facilities will be restored to pre-construction grade and revegetated following construction in accordance with PennEast's Erosion and Sediment Control Plan (E&SCP), Site Restoration Plan, and the Federal Energy Regulatory Commission's (FERC's) Upland Erosion Control, Revegetation, and Maintenance Plan. Existing drainage patterns will be maintained as feasible by utilizing the existing contours or restoring any disturbed area to the existing condition or



meadow. Restoration measures will include the re-establishment of original grade and drainage patterns to the extent practicable. Erosion and sedimentation control best management practices will be maintained until final stabilization is achieved to minimize the likelihood of post-construction erosion. The rate and volume of stormwater runoff from the Project area in the post-construction condition is not expected to exceed that of the pre-construction condition. The E&SCP and Site Restoration Plan will be reviewed by the PADEP and Northampton County Conservation District as part of the Erosion and Sediment Control General Permit (ESCGP) application process.

For the Hellertown Launcher & Mainline Launcher/Receiver, the TCO & UGI/LEH Interconnects, and Mainline Block Valves, where new impervious surfaces are proposed, PennEast has prepared Post-Construction Stormwater Management (PCSM) Plans and designed the PCSM facilities consistent with the Lehigh Valley Planning Commission's Act 167 Stormwater Managements Plan that covers Northampton and Lehigh counties. The plan states that, "The basic goal is no increase in the peak rate of runoff at any point in the watershed... If, through the use of infiltration or other means, an applicant can demonstrate that neither the peak rate nor the volume of runoff is increasing with development, additional controls to meet the release rates are not required." The stormwater volume and peak runoff rate requirements will be achieved through the installation of infiltration basins, infiltration berms, and vegetated and riprap swales. The revised PCSM plans and supporting calculations will be submitted to the PADEP and Northampton County Conservation District for review and approval as part of the ESCGP application process.

PennEast will continue to coordinate with the PADEP and the Northampton County Conservation District regarding stormwater management best management practices to prevent an increase in the rate of stormwater runoff and minimize any increase in stormwater runoff volume. If you have any comments regarding consistency with the approved stormwater management plans, please direct comments to the PADEP Northeast Regional Office, Waterways and Wetlands Program at 2 Public Square, Wilkes-Barre, Pennsylvania 18701-1915 or call 570-826-2511.

Yours sincerely,

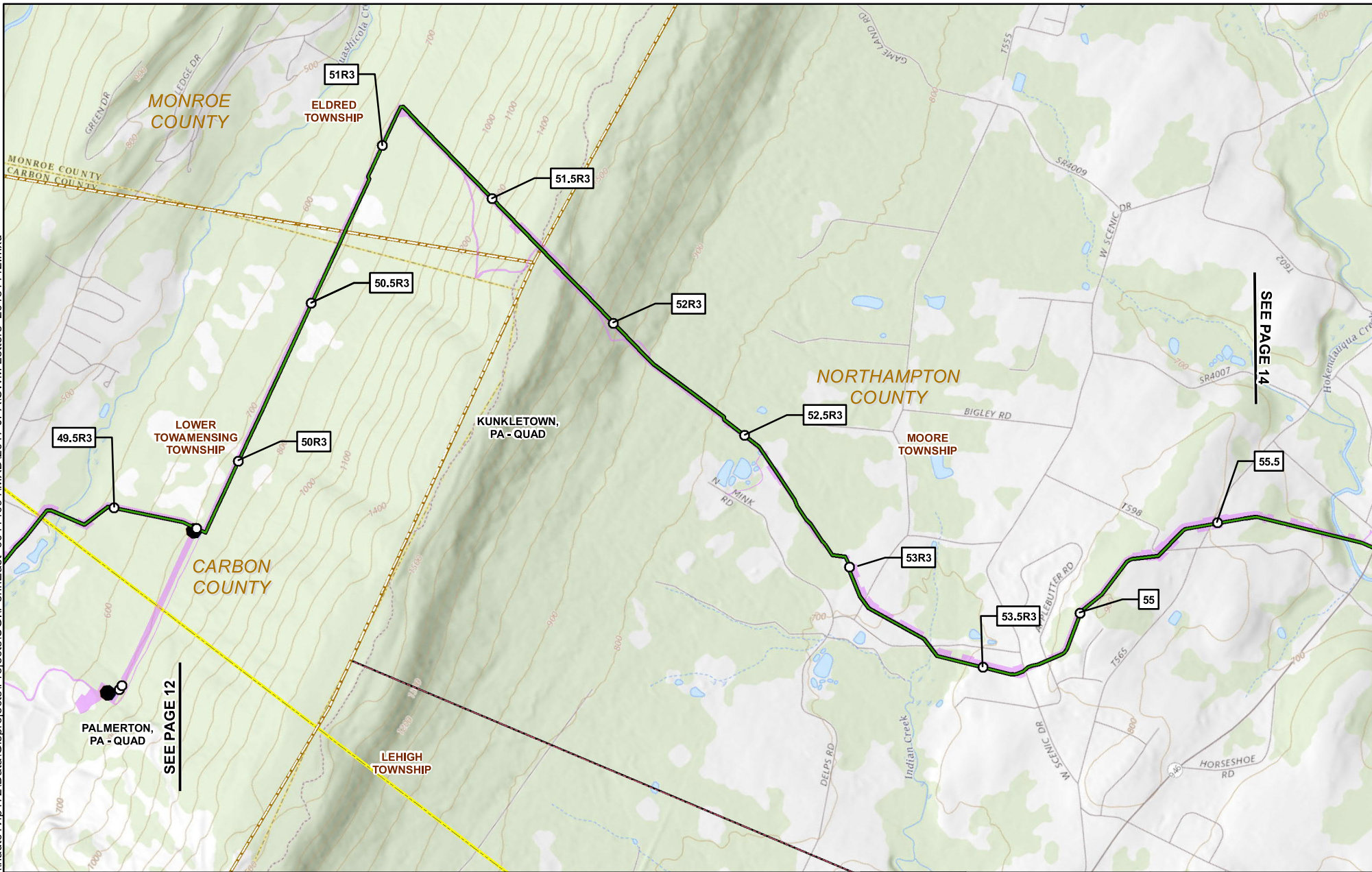
A handwritten signature in black ink that reads "Sarah K. Binckley". The signature is written in a cursive, flowing style.

Sarah K. Binckley
AECOM

cc: Casey Monagan, UGI Energy Services
Amber Holly, UGI Energy Services

ATTACHMENT 1
PROJECT LOCATION MAP

\\nadc1vfp172\Data\GIS\projects\UG\PennEast_60414094\MXD\2017_JPA\SWM\Letters_20181112.mxd



SEE PAGE 12

SEE PAGE 14

1	MILEPOST		PROPOSED CONSTRUCTION LIMIT
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)		USGS QUADRANGLE BOUNDARY
	PROPOSED PERMANENT ABOVE GROUND FACILITY		TOWNSHIP BOUNDARY
	PROPOSED HELLERTOWN LATERAL		COUNTY BOUNDARY
	PROPOSED PENNEAST PIPELINE CENTERLINE		STATE BOUNDARY

PENNEAST PIPELINE PROJECT USGS QUADRANGLE MAP

CARBON, MONROE, & NORTHAMPTON COUNTIES,
PENNSYLVANIA



ABSOLUTE SCALE:
1:24,000

REFERENCE SCALE:
1 IN = 2,000 FT



DRAWN BY: KFS

CHECKED BY:

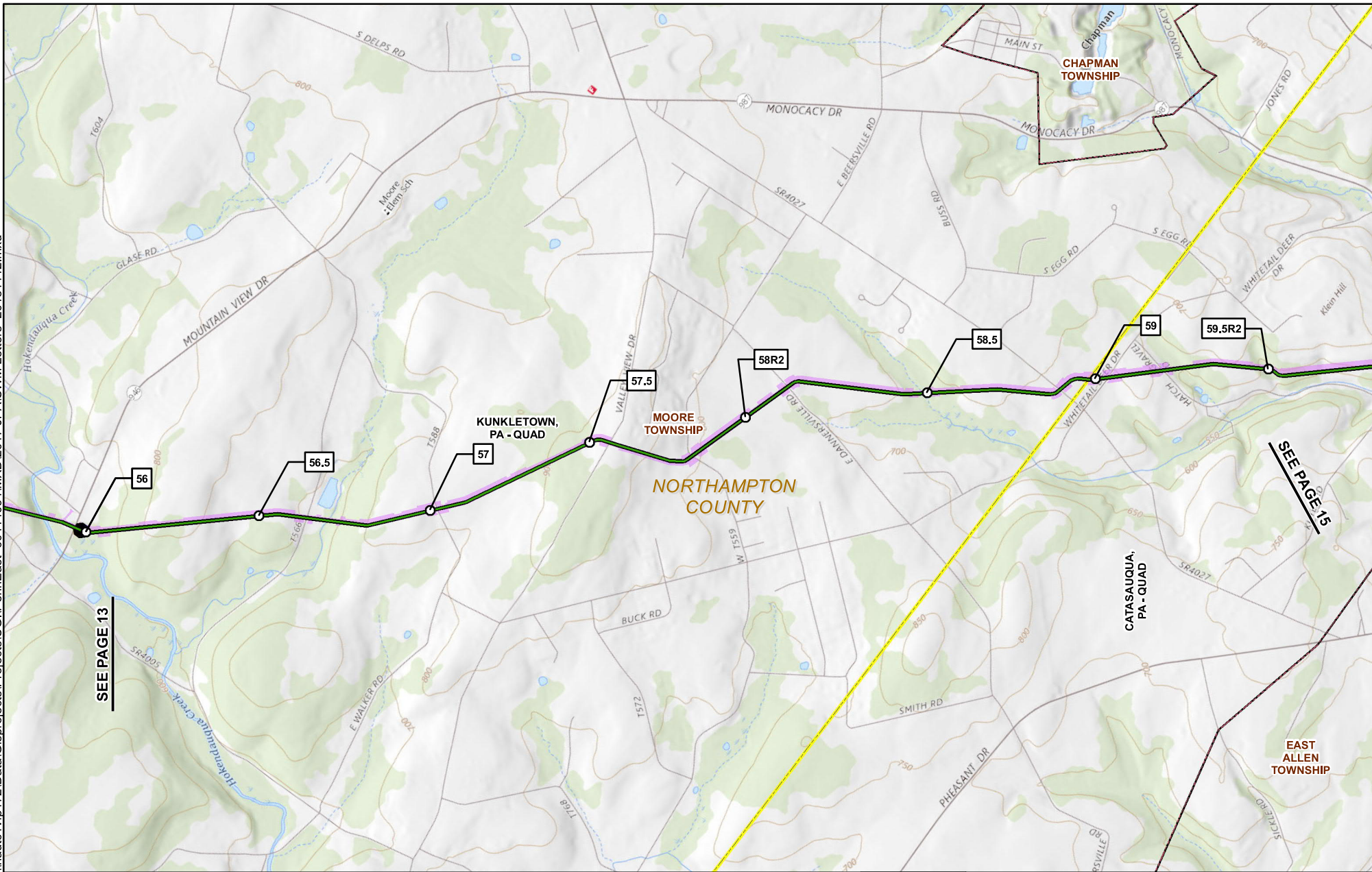
APPROVED BY:

REV. DATE: 11/19/2018

REVISION:

DESC: ISSUED FOR PERMITTING

PAGE: PAGE 13 OF 20



1	MILEPOST		PROPOSED CONSTRUCTION LIMIT
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)		USGS QUADRANGLE BOUNDARY
	PROPOSED PERMANENT ABOVE GROUND FACILITY		TOWNSHIP BOUNDARY
	PROPOSED HELLERTOWN LATERAL		COUNTY BOUNDARY
	PROPOSED PENNEAST PIPELINE CENTERLINE		STATE BOUNDARY

PENNEAST PIPELINE PROJECT USGS QUADRANGLE MAP

**NORTHAMPTON COUNTY,
PENNSYLVANIA**



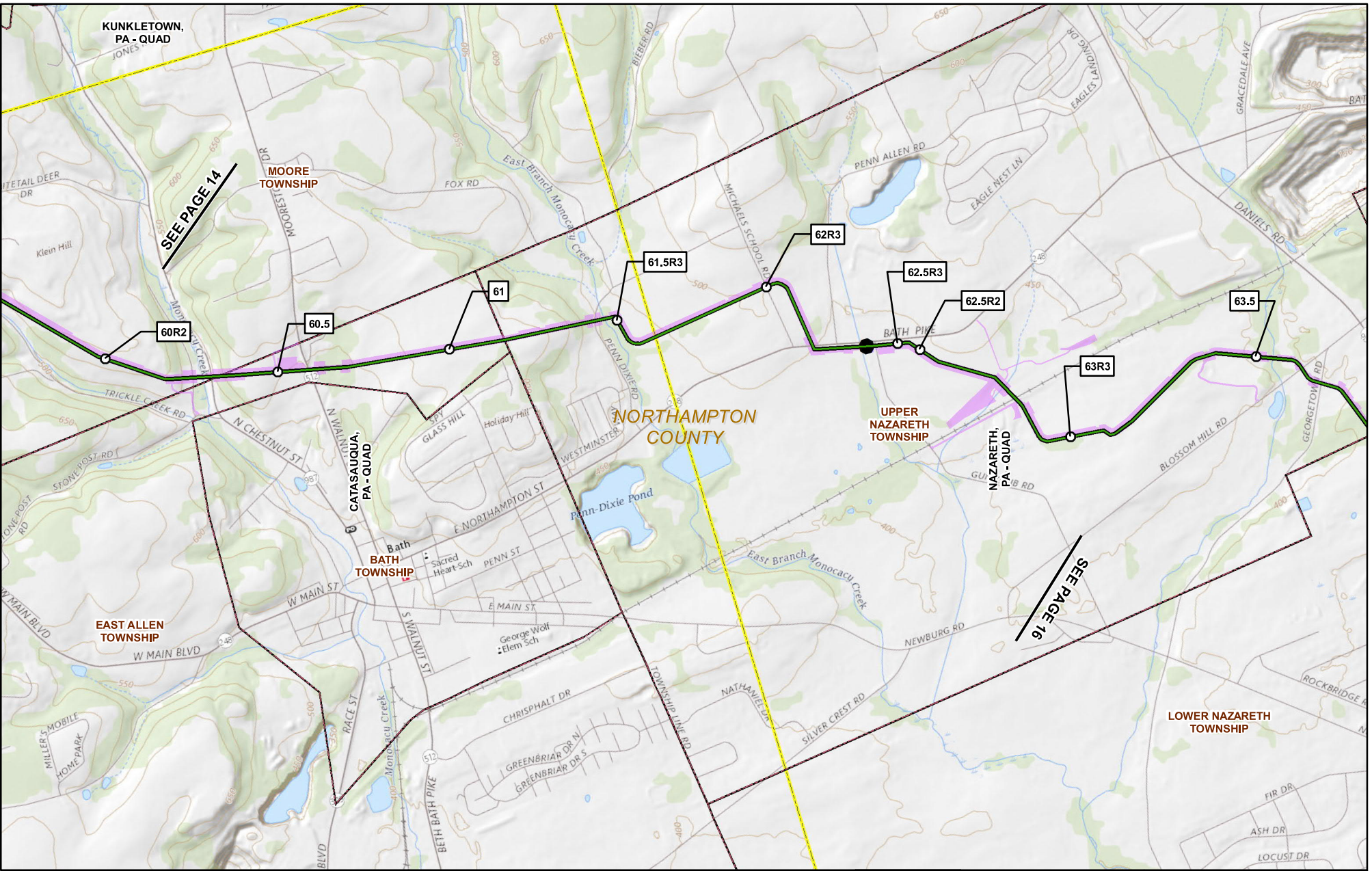
ABSOLUTE SCALE:
1:24,000

REFERENCE SCALE:
1 IN = 2,000 FT



DRAWN BY: KFS
CHECKED BY:
APPROVED BY:
REV. DATE: 11/19/2018
REVISION:
DESC: ISSUED FOR PERMITTING
PAGE: PAGE 14 OF 20

\\nadc1vfp172\Data\GIS\Projects\UG\PenEast_60414094\MXD\2017_JPA\SVM Letters 2018\112.mxd



1	MILEPOST		PROPOSED CONSTRUCTION LIMIT
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)		USGS QUADRANGLE BOUNDARY
	PROPOSED PERMANENT ABOVE GROUND FACILITY		TOWNSHIP BOUNDARY
	PROPOSED HELLERTOWN LATERAL		COUNTY BOUNDARY
	PROPOSED PENNEAST PIPELINE CENTERLINE		STATE BOUNDARY

PENNEAST PIPELINE PROJECT USGS QUADRANGLE MAP

**NORTHAMPTON COUNTY,
PENNSYLVANIA**

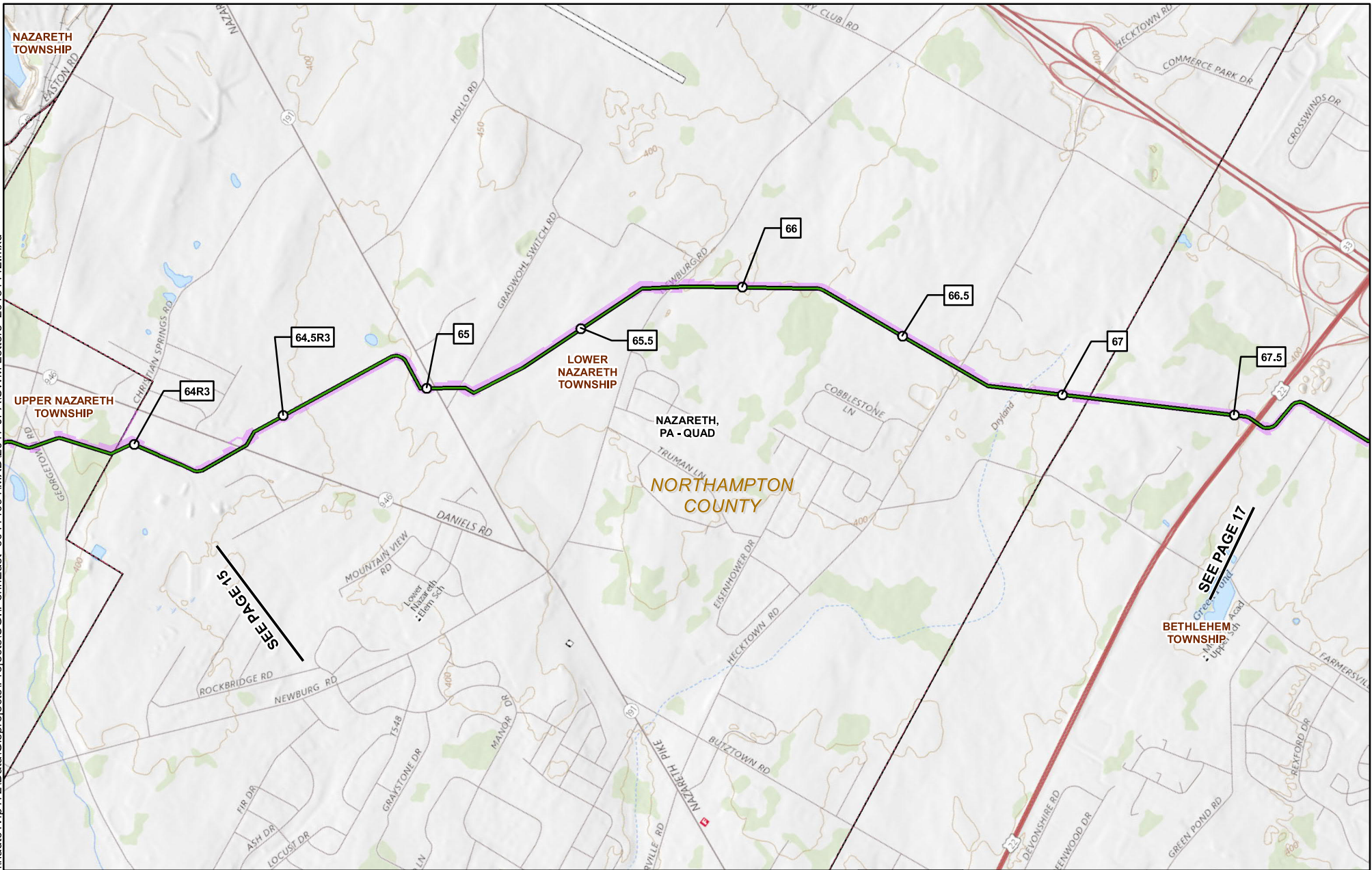


ABSOLUTE SCALE:
1:24,000

REFERENCE SCALE:
1 IN = 2,000 FT



DRAWN BY: KFS
CHECKED BY:
APPROVED BY:
REV. DATE: 11/19/2018
REVISION:
DESC: ISSUED FOR PERMITTING
PAGE: PAGE 15 OF 20



1	MILEPOST		PROPOSED CONSTRUCTION LIMIT
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)		USGS QUADRANGLE BOUNDARY
	PROPOSED PERMANENT ABOVE GROUND FACILITY		TOWNSHIP BOUNDARY
	PROPOSED HELLERTOWN LATERAL		COUNTY BOUNDARY
	PROPOSED PENNEAST PIPELINE CENTERLINE		STATE BOUNDARY

PENNEAST PIPELINE PROJECT USGS QUADRANGLE MAP

**NORTHAMPTON COUNTY,
PENNSYLVANIA**

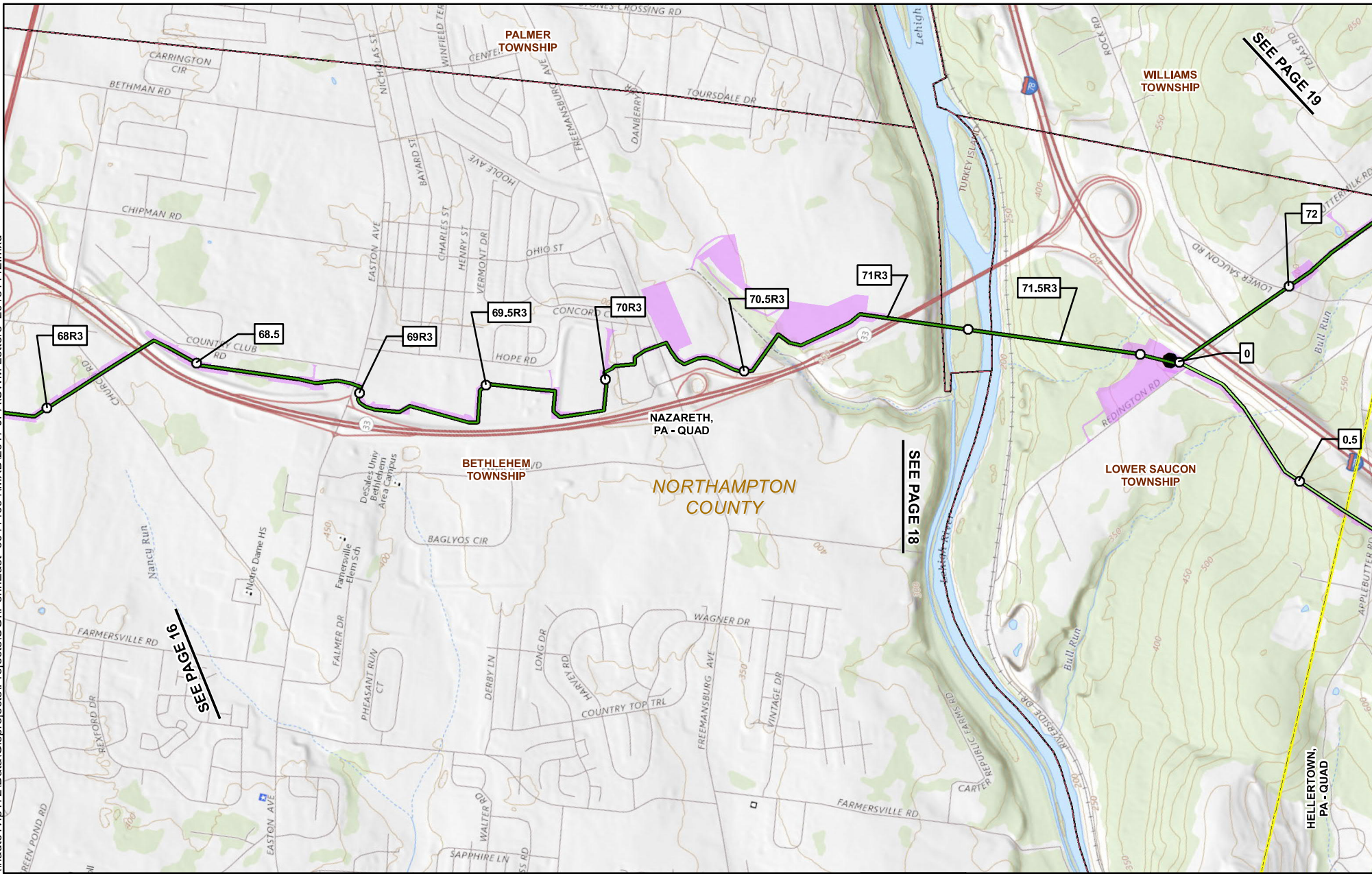


ABSOLUTE SCALE:
1:24,000

REFERENCE SCALE:
1 IN = 2,000 FT



DRAWN BY: KFS
CHECKED BY:
APPROVED BY:
REV. DATE: 11/19/2018
REVISION:
DESC: ISSUED FOR PERMITTING
PAGE: PAGE 16 OF 20



SEE PAGE 19

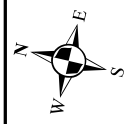
SEE PAGE 18

SEE PAGE 16

1	MILEPOST		PROPOSED CONSTRUCTION LIMIT
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)		USGS QUADRANGLE BOUNDARY
	PROPOSED PERMANENT ABOVE GROUND FACILITY		TOWNSHIP BOUNDARY
	PROPOSED HELLERTOWN LATERAL		COUNTY BOUNDARY
	PROPOSED PENNEAST PIPELINE CENTERLINE		STATE BOUNDARY

PENNEAST PIPELINE PROJECT USGS QUADRANGLE MAP

**NORTHAMPTON COUNTY,
PENNSYLVANIA**

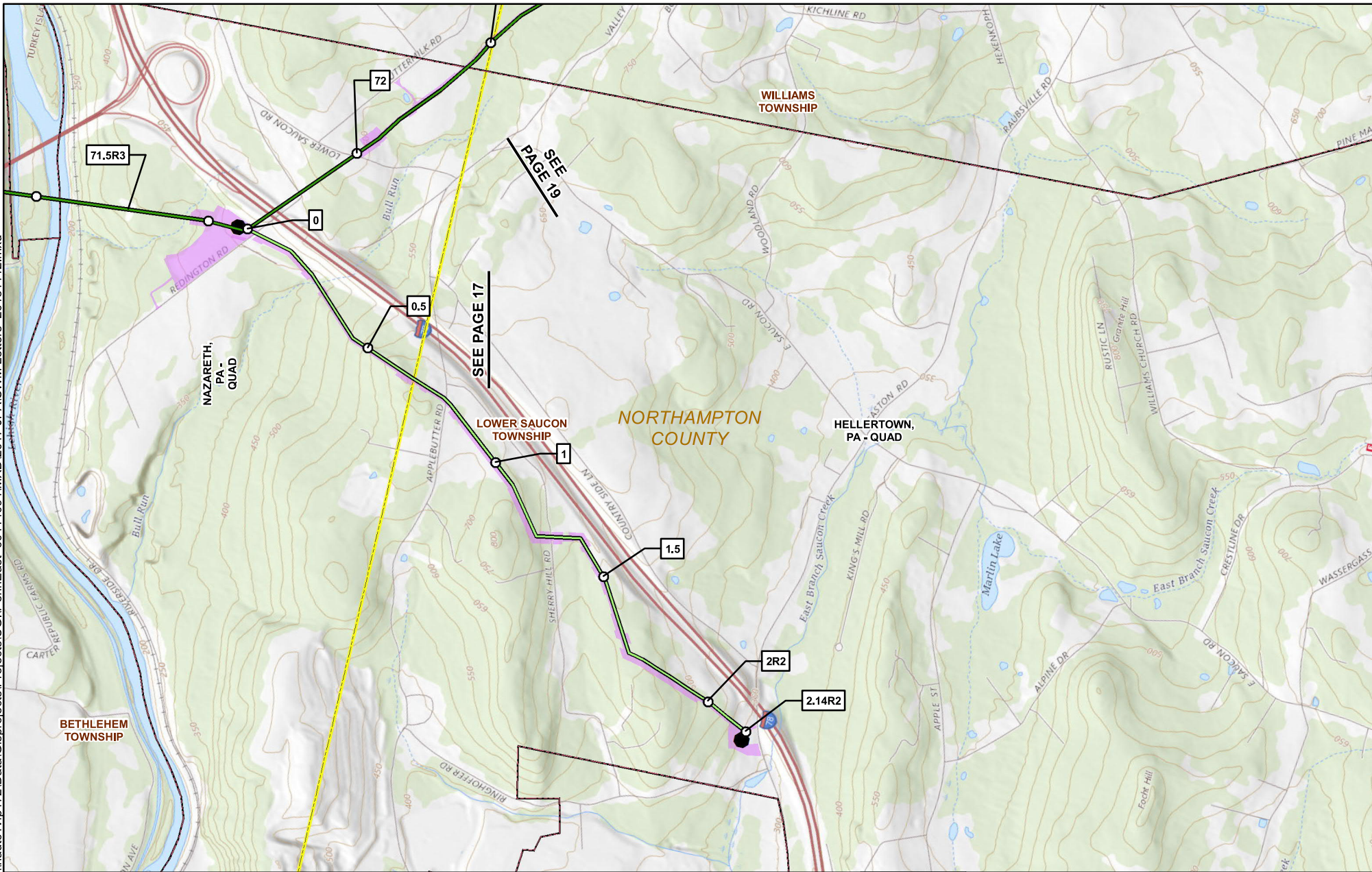


ABSOLUTE SCALE:
1:24,000

REFERENCE SCALE:
1 IN = 2,000 FT



DRAWN BY: KFS
CHECKED BY:
APPROVED BY:
REV. DATE: 11/19/2018
REVISION:
DESC: ISSUED FOR PERMITTING
PAGE: PAGE 17 OF 20



1	MILEPOST		PROPOSED CONSTRUCTION LIMIT
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)		USGS QUADRANGLE BOUNDARY
	PROPOSED PERMANENT ABOVE GROUND FACILITY		TOWNSHIP BOUNDARY
	PROPOSED HELLERTOWN LATERAL		COUNTY BOUNDARY
	PROPOSED PENNEAST PIPELINE CENTERLINE		STATE BOUNDARY

PENNEAST PIPELINE PROJECT USGS QUADRANGLE MAP

**NORTHAMPTON COUNTY,
PENNSYLVANIA**



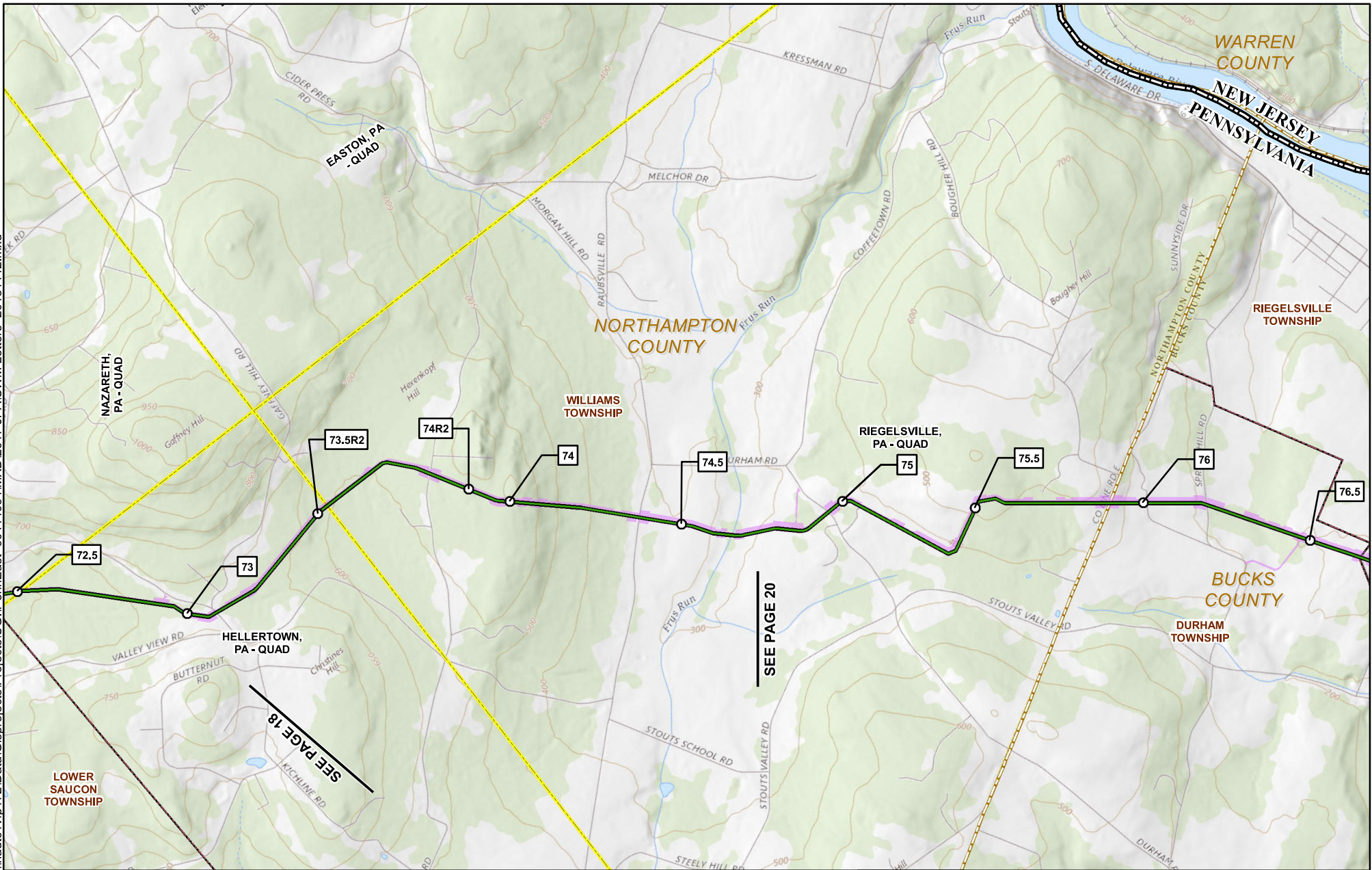
ABSOLUTE SCALE:
1:24,000

REFERENCE SCALE:
1 IN = 2,000 FT



DRAWN BY: KFS
CHECKED BY:
APPROVED BY:
REV. DATE: 11/19/2018
REVISION:
DESC: ISSUED FOR PERMITTING
PAGE: PAGE 18 OF 20

I:\nadc\1\vp\172\GIS\Projects\UG\IPennEast_60414094\MXD\2017_JPA\SWM Letters 2018\112.mxd



1	MILEPOST	PROPOSED CONSTRUCTION LIMIT
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)	USGS QUADRANGLE BOUNDARY
●	PROPOSED PERMANENT ABOVE GROUND FACILITY	TOWNSHIP BOUNDARY
—	PROPOSED HELLERTOWN LATERAL	COUNTY BOUNDARY
—	PROPOSED PENNEAST PIPELINE CENTERLINE	STATE BOUNDARY

PENNEAST PIPELINE PROJECT USGS QUADRANGLE MAP

NORTHAMPTON & BUCKS COUNTIES, PENNSYLVANIA



ABSOLUTE SCALE:
1:24,000

REFERENCE SCALE:
1 IN = 2,000 FT



DRAWN BY: KFS
CHECKED BY:
APPROVED BY:
REV. DATE: 11/19/2018
REVISION:
DESC: ISSUED FOR PERMITTING
PAGE: PAGE 19 OF 20

Form



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

GENERAL INFORMATION FORM – AUTHORIZATION APPLICATION

Before completing this General Information Form (GIF), read the step-by-step instructions provided in this application package. This version of the General Information Form (GIF) must be completed and returned with any program-specific application being submitted to the Department.

Related ID#s (If Known) Client ID# _____ APS ID# _____ Site ID# _____ Auth ID# _____ Facility ID# _____		DEP USE ONLY Date Received & General Notes
--	--	--

CLIENT INFORMATION

DEP Client ID#	Client Type / Code			
	LLC			
Organization Name or Registered Fictitious Name	Employer ID# (EIN)	Dun & Bradstreet ID#		
PennEast Pipeline Company LLC	47-1573364			
Individual Last Name	First Name	MI	Suffix	SSN
Additional Individual Last Name	First Name	MI	Suffix	SSN
Mailing Address Line 1	Mailing Address Line 2			
1 Meridian Boulevard	Suite 2C01			
Address Last Line – City	State	ZIP+4	Country	
Wyomissing	PA	19610	USA	
Client Contact Last Name	First Name	MI	Suffix	
Holly	Amber			
Client Contact Title	Phone		Ext	
Environmental Project Manager	610-373-7999		1172	
Email Address	FAX			
aholly@ugies.com				

SITE INFORMATION

DEP Site ID#	Site Name				
	PennEast Pipeline Project				
EPA ID#	Estimated Number of Employees to be Present at Site				
Description of Site	Proposed natural gas pipeline right-of-way and the associated temporary workspace, compressor station, appurtenant facilities, access roads, staging areas, and wareyards necessary to construct the Project. Additional site description information is provided in JPA Section J - Project Narrative.				
County Name	Municipality	City	Boro	Twp	State
Luzerne, Carbon, Monroe, Northampton, and Bucks	(Luzerne:) Bear Creek Twp, Dallas Twp, Jenkins Twp, Kingston Twp, Plains Twp, West Wyoming Borough, Wyoming Borough, (Carbon:) Kidder Twp, Lower Towamensing Twp, Penn Forest Twp, Towamensing Twp, (Monroe:) Eldred Twp, (Northampton:) Bethlehem Twp, East Allen Twp, Easton City, Lower Nazareth Twp, Lower Saucon Twp, Moore Twp, Upper Nazareth Twp, Williams Twp, (Bucks:) Durham Twp, Riegelsville Borough	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	PA
County Name	Municipality	City	Boro	Twp	State
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Site Location Line 1	Site Location Line 2				
The PA portion of the PennEast Mainline Pipeline begins in Dallas Twp, Luzerne County and extends to Durham	The Hellertown Lateral is located in Lower Saucon Twp, Northampton County. Additional site location information				

Twp, Bucks County. Additional site location information is provided in JPA Section J - Project Narrative.

Site Location Last Line – City State ZIP+4

Detailed Written Directions to Site

From Wilkes-Barre: head north on PA-309. At the intersection with State Route 415, bear right to continue on State Route 309/Tunkhannock Highway. After 1 mile, turn right on Upper Demunds Road. Immediately turn right on Hildebrandt Road. After 0.7 mile, turn right onto an unnamed road and follow 0.25 mile to the Wyoming Interconnect and the start of the PennEast Mainline. The entry and exit location for each county crossed by the Project is provided in JPA Section J - Project Narrative.

Site Contact Last Name Holly		First Name Amber	MI	Suffix
Site Contact Title Environmental Project Manager		Site Contact Firm UGI Energy Services, LLC		
Mailing Address Line 1 1 Meridian Boulevard		Mailing Address Line 2 Suite 2C01		
Mailing Address Last Line – City Wyomissing		State PA	ZIP+4 19610	
Phone 610-373-7999	Ext 1172	FAX	Email Address aholly@ugies.com	
NAICS Codes (Two- & Three-Digit Codes – List All That Apply) 22, 23, 48			6-Digit Code (Optional) 221210, 237120, 486210	
Client to Site Relationship OWNOP				

FACILITY INFORMATION

Modification of Existing Facility		Yes	No
1.	Will this project modify an existing facility, system, or activity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.	Will this project involve an addition to an existing facility, system, or activity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If "Yes", check all relevant facility types and provide DEP facility identification numbers below.

Facility Type	DEP Fac ID#	Facility Type	DEP Fac ID#
<input type="checkbox"/> Air Emission Plant	_____	<input type="checkbox"/> Industrial Minerals Mining Operation	_____
<input type="checkbox"/> Beneficial Use (water)	_____	<input type="checkbox"/> Laboratory Location	_____
<input type="checkbox"/> Blasting Operation	_____	<input type="checkbox"/> Land Recycling Cleanup Location	_____
<input type="checkbox"/> Captive Hazardous Waste Operation	_____	<input type="checkbox"/> Mine DrainageTrmt/LandRecyProjLocation	_____
<input type="checkbox"/> Coal Ash Beneficial Use Operation	_____	<input type="checkbox"/> Municipal Waste Operation	_____
<input type="checkbox"/> Coal Mining Operation	_____	<input type="checkbox"/> Oil & Gas Encroachment Location	_____
<input type="checkbox"/> Coal Pillar Location	_____	<input type="checkbox"/> Oil & Gas Location	_____
<input type="checkbox"/> Commercial Hazardous Waste Operation	_____	<input type="checkbox"/> Oil & Gas Water Poll Control Facility	_____
<input type="checkbox"/> Dam Location	_____	<input type="checkbox"/> Oil & Gas Wastewater Storage Impoundment	_____
<input type="checkbox"/> Deep Mine Safety Operation -Anthracite	_____	<input type="checkbox"/> Public Water Supply System	_____
<input type="checkbox"/> Deep Mine Safety Operation -Bituminous	_____	<input type="checkbox"/> Radiation Facility	_____
<input type="checkbox"/> Deep Mine Safety Operation -Ind Minerals	_____	<input type="checkbox"/> Residual Waste Operation	_____
<input type="checkbox"/> Encroachment Location (water, wetland)	_____	<input type="checkbox"/> Storage Tank Location	_____
<input type="checkbox"/> Erosion & Sediment Control Facility	_____	<input type="checkbox"/> Water Pollution Control Facility	_____
<input type="checkbox"/> Explosive Storage Location	_____	<input type="checkbox"/> Water Resource	_____
		<input type="checkbox"/> Other:	_____

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
Station 0+00	41	20	48	75	56	43
Horizontal Accuracy Measure	Feet			--or-- Meters		
Horizontal Reference Datum Code	<input type="checkbox"/> North American Datum of 1927 <input type="checkbox"/> North American Datum of 1983 <input checked="" type="checkbox"/> World Geodetic System of 1984					
Horizontal Collection Method Code	GISDR					
Reference Point Code	CENTER					
Altitude	Feet 1280			--or-- Meters		
Altitude Datum Name	<input type="checkbox"/> The National Geodetic Vertical Datum of 1929 <input checked="" type="checkbox"/> The North American Vertical Datum of 1988 (NAVD88)					

Altitude (Vertical) Location Datum Collection Method Code	TOPO	
Geometric Type Code	POINT	
Data Collection Date	12/08/2018	
Source Map Scale Number	1	Inch(es) = 2000 Feet
	--or--	Centimeter(s) = Meters

PROJECT INFORMATION

Project Name
PennEast Pipeline Project

Project Description
See Project Description in JPA Section J

Project Consultant Last Name	First Name	MI	Suffix
Binckley	Sarah	K	

Project Consultant Title
Project Manager

Consulting Firm
AECOM

Mailing Address Line 1	Mailing Address Line 2
625 West Ridge Pike	Suite E-100
Address Last Line - City	State
Conshohocken	PA
	ZIP+4
	19428

Phone	Ext	FAX	Email Address
610-832-2713		610-832-3501	sarah.binckley@aecom.com

Time Schedules	Project Milestone (Optional)
09/2015	PennEast submitted FERC Application for Certificate of Public Convenience and Necessity
02/2016 - 03/2016	PennEast submitted PADEP Joint Permit Applications and ESCGP-2 applications
01/2018	Received FERC Certificate of Public Convenience and Necessity
12/2018	PennEast submits revised Joint Permit Applications and ESCGP-3 applications

- Have you informed the surrounding community and addressed any concerns prior to submitting the application to the Department? Yes No
- Is your project funded by state or federal grants? Yes No
Note: If "Yes", specify what aspect of the project is related to the grant and provide the grant source, contact person and grant expiration date.
 Aspect of Project Related to Grant: _____
 Grant Source: _____
 Grant Contact Person: _____
 Grant Expiration Date: _____
- Is this application for an authorization on Appendix A of the Land Use Policy? (For referenced list, see Appendix A of the Land Use Policy attached to GIF instructions) Yes No
Note: If "No" to Question 3, the application is not subject to the Land Use Policy.
 If "Yes" to Question 3, the application is subject to this policy and the Applicant should answer the additional questions in the Land Use Information section.

LAND USE INFORMATION

Note: Applicants are encouraged to submit copies of local land use approvals or other evidence of compliance with local comprehensive plans and zoning ordinances.

- Is there an adopted county or multi-county comprehensive plan? Yes No
- Is there an adopted municipal or multi-municipal comprehensive plan? Yes No
- Is there an adopted county-wide zoning ordinance, municipal zoning ordinance or joint municipal zoning ordinance? Yes No
Note: If the Applicant answers "No" to either Questions 1, 2 or 3, the provisions of the PA MPC are not applicable and the Applicant does not need to respond to questions 4 and 5 below.
 If the Applicant answers "Yes" to questions 1, 2 and 3, the Applicant should respond to questions 4 and 5 below.
- Does the proposed project meet the provisions of the zoning ordinance or does the proposed project have zoning approval? If zoning approval has been received, attach documentation. Yes No
- Have you attached Municipal and County Land Use Letters for the project? Yes No

COORDINATION INFORMATION

Note: The PA Historical and Museum Commission must be notified of proposed projects in accordance with DEP Technical Guidance Document 012-0700-001 and the accompanying Cultural Resource Notice Form.

If the activity will be a mining project (i.e., mining of coal or industrial minerals, coal refuse disposal and/or the operation of a coal or industrial minerals preparation/processing facility), respond to questions 1.0 through 2.5 below.

If the activity will not be a mining project, skip questions 1.0 through 2.5 and begin with question 3.0.

1.0	Is this a coal mining project? If "Yes", respond to 1.1-1.6. If "No", skip to Question 2.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
1.1	Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be equal to or greater than 200 tons/day?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.2	Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be greater than 50,000 tons/year?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.3	Will this coal mining project involve coal preparation/ processing activities in which thermal coal dryers or pneumatic coal cleaners will be used?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.4	For this coal mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.5	Will this coal mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.6	Will this coal mining project involve underground coal mining to be conducted within 500 feet of an oil or gas well?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.0	Is this a non-coal (industrial minerals) mining project? If "Yes", respond to 2.1-2.6. If "No", skip to Question 3.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
2.1	Will this non-coal (industrial minerals) mining project involve the crushing and screening of non-coal minerals other than sand and gravel?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.2	Will this non-coal (industrial minerals) mining project involve the crushing and/or screening of sand and gravel with the exception of wet sand and gravel operations (screening only) and dry sand and gravel operations with a capacity of less than 150 tons/hour of unconsolidated materials?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.3	Will this non-coal (industrial minerals) mining project involve the construction, operation and/or modification of a portable non-metallic (i.e., non-coal) minerals processing plant under the authority of the General Permit for Portable Non-metallic Mineral Processing Plants (i.e., BAQ-PGPA/GP-3)?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.4	For this non-coal (industrial minerals) mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.5	Will this non-coal (industrial minerals) mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No

3.0	Will your project, activity, or authorization have anything to do with a well related to oil or gas production, have construction within 200 feet of, affect an oil or gas well, involve the waste from such a well, or string power lines above an oil or gas well? If "Yes", respond to 3.1-3.3. If "No", skip to Question 4.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
3.1	Does the oil- or gas-related project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water (including wetlands)?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
3.2	Will the oil- or gas-related project involve discharge of industrial wastewater or stormwater to a dry swale, surface water, ground water or an existing sanitary sewer system or storm water system? If "Yes", discuss in <i>Project Description</i> .	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
3.3	Will the oil- or gas-related project involve the construction and operation of industrial waste treatment facilities?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
4.0	Will the project involve a construction activity that results in earth disturbance? If "Yes", specify the total disturbed acreage. 4.0.1 Total Disturbed Acreage 1289.4	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.0	Does the project involve any of the following? If "Yes", respond to 5.1-5.3. If "No", skip to Question 6.0.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.1	Water Obstruction and Encroachment Projects – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.2	Wetland Impacts – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a wetland?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.3	Floodplain Projects by the commonwealth, a Political Subdivision of the commonwealth or a Public Utility – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a floodplain?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
6.0	Will the project involve discharge of stormwater or wastewater from an industrial activity to a dry swale, surface water, ground water or an existing sanitary sewer system or separate storm water system?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
7.0	Will the project involve the construction and operation of industrial waste treatment facilities?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
8.0	Will the project involve construction of sewage treatment facilities, sanitary sewers, or sewage pumping stations? If "Yes", indicate estimated proposed flow (gal/day). Also, discuss the sanitary sewer pipe sizes and the number of pumping stations/treatment facilities/name of downstream sewage facilities in the <i>Project Description</i> , where applicable. 8.0.1 Estimated Proposed Flow (gal/day)	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
9.0	Will the project involve the subdivision of land, or the generation of 800 gpd or more of sewage on an existing parcel of land or the generation of an additional 400 gpd of sewage on an already-developed parcel, or the generation of 800 gpd or more of industrial wastewater that would be discharged to an existing sanitary sewer system? 9.0.1 Was Act 537 sewage facilities planning submitted and approved by DEP? If "Yes" attach the approval letter. Approval required prior to 105/NPDES approval.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
10.0	Is this project for the beneficial use of biosolids for land application within Pennsylvania? If "Yes" indicate how much (i.e. gallons or dry tons per year). 10.0.1 Gallons Per Year (residential septage) _____ 10.0.2 Dry Tons Per Year (biosolids) _____	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
11.0	Does the project involve construction, modification or removal of a dam? If "Yes", identify the dam. 11.0.1 Dam Name	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No

12.0	Will the project interfere with the flow from, or otherwise impact, a dam? If "Yes", identify the dam.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
12.0.1	Dam Name				
13.0	Will the project involve operations (excluding during the construction period) that produce air emissions (i.e., NOX, VOC, etc.)? If "Yes", identify each type of emission followed by the amount of that emission.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
13.0.1	Enter all types & amounts of emissions; separate each set with semicolons.	The Project operational total Potential to Emit (PTE) in tons per year includes: NOx – 141; CO – 141; SO2 – 5.8; PM10 – 28; PM2.5 – 28; VOC – 13; GHG – 260,800; CH2O – 3.9; Total HAPs – 5.1			
14.0	Does the project include the construction or modification of a drinking water supply to serve 15 or more connections or 25 or more people, at least 60 days out of the year? If "Yes", check all proposed sub-facilities.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
14.0.1	Number of Persons Served				
14.0.2	Number of Employee/Guests				
14.0.3	Number of Connections				
14.0.4	Sub-Fac: Distribution System	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.5	Sub-Fac: Water Treatment Plant	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.6	Sub-Fac: Source	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.7	Sub-Fac: Pump Station	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.8	Sub Fac: Transmission Main	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.9	Sub-Fac: Storage Facility	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
15.0	Will your project include infiltration of storm water or waste water to ground water within one-half mile of a public water supply well, spring or infiltration gallery?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
16.0	Is your project to be served by an existing public water supply? If "Yes", indicate name of supplier and attach letter from supplier stating that it will serve the project.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
16.0.1	Supplier's Name				
16.0.2	Letter of Approval from Supplier is Attached	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
17.0	Will this project involve a new or increased drinking water withdrawal from a stream or other water body? If "Yes", should reference both Water Supply and Watershed Management.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
17.0.1	Stream Name				
18.0	Will the construction or operation of this project involve treatment, storage, reuse, or disposal of waste? If "Yes", indicate what type (i.e., hazardous, municipal (including infectious & chemotherapeutic), residual) and the amount to be treated, stored, re-used or disposed.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
18.0.1	Type & Amount				
19.0	Will your project involve the removal of coal, minerals, etc. as part of any earth disturbance activities?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
20.0	Does your project involve installation of a field constructed underground storage tank? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
20.0.1	Enter all substances & capacity of each; separate each set with semicolons.				
21.0	Does your project involve installation of an aboveground storage tank greater than 21,000 gallons capacity at an existing facility? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
21.0.1	Enter all substances & capacity of each; separate each set with semicolons.				

22.0 Does your project involve installation of a tank greater than 1,100 gallons which will contain a highly hazardous substance as defined in DEP's Regulated Substances List, 2570-BK-DEP2724? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit. Yes No

22.0.1 Enter all substances & capacity of each; separate each set with semicolons.

23.0 Does your project involve installation of a storage tank at a new facility with a total AST capacity greater than 21,000 gallons? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit. Yes No

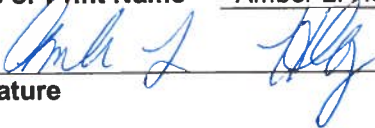
23.0.1 Enter all substances & capacity of each; separate each set with semicolons.

24.0 Will the intended activity involve the use of a radiation source? Yes No

CERTIFICATION

I certify that I have the authority to submit this application on behalf of the applicant named herein and that the information provided in this application is true and correct to the best of my knowledge and information.

Type or Print Name Amber L. Holly



Environmental Project Manager

Signature

Title

12/10/18

Date


Subject:

FW: FedEx Shipment 773980394524 Delivered

Your package has been delivered

Tracking # 773980394524

Ship date: Mon, 12/17/2018	Delivery date: Tue, 12/18/2018 9:56 am
Sarah Binckley AECOM CONSHOHOCKEN, PA 19428 US	Linda Zembo Northampton County 3rd Floor Room 3116 669 Washington Street EASTON, PA 18042 US




Delivered



Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	773980394524
Status:	Delivered: 12/18/2018 09:56 AM Signed for By: T.GERBINO
Reference:	60414094. 20000363.00035.08.
Signed for by:	T.GERBINO
Delivery location:	EASTON, PA
Delivered to:	Mailroom
Service type:	FedEx Standard Overnight®
Packaging type:	FedEx® Envelope
Number of pieces:	1
Weight:	0.50 lb.
Special handling/Services:	Deliver Weekday
Standard transit:	12/18/2018 by 3:00 pm

 Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 8:59 AM CST on 12/18/2018.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

Standard transit is the date and time the package is scheduled to be delivered by, based on the selected service, destination and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

© 2018 Federal Express Corporation. The content of this message is protected by copyright and trademark laws under U.S. and international law. Review our [privacy policy](#). All rights reserved.

Thank you for your business.



625 West Ridge Pike
Suite E-100
Conshohocken, PA 19428
www.aecom.com
www.urs.com

610 832 3500 tel
610 832 3501 fax

December 17, 2018

Becky Bradley
Lehigh Valley Planning Commission
961 Marcon Boulevard – Suite 310
Allentown, PA 18109

**RE: PennEast Pipeline Project
Updated County Notification
Northampton County, Pennsylvania**

Dear Becky Bradley,

The purpose of this notice is to inform you of PennEast Pipeline Company, LLC's (PennEast's) intent to submit an updated application for coverage under the Erosion and Sediment Control General Permit (ESCGP) for Earth Disturbance Associated with Oil & Gas Exploration, Production, Processing or Treatment Operations Facilities and an updated Chapter 105 Water Obstruction and Encroachment Permit from the Pennsylvania Department of Environmental Protection (PADEP) and satisfy the requirements of Acts 14, 67, 68, and 127 and the Pennsylvania Municipalities Planning Code for the following project:

1. Project Name: PennEast Pipeline Project (Project)
2. Project Description: PennEast proposes to construct, install and operate approximately 115 miles of 36-inch diameter natural gas pipeline from Luzerne County, Pennsylvania to Mercer County, New Jersey. The Project will extend from various receipt point interconnections in the eastern Marcellus region to various delivery point interconnections in northeastern natural gas-consuming markets. The Project is designed to provide the lowest cost natural gas produced in the Marcellus Shale region to homes and businesses in Pennsylvania and adjacent states.

Within Northampton County, PennEast proposes to construct approximately 23.7 miles of 36-inch diameter pipeline, including the following:

- Approximately 7.6 miles in Moore Township between Mile Post (MP) 51.7R3 and MP 60.3;
- Approximately 0.8 mile in East Allen Township between MP 60.3 and MP 61.16;
- Approximately 3.0 miles in Upper Nazareth Township between MP 61.2 and MP 63.9;
- Approximately 3.2 miles in Lower Nazareth Township between MP 63.9 and MP 67.1;
- Approximately 4.1 miles in Bethlehem Township between MP 67.1 and MP 70.9;
- Approximately 0.1 miles in Easton City between MP 70.9 and MP 71.1;

- Approximately 1.3 miles in Lower Saucon Township between MP 71.1 and MP 72.4; and
- Approximately 3.6 miles in Williams Township between MP 72.4 and MP 75.9.

The Hellertown Lateral, an approximately 2.1 miles lateral of 24-inch diameter pipe, will also be constructed in Lower Saucon Township, Northampton County. The Hellertown Lateral interconnects with the PennEast Mainline Route at MP 71.6.

Various associated aboveground facilities will be constructed to support the pipeline system. PennEast proposes to construct the following new facilities in Northampton County:

- Mainline block valve (MLV)-6 at MP 57 in Moore Township;
- MLV-7 at MP 62.4R3 in Upper Nazareth Township;
- Hellertown Launcher & Mainline Launcher/Receiver/MLV-8 at MP 71.6 in Lower Saucon Township; and
- TCO (Columbia Gas Transmission, LLC) and UGI-LEH Interconnects (UGI Utilities, Inc.) at MP HL-2.14R2 in Lower Saucon Township.

3. Applicant Name: PennEast Pipeline Company, LLC

4. Applicant Contact: Amber Holly, Environmental Project Manager
1 Meridian Boulevard, Suite 2C01
Wyomissing, PA 19610
Phone: 610-373-7999 x1172

5. Site Location: Please refer to the enclosed Location Map. The project can be accessed via 26 access roads in Northampton County, Pennsylvania.

6. Municipality/County: Northampton County, Pennsylvania

Section 1905-A of the Commonwealth Administrative Code, as amended by Act 14, requires that each applicant for a PADEP permit must give written notice to the municipality(ies) and the county(ies) in which the permitted activity is located. The written notices shall be received by the municipality(ies) and county(ies) at least 30 days before the PADEP may issue or deny the permit.

Acts 67 and 68, which amended the Municipalities Planning Code to support sound land use practices and planning efforts, direct state agencies to consider comprehensive plans and zoning ordinances when reviewing applications for permitting of facilities or infrastructure, and specify that state agencies may rely upon comprehensive plans and zoning ordinances under certain conditions as described in Sections 619.2 and 1105 of the Municipalities Planning Code.

Enclosed is a Location Map (Attachment 1) for this Project and a copy of the PADEP General Information Form (GIF) (Attachment 2) prepared by AECOM Technical Services, Inc. (AECOM) on behalf of the applicant for this Project. PADEP invites you to comment on the land use aspects of this Project; please be specific to PADEP when identifying any areas of conflict. If you wish to submit comments for PADEP to consider in a land use review of this Project, you must respond within 30 days to the PADEP regional office listed below.



Pennsylvania Department of Environmental Protection
Northeast Regional Office
2 Public Square
Wilkes-Barre, PA 18701-1915

If there are no land use comments are received by the end of the comment period, PADEP will assume that there are no substantive land use conflicts and proceed with the normal application review process.

For more information about this land use review process, please visit www.depweb.state.pa.us (Keyword: Land Use Reviews).

Sincerely,

AECOM

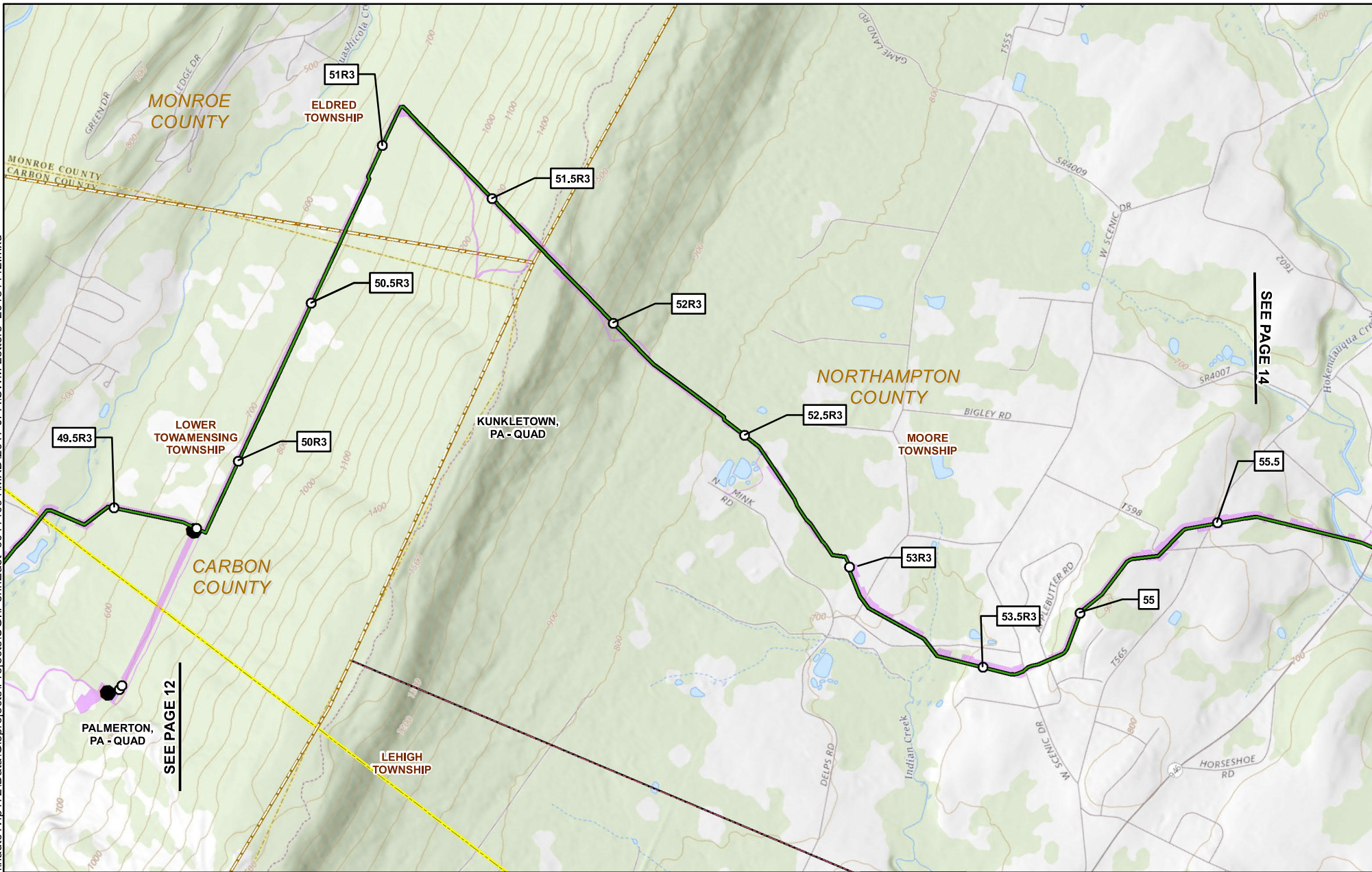
A handwritten signature in black ink that reads "Sarah K. Binckley". The signature is written in a cursive, flowing style.

Sarah K. Binckley
625 W Ridge Pike, Suite E-100
Conshohocken, PA 19428
sarah.binckley@aecom.com
610-832-2713

Copy: Amber Holly, UGI Energy Services, Inc.

Enclosures: (1) Location Map
(2) PADEP General Information Form

\\nadc1vfp172\Data\GIS\projects\UG\PennEast_60414094\MXD\2017_JPA\SWM\Letters_2018\112.mxd



SEE PAGE 12

SEE PAGE 14

1	MILEPOST		PROPOSED CONSTRUCTION LIMIT
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)		USGS QUADRANGLE BOUNDARY
	PROPOSED PERMANENT ABOVE GROUND FACILITY		TOWNSHIP BOUNDARY
	PROPOSED HELLERTOWN LATERAL		COUNTY BOUNDARY
	PROPOSED PENNEAST PIPELINE CENTERLINE		STATE BOUNDARY

PENNEAST PIPELINE PROJECT USGS QUADRANGLE MAP

CARBON, MONROE, & NORTHAMPTON COUNTIES,
PENNSYLVANIA



ABSOLUTE SCALE:
1:24,000

REFERENCE SCALE:
1 IN = 2,000 FT



DRAWN BY: KFS

CHECKED BY:

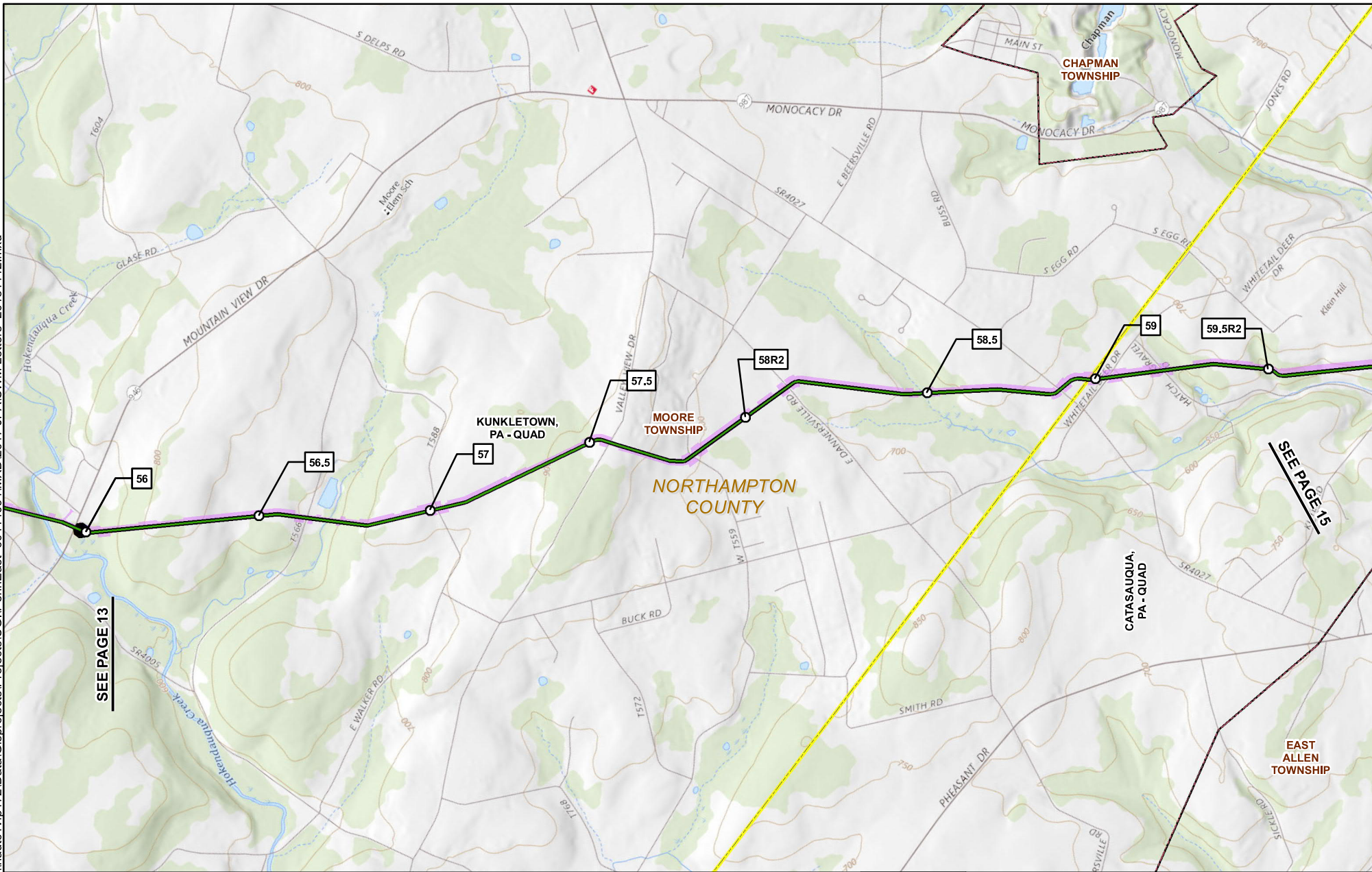
APPROVED BY:

REV. DATE: 11/19/2018

REVISION:

DESC: ISSUED FOR PERMITTING

PAGE: PAGE 13 OF 20



1	MILEPOST		PROPOSED CONSTRUCTION LIMIT
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)		USGS QUADRANGLE BOUNDARY
	PROPOSED PERMANENT ABOVE GROUND FACILITY		TOWNSHIP BOUNDARY
	PROPOSED HELLERTOWN LATERAL		COUNTY BOUNDARY
	PROPOSED PENNEAST PIPELINE CENTERLINE		STATE BOUNDARY

PENNEAST PIPELINE PROJECT
USGS QUADRANGLE MAP

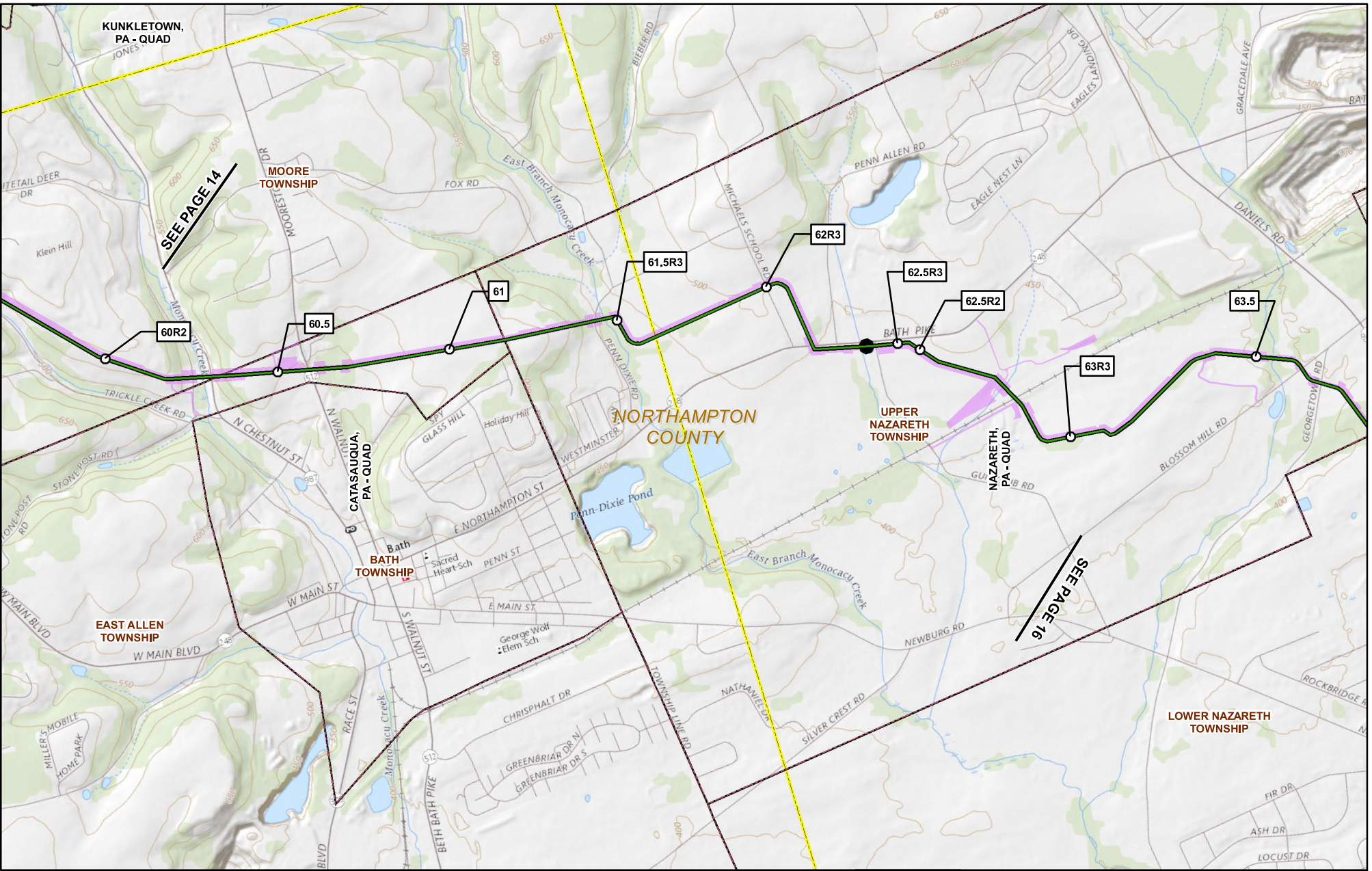
NORTHAMPTON COUNTY, PENNSYLVANIA

ABSOLUTE SCALE: 1:24,000

REFERENCE SCALE: 1 IN = 2,000 FT

DRAWN BY: KFS
CHECKED BY:
APPROVED BY:
REV. DATE: 11/19/2018
REVISION:
DESC: ISSUED FOR PERMITTING
PAGE: PAGE 14 OF 20

\\nadc1vfp172\Data\GIS\Projects\UG\PenEast_60414094\MXD\2017_JPA\SVM Letters 2018\112.mxd



SEE PAGE 14

SEE PAGE 16

1	MILEPOST		PROPOSED CONSTRUCTION LIMIT
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)		USGS QUADRANGLE BOUNDARY
	PROPOSED PERMANENT ABOVE GROUND FACILITY		TOWNSHIP BOUNDARY
	PROPOSED HELLERTOWN LATERAL		COUNTY BOUNDARY
	PROPOSED PENNEAST PIPELINE CENTERLINE		STATE BOUNDARY

PENNEAST PIPELINE PROJECT USGS QUADRANGLE MAP

**NORTHAMPTON COUNTY,
PENNSYLVANIA**

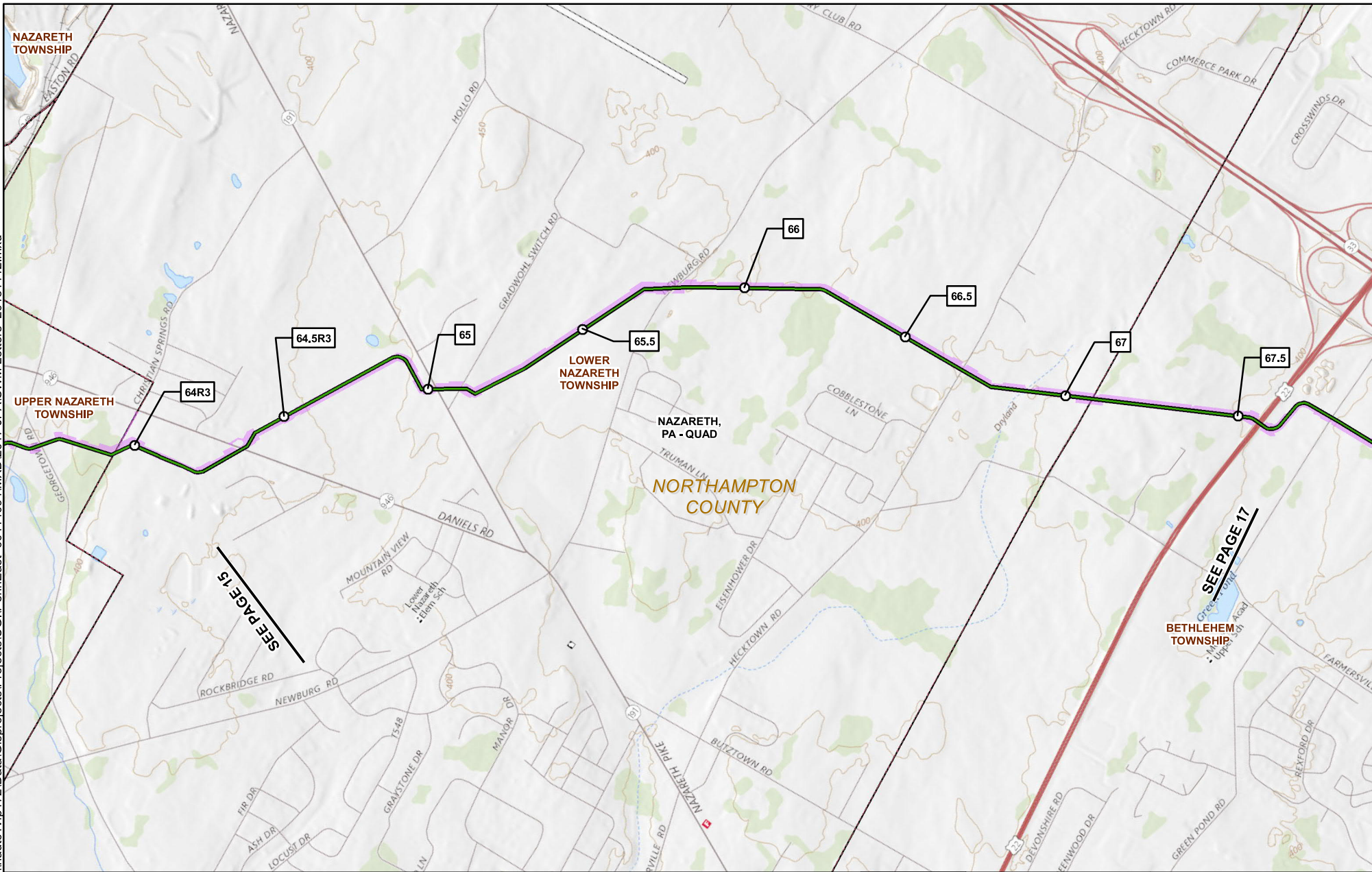


ABSOLUTE SCALE:
1:24,000

REFERENCE SCALE:
1 IN = 2,000 FT



DRAWN BY: KFS
CHECKED BY:
APPROVED BY:
REV. DATE: 11/19/2018
REVISION:
DESC: ISSUED FOR PERMITTING
PAGE: PAGE 15 OF 20



1	MILEPOST		PROPOSED CONSTRUCTION LIMIT
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)		USGS QUADRANGLE BOUNDARY
	PROPOSED PERMANENT ABOVE GROUND FACILITY		TOWNSHIP BOUNDARY
	PROPOSED HELLERTOWN LATERAL		COUNTY BOUNDARY
	PROPOSED PENNEAST PIPELINE CENTERLINE		STATE BOUNDARY

PENNEAST PIPELINE PROJECT USGS QUADRANGLE MAP

**NORTHAMPTON COUNTY,
PENNSYLVANIA**

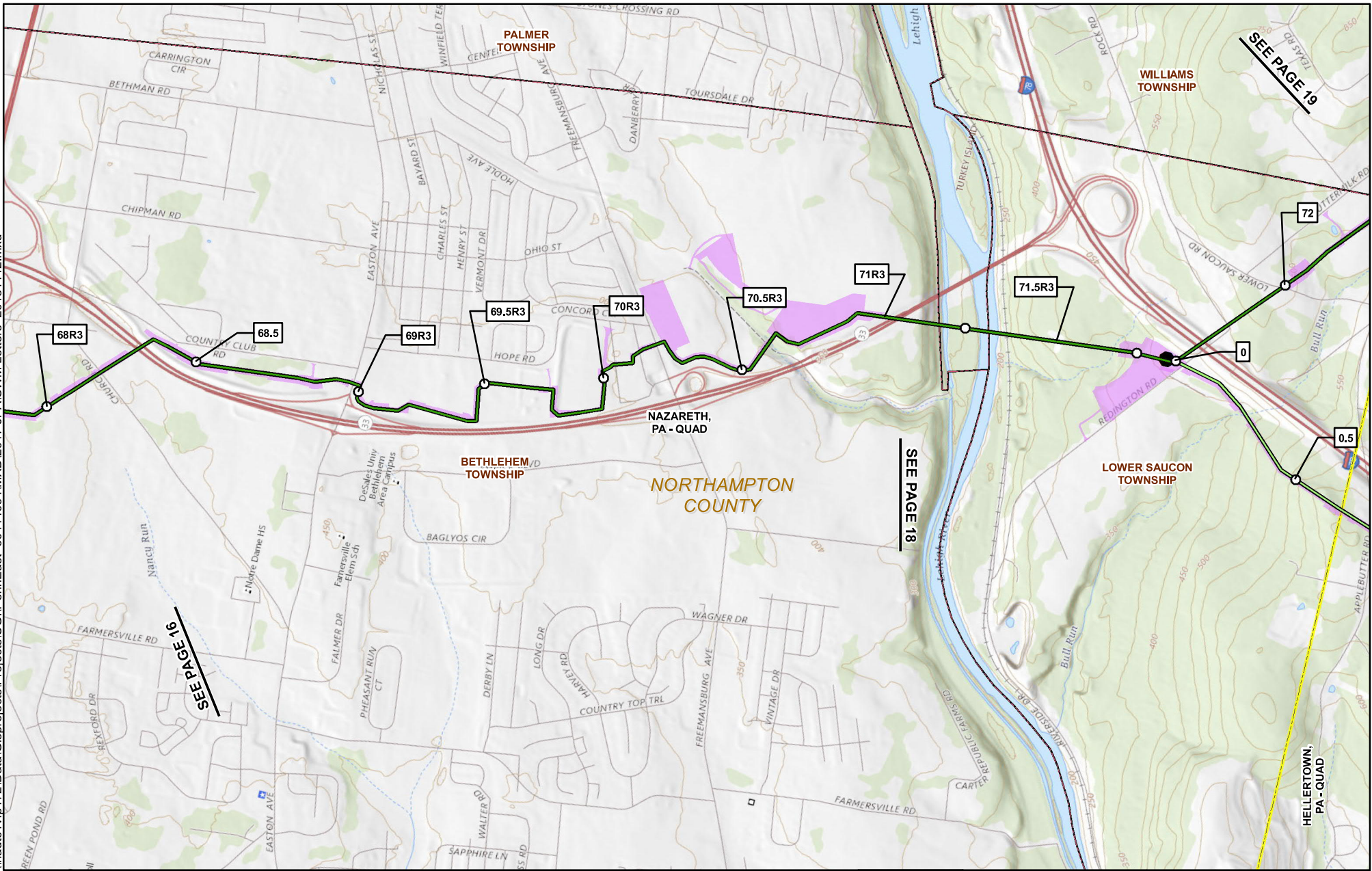


ABSOLUTE SCALE:
1:24,000

REFERENCE SCALE:
1 IN = 2,000 FT



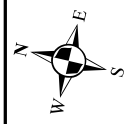
DRAWN BY: KFS
CHECKED BY:
APPROVED BY:
REV. DATE: 11/19/2018
REVISION:
DESC: ISSUED FOR PERMITTING
PAGE: PAGE 16 OF 20



1	MILEPOST		PROPOSED CONSTRUCTION LIMIT
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)		USGS QUADRANGLE BOUNDARY
	PROPOSED PERMANENT ABOVE GROUND FACILITY		TOWNSHIP BOUNDARY
	PROPOSED HELLERTOWN LATERAL		COUNTY BOUNDARY
	PROPOSED PENNEAST PIPELINE CENTERLINE		STATE BOUNDARY

PENNEAST PIPELINE PROJECT USGS QUADRANGLE MAP

**NORTHAMPTON COUNTY,
PENNSYLVANIA**

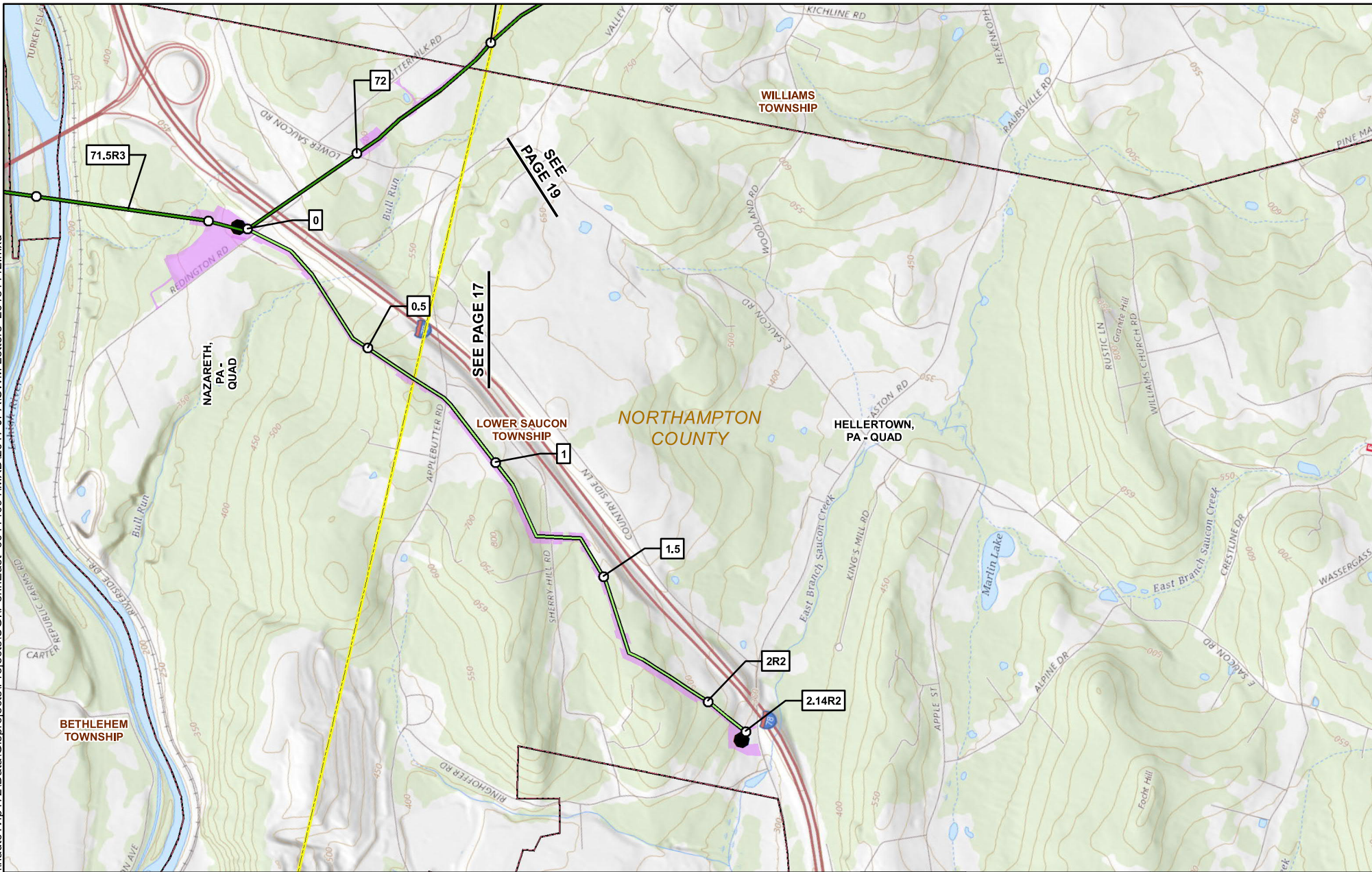


ABSOLUTE SCALE:
1:24,000

REFERENCE SCALE:
1 IN = 2,000 FT



DRAWN BY: KFS
CHECKED BY:
APPROVED BY:
REV. DATE: 11/19/2018
REVISION:
DESC: ISSUED FOR PERMITTING
PAGE: PAGE 17 OF 20



1	MILEPOST		PROPOSED CONSTRUCTION LIMIT
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)		USGS QUADRANGLE BOUNDARY
	PROPOSED PERMANENT ABOVE GROUND FACILITY		TOWNSHIP BOUNDARY
	PROPOSED HELLERTOWN LATERAL		COUNTY BOUNDARY
	PROPOSED PENNEAST PIPELINE CENTERLINE		STATE BOUNDARY

PENNEAST PIPELINE PROJECT USGS QUADRANGLE MAP

**NORTHAMPTON COUNTY,
PENNSYLVANIA**



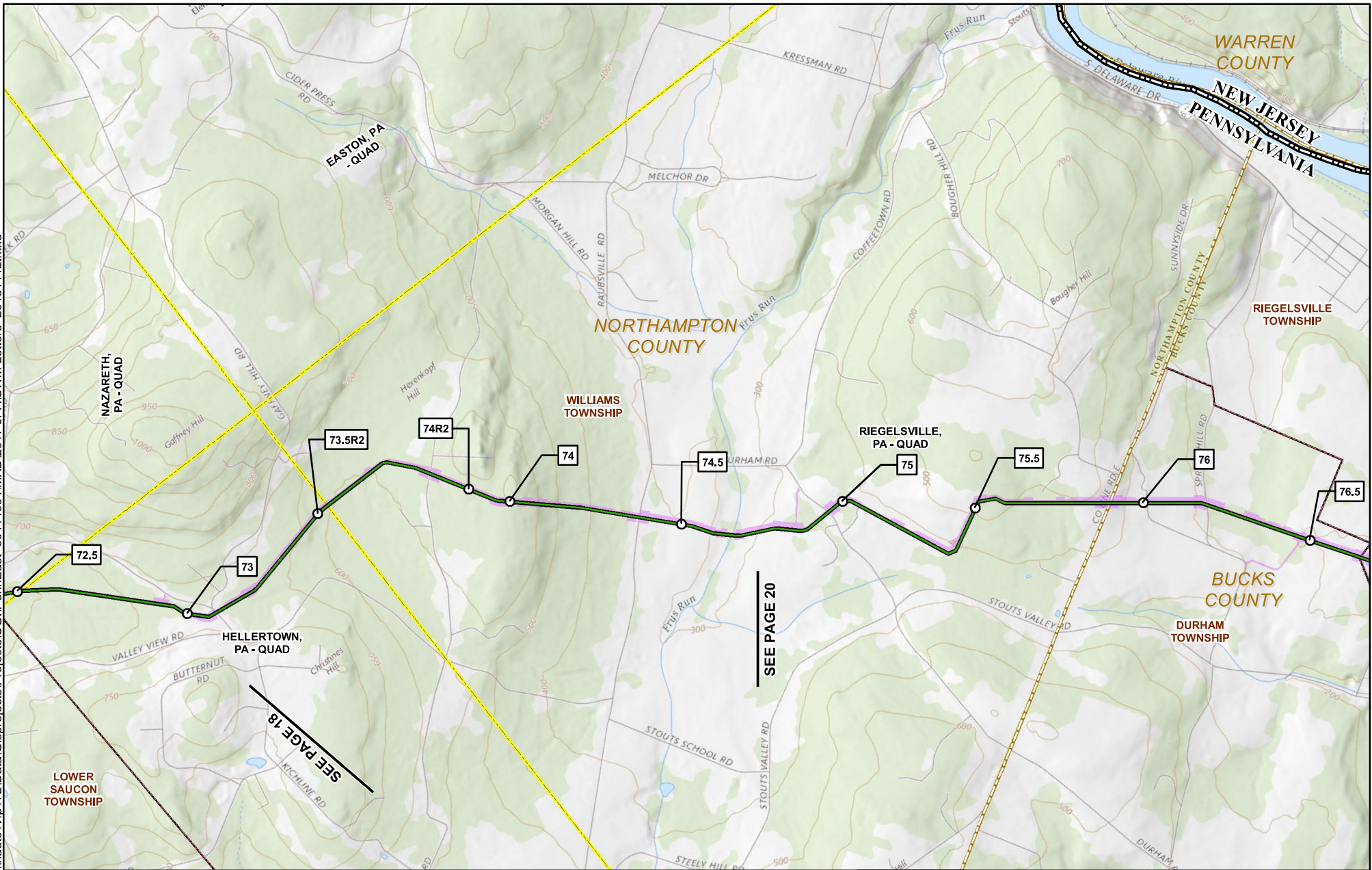
ABSOLUTE SCALE:
1:24,000

REFERENCE SCALE:
1 IN = 2,000 FT



DRAWN BY: KFS
CHECKED BY:
APPROVED BY:
REV. DATE: 11/19/2018
REVISION:
DESC: ISSUED FOR PERMITTING
PAGE: PAGE 18 OF 20

I:\nadc\1\vp\172\GIS\Projects\UG\IPennEast_60414094\MXD\2017_JPA\SWM Letters 2018\112.mxd



1	MILEPOST		PROPOSED CONSTRUCTION LIMIT
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)		USGS QUADRANGLE BOUNDARY
	PROPOSED PERMANENT ABOVE GROUND FACILITY		TOWNSHIP BOUNDARY
	PROPOSED HELLERTOWN LATERAL		COUNTY BOUNDARY
	PROPOSED PENNEAST PIPELINE CENTERLINE		STATE BOUNDARY

PENNEAST PIPELINE PROJECT USGS QUADRANGLE MAP

**NORTHAMPTON & BUCKS COUNTIES,
PENNSYLVANIA**



ABSOLUTE SCALE:
1:24,000

REFERENCE SCALE:
1 IN = 2,000 FT



DRAWN BY: KFS
CHECKED BY:
APPROVED BY:
REV. DATE: 11/19/2018
REVISION:
DESC: ISSUED FOR PERMITTING
PAGE: PAGE 19 OF 20

Form



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

GENERAL INFORMATION FORM – AUTHORIZATION APPLICATION

Before completing this General Information Form (GIF), read the step-by-step instructions provided in this application package. This version of the General Information Form (GIF) must be completed and returned with any program-specific application being submitted to the Department.

Related ID#s (If Known)		DEP USE ONLY	
Client ID# _____	APS ID# _____	Date Received & General Notes	
Site ID# _____	Auth ID# _____		
Facility ID# _____			

CLIENT INFORMATION

DEP Client ID#	Client Type / Code			
	LLC			
Organization Name or Registered Fictitious Name		Employer ID# (EIN)	Dun & Bradstreet ID#	
PennEast Pipeline Company LLC		47-1573364		
Individual Last Name	First Name	MI	Suffix	SSN
Additional Individual Last Name	First Name	MI	Suffix	SSN
Mailing Address Line 1		Mailing Address Line 2		
1 Meridian Boulevard		Suite 2C01		
Address Last Line – City		State	ZIP+4	Country
Wyomissing		PA	19610	USA
Client Contact Last Name	First Name	MI	Suffix	
Holly	Amber			
Client Contact Title		Phone	Ext	
Environmental Project Manager		610-373-7999	1172	
Email Address		FAX		
aholly@ugies.com				

SITE INFORMATION

DEP Site ID#	Site Name				
	PennEast Pipeline Project				
EPA ID#	Estimated Number of Employees to be Present at Site				
Description of Site					
Proposed natural gas pipeline right-of-way and the associated temporary workspace, compressor station, appurtenant facilities, access roads, staging areas, and wareyards necessary to construct the Project. Additional site description information is provided in JPA Section J - Project Narrative.					
County Name	Municipality	City	Boro	Twp	State
Luzerne, Carbon, Monroe, Northampton, and Bucks	(Luzerne:) Bear Creek Twp, Dallas Twp, Jenkins Twp, Kingston Twp, Plains Twp, West Wyoming Borough, Wyoming Borough, (Carbon:) Kidder Twp, Lower Towamensing Twp, Penn Forest Twp, Towamensing Twp, (Monroe:) Eldred Twp, (Northampton:) Bethlehem Twp, East Allen Twp, Easton City, Lower Nazareth Twp, Lower Saucon Twp, Moore Twp, Upper Nazareth Twp, Williams Twp, (Bucks:) Durham Twp, Riegelsville Borough	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	PA
County Name	Municipality	City	Boro	Twp	State
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Site Location Line 1		Site Location Line 2			
The PA portion of the PennEast Mainline Pipeline begins in Dallas Twp, Luzerne County and extends to Durham		The Hellertown Lateral is located in Lower Saucon Twp, Northampton County. Additional site location information			

Twp, Bucks County. Additional site location information is provided in JPA Section J - Project Narrative.

Site Location Last Line – City State ZIP+4

Detailed Written Directions to Site

From Wilkes-Barre: head north on PA-309. At the intersection with State Route 415, bear right to continue on State Route 309/Tunkhannock Highway. After 1 mile, turn right on Upper Demunds Road. Immediately turn right on Hildebrandt Road. After 0.7 mile, turn right onto an unnamed road and follow 0.25 mile to the Wyoming Interconnect and the start of the PennEast Mainline. The entry and exit location for each county crossed by the Project is provided in JPA Section J - Project Narrative.

Site Contact Last Name Holly		First Name Amber	MI	Suffix
Site Contact Title Environmental Project Manager		Site Contact Firm UGI Energy Services, LLC		
Mailing Address Line 1 1 Meridian Boulevard		Mailing Address Line 2 Suite 2C01		
Mailing Address Last Line – City Wyomissing		State PA	ZIP+4 19610	
Phone 610-373-7999	Ext 1172	FAX	Email Address aholly@ugies.com	
NAICS Codes (Two- & Three-Digit Codes – List All That Apply) 22, 23, 48			6-Digit Code (Optional) 221210, 237120, 486210	
Client to Site Relationship OWNOP				

FACILITY INFORMATION

Modification of Existing Facility		Yes	No
1.	Will this project modify an existing facility, system, or activity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.	Will this project involve an addition to an existing facility, system, or activity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If "Yes", check all relevant facility types and provide DEP facility identification numbers below.

Facility Type	DEP Fac ID#	Facility Type	DEP Fac ID#
<input type="checkbox"/> Air Emission Plant	_____	<input type="checkbox"/> Industrial Minerals Mining Operation	_____
<input type="checkbox"/> Beneficial Use (water)	_____	<input type="checkbox"/> Laboratory Location	_____
<input type="checkbox"/> Blasting Operation	_____	<input type="checkbox"/> Land Recycling Cleanup Location	_____
<input type="checkbox"/> Captive Hazardous Waste Operation	_____	<input type="checkbox"/> Mine DrainageTrmt/LandRecyProjLocation	_____
<input type="checkbox"/> Coal Ash Beneficial Use Operation	_____	<input type="checkbox"/> Municipal Waste Operation	_____
<input type="checkbox"/> Coal Mining Operation	_____	<input type="checkbox"/> Oil & Gas Encroachment Location	_____
<input type="checkbox"/> Coal Pillar Location	_____	<input type="checkbox"/> Oil & Gas Location	_____
<input type="checkbox"/> Commercial Hazardous Waste Operation	_____	<input type="checkbox"/> Oil & Gas Water Poll Control Facility	_____
<input type="checkbox"/> Dam Location	_____	<input type="checkbox"/> Oil & Gas Wastewater Storage Impoundment	_____
<input type="checkbox"/> Deep Mine Safety Operation -Anthracite	_____	<input type="checkbox"/> Public Water Supply System	_____
<input type="checkbox"/> Deep Mine Safety Operation -Bituminous	_____	<input type="checkbox"/> Radiation Facility	_____
<input type="checkbox"/> Deep Mine Safety Operation -Ind Minerals	_____	<input type="checkbox"/> Residual Waste Operation	_____
<input type="checkbox"/> Encroachment Location (water, wetland)	_____	<input type="checkbox"/> Storage Tank Location	_____
<input type="checkbox"/> Erosion & Sediment Control Facility	_____	<input type="checkbox"/> Water Pollution Control Facility	_____
<input type="checkbox"/> Explosive Storage Location	_____	<input type="checkbox"/> Water Resource	_____
		<input type="checkbox"/> Other:	_____

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
Station 0+00	41	20	48	75	56	43
Horizontal Accuracy Measure	Feet			--or-- Meters		
Horizontal Reference Datum Code	<input type="checkbox"/> North American Datum of 1927 <input type="checkbox"/> North American Datum of 1983 <input checked="" type="checkbox"/> World Geodetic System of 1984					
Horizontal Collection Method Code	GISDR					
Reference Point Code	CENTER					
Altitude	Feet 1280			--or-- Meters		
Altitude Datum Name	<input type="checkbox"/> The National Geodetic Vertical Datum of 1929 <input checked="" type="checkbox"/> The North American Vertical Datum of 1988 (NAVD88)					

Altitude (Vertical) Location Datum Collection Method Code	TOPO	
Geometric Type Code	POINT	
Data Collection Date	12/08/2018	
Source Map Scale Number	1	Inch(es) = 2000 Feet
	--or--	Centimeter(s) = Meters

PROJECT INFORMATION

Project Name
PennEast Pipeline Project

Project Description
See Project Description in JPA Section J

Project Consultant Last Name	First Name	MI	Suffix
Binckley	Sarah	K	

Project Consultant Title
Project Manager

Consulting Firm
AECOM

Mailing Address Line 1	Mailing Address Line 2	
625 West Ridge Pike	Suite E-100	
Address Last Line - City	State	ZIP+4
Conshohocken	PA	19428

Phone	Ext	FAX	Email Address
610-832-2713		610-832-3501	sarah.binckley@aecom.com

Time Schedules	Project Milestone (Optional)
09/2015	PennEast submitted FERC Application for Certificate of Public Convenience and Necessity
02/2016 - 03/2016	PennEast submitted PADEP Joint Permit Applications and ESCGP-2 applications
01/2018	Received FERC Certificate of Public Convenience and Necessity
12/2018	PennEast submits revised Joint Permit Applications and ESCGP-3 applications

- Have you informed the surrounding community and addressed any concerns prior to submitting the application to the Department? Yes No
- Is your project funded by state or federal grants? Yes No
 Note: If "Yes", specify what aspect of the project is related to the grant and provide the grant source, contact person and grant expiration date.
 Aspect of Project Related to Grant: _____
 Grant Source: _____
 Grant Contact Person: _____
 Grant Expiration Date: _____
- Is this application for an authorization on Appendix A of the Land Use Policy? (For referenced list, see Appendix A of the Land Use Policy attached to GIF instructions) Yes No
 Note: If "No" to Question 3, the application is not subject to the Land Use Policy.
 If "Yes" to Question 3, the application is subject to this policy and the Applicant should answer the additional questions in the Land Use Information section.

LAND USE INFORMATION

Note: Applicants are encouraged to submit copies of local land use approvals or other evidence of compliance with local comprehensive plans and zoning ordinances.

- Is there an adopted county or multi-county comprehensive plan? Yes No
- Is there an adopted municipal or multi-municipal comprehensive plan? Yes No
- Is there an adopted county-wide zoning ordinance, municipal zoning ordinance or joint municipal zoning ordinance? Yes No
 Note: If the Applicant answers "No" to either Questions 1, 2 or 3, the provisions of the PA MPC are not applicable and the Applicant does not need to respond to questions 4 and 5 below.
 If the Applicant answers "Yes" to questions 1, 2 and 3, the Applicant should respond to questions 4 and 5 below.
- Does the proposed project meet the provisions of the zoning ordinance or does the proposed project have zoning approval? If zoning approval has been received, attach documentation. Yes No
- Have you attached Municipal and County Land Use Letters for the project? Yes No

COORDINATION INFORMATION

Note: The PA Historical and Museum Commission must be notified of proposed projects in accordance with DEP Technical Guidance Document 012-0700-001 and the accompanying Cultural Resource Notice Form.

If the activity will be a mining project (i.e., mining of coal or industrial minerals, coal refuse disposal and/or the operation of a coal or industrial minerals preparation/processing facility), respond to questions 1.0 through 2.5 below.

If the activity will not be a mining project, skip questions 1.0 through 2.5 and begin with question 3.0.

1.0	Is this a coal mining project? If "Yes", respond to 1.1-1.6. If "No", skip to Question 2.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
1.1	Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be equal to or greater than 200 tons/day?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.2	Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be greater than 50,000 tons/year?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.3	Will this coal mining project involve coal preparation/ processing activities in which thermal coal dryers or pneumatic coal cleaners will be used?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.4	For this coal mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.5	Will this coal mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.6	Will this coal mining project involve underground coal mining to be conducted within 500 feet of an oil or gas well?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.0	Is this a non-coal (industrial minerals) mining project? If "Yes", respond to 2.1-2.6. If "No", skip to Question 3.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
2.1	Will this non-coal (industrial minerals) mining project involve the crushing and screening of non-coal minerals other than sand and gravel?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.2	Will this non-coal (industrial minerals) mining project involve the crushing and/or screening of sand and gravel with the exception of wet sand and gravel operations (screening only) and dry sand and gravel operations with a capacity of less than 150 tons/hour of unconsolidated materials?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.3	Will this non-coal (industrial minerals) mining project involve the construction, operation and/or modification of a portable non-metallic (i.e., non-coal) minerals processing plant under the authority of the General Permit for Portable Non-metallic Mineral Processing Plants (i.e., BAQ-PGPA/GP-3)?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.4	For this non-coal (industrial minerals) mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.5	Will this non-coal (industrial minerals) mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No

3.0	Will your project, activity, or authorization have anything to do with a well related to oil or gas production, have construction within 200 feet of, affect an oil or gas well, involve the waste from such a well, or string power lines above an oil or gas well? If "Yes", respond to 3.1-3.3. If "No", skip to Question 4.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
3.1	Does the oil- or gas-related project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water (including wetlands)?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
3.2	Will the oil- or gas-related project involve discharge of industrial wastewater or stormwater to a dry swale, surface water, ground water or an existing sanitary sewer system or storm water system? If "Yes", discuss in <i>Project Description</i> .	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
3.3	Will the oil- or gas-related project involve the construction and operation of industrial waste treatment facilities?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
4.0	Will the project involve a construction activity that results in earth disturbance? If "Yes", specify the total disturbed acreage. 4.0.1 Total Disturbed Acreage 1289.4	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.0	Does the project involve any of the following? If "Yes", respond to 5.1-5.3. If "No", skip to Question 6.0.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.1	Water Obstruction and Encroachment Projects – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.2	Wetland Impacts – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a wetland?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.3	Floodplain Projects by the commonwealth, a Political Subdivision of the commonwealth or a Public Utility – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a floodplain?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
6.0	Will the project involve discharge of stormwater or wastewater from an industrial activity to a dry swale, surface water, ground water or an existing sanitary sewer system or separate storm water system?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
7.0	Will the project involve the construction and operation of industrial waste treatment facilities?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
8.0	Will the project involve construction of sewage treatment facilities, sanitary sewers, or sewage pumping stations? If "Yes", indicate estimated proposed flow (gal/day). Also, discuss the sanitary sewer pipe sizes and the number of pumping stations/treatment facilities/name of downstream sewage facilities in the <i>Project Description</i> , where applicable. 8.0.1 Estimated Proposed Flow (gal/day)	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
9.0	Will the project involve the subdivision of land, or the generation of 800 gpd or more of sewage on an existing parcel of land or the generation of an additional 400 gpd of sewage on an already-developed parcel, or the generation of 800 gpd or more of industrial wastewater that would be discharged to an existing sanitary sewer system? 9.0.1 Was Act 537 sewage facilities planning submitted and approved by DEP? If "Yes" attach the approval letter. Approval required prior to 105/NPDES approval.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
10.0	Is this project for the beneficial use of biosolids for land application within Pennsylvania? If "Yes" indicate how much (i.e. gallons or dry tons per year). 10.0.1 Gallons Per Year (residential septage) _____ 10.0.2 Dry Tons Per Year (biosolids) _____	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
11.0	Does the project involve construction, modification or removal of a dam? If "Yes", identify the dam. 11.0.1 Dam Name	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No

12.0	Will the project interfere with the flow from, or otherwise impact, a dam? If "Yes", identify the dam.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
12.0.1	Dam Name				
13.0	Will the project involve operations (excluding during the construction period) that produce air emissions (i.e., NOX, VOC, etc.)? If "Yes", identify each type of emission followed by the amount of that emission.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
13.0.1	Enter all types & amounts of emissions; separate each set with semicolons.	The Project operational total Potential to Emit (PTE) in tons per year includes: NOx – 141; CO – 141; SO2 – 5.8; PM10 – 28; PM2.5 – 28; VOC – 13; GHG – 260,800; CH2O – 3.9; Total HAPs – 5.1			
14.0	Does the project include the construction or modification of a drinking water supply to serve 15 or more connections or 25 or more people, at least 60 days out of the year? If "Yes", check all proposed sub-facilities.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
14.0.1	Number of Persons Served				
14.0.2	Number of Employee/Guests				
14.0.3	Number of Connections				
14.0.4	Sub-Fac: Distribution System	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.5	Sub-Fac: Water Treatment Plant	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.6	Sub-Fac: Source	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.7	Sub-Fac: Pump Station	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.8	Sub Fac: Transmission Main	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.9	Sub-Fac: Storage Facility	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
15.0	Will your project include infiltration of storm water or waste water to ground water within one-half mile of a public water supply well, spring or infiltration gallery?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
16.0	Is your project to be served by an existing public water supply? If "Yes", indicate name of supplier and attach letter from supplier stating that it will serve the project.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
16.0.1	Supplier's Name				
16.0.2	Letter of Approval from Supplier is Attached	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
17.0	Will this project involve a new or increased drinking water withdrawal from a stream or other water body? If "Yes", should reference both Water Supply and Watershed Management.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
17.0.1	Stream Name				
18.0	Will the construction or operation of this project involve treatment, storage, reuse, or disposal of waste? If "Yes", indicate what type (i.e., hazardous, municipal (including infectious & chemotherapeutic), residual) and the amount to be treated, stored, re-used or disposed.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
18.0.1	Type & Amount				
19.0	Will your project involve the removal of coal, minerals, etc. as part of any earth disturbance activities?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
20.0	Does your project involve installation of a field constructed underground storage tank? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
20.0.1	Enter all substances & capacity of each; separate each set with semicolons.				
21.0	Does your project involve installation of an aboveground storage tank greater than 21,000 gallons capacity at an existing facility? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
21.0.1	Enter all substances & capacity of each; separate each set with semicolons.				

22.0 Does your project involve installation of a tank greater than 1,100 gallons which will contain a highly hazardous substance as defined in DEP's Regulated Substances List, 2570-BK-DEP2724? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit. Yes No

22.0.1 Enter all substances & capacity of each; separate each set with semicolons.

23.0 Does your project involve installation of a storage tank at a new facility with a total AST capacity greater than 21,000 gallons? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit. Yes No

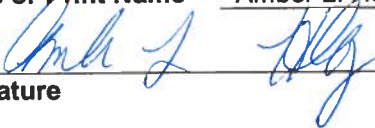
23.0.1 Enter all substances & capacity of each; separate each set with semicolons.

24.0 Will the intended activity involve the use of a radiation source? Yes No

CERTIFICATION

I certify that I have the authority to submit this application on behalf of the applicant named herein and that the information provided in this application is true and correct to the best of my knowledge and information.

Type or Print Name Amber L. Holly



Environmental Project Manager

12/10/18

Signature

Title

Date

Subject:

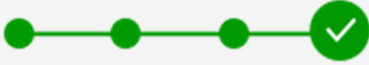
FW: FedEx Shipment 773979828501 Delivered



Your package has been delivered

Tracking # 773979828501


Ship date: Mon, 12/17/2018	Delivery date: Tue, 12/18/2018 11:06 am
Sarah Binckley AECOM CONSHOHOCKEN, PA 19428 US	Becky Bradley Lehigh Valley Planning Commission 961 Marcon Boulevard Suite 310 ALLENTOWN, PA 18109 US


Delivered

Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	773979828501
Status:	Delivered: 12/18/2018 11:06 AM Signed for By: D.NOHAR
Reference:	60414094. 20000363.00035.08
Signed for by:	D.NOHAR
Delivery location:	ALLENTOWN, PA
Delivered to:	Receptionist/Front Desk
Service type:	FedEx Standard Overnight®
Packaging type:	FedEx® Envelope
Number of pieces:	1
Weight:	0.50 lb.
Special handling/Services:	Deliver Weekday
Standard transit:	12/18/2018 by 3:00 pm

 Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 10:08 AM CST on 12/18/2018.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

Standard transit is the date and time the package is scheduled to be delivered by, based on the selected service, destination and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

© 2018 Federal Express Corporation. The content of this message is protected by copyright and trademark laws under U.S. and international law. Review our [privacy policy](#). All rights reserved.

Thank you for your business.



625 West Ridge Pike
Suite E-100
Conshohocken, PA 19428
www.aecom.com

610 832 3500 tel
610 832 3501 fax

December 17, 2018

Bethlehem Township
Doug Bruce, Township Manager
4225 Easton Avenue
Bethlehem, PA 18020-1496

**Subject: Updated Stormwater Management Analysis
PennEast Pipeline Project
Northampton County, Pennsylvania**

Dear Doug Bruce,

On November 9, 2016, AECOM notified Bethlehem Township that PennEast Pipeline Company, LLC had submitted Pennsylvania Chapter 105 Joint Permit Applications (JPAs) for authorization of wetland and watercourse crossings for the PennEast Pipeline Project (Project). PennEast will be submitting updated JPAs to the Pennsylvania Department of Environmental Protection (PADEP) in December 2018. In accordance with 25 Pennsylvania Code §105.13(e)(I)(v), PennEast is providing this stormwater management analysis for Project impacts within Bethlehem Township.

Project Description

PennEast proposes to construct, install, and operate the Project facilities to provide approximately 1.1 million dekatherms per day (MMDth/d) of year-round natural gas transportation services from the Marcellus Shale producing region in northern Pennsylvania to markets in New Jersey, eastern and southeastern Pennsylvania, and surrounding states. The Project will include a new pipeline and aboveground facilities that will provide a new source of low cost natural gas and enhance the region's supply diversity. The Project facilities include a 36-inch diameter, 115-mile mainline pipeline extending from Luzerne County, Pennsylvania, to Mercer County, New Jersey. The Project will extend from various receipt point interconnections in the eastern Marcellus Shale region to various delivery point interconnections in the heart of major northeastern natural gas-consuming markets.

Stormwater Management Analysis

Within Bethlehem Township, PennEast proposes to construct approximately 4.0 miles of 36-inch diameter pipeline, which will be located within the Nancy Run, Monocacy Creek, Bushkill Creek, and Lehigh River, watersheds for which Act 167 Stormwater Management Plans have been approved. A location map illustrating the location of the proposed PennEast Mainline Pipeline within Bethlehem Township is included as Attachment 1.

The pipeline facilities will be restored to pre-construction grade and revegetated following construction in accordance with PennEast's Erosion and Sediment Control Plan (E&SCP), Site Restoration Plan, and the Federal Energy Regulatory Commission's (FERC's) Upland Erosion Control, Revegetation, and Maintenance Plan. Existing drainage patterns will be maintained as practicable by restoring the pre-construction contours and restoring disturbed areas to the existing vegetation cover type or meadow. Restoration measures will include the re-establishment of original grade and drainage patterns to the extent practicable. Erosion and sedimentation control best management practices will be maintained until final stabilization is achieved to minimize the likelihood of post-construction erosion. The rate and volume of stormwater runoff from the Project area in the post-construction condition is not expected to exceed that of the pre-construction condition. The

E&SCP and Site Restoration Plan will be reviewed by the PADEP and Northampton County Conservation District as part of the Erosion and Sediment Control General Permit (ESCGP) application process.

PennEast will continue to coordinate with the PADEP and the Northampton County Conservation District regarding stormwater management best management practices to prevent an increase in the rate of stormwater runoff and minimize any increase in stormwater runoff volume. If you have any comments regarding consistency with the approved stormwater management plans, please direct comments to the PADEP Northeast Regional Office, Waterways and Wetlands Program at 2 Public Square, Wilkes-Barre, Pennsylvania 18701-1915 or call 570-826-2511.

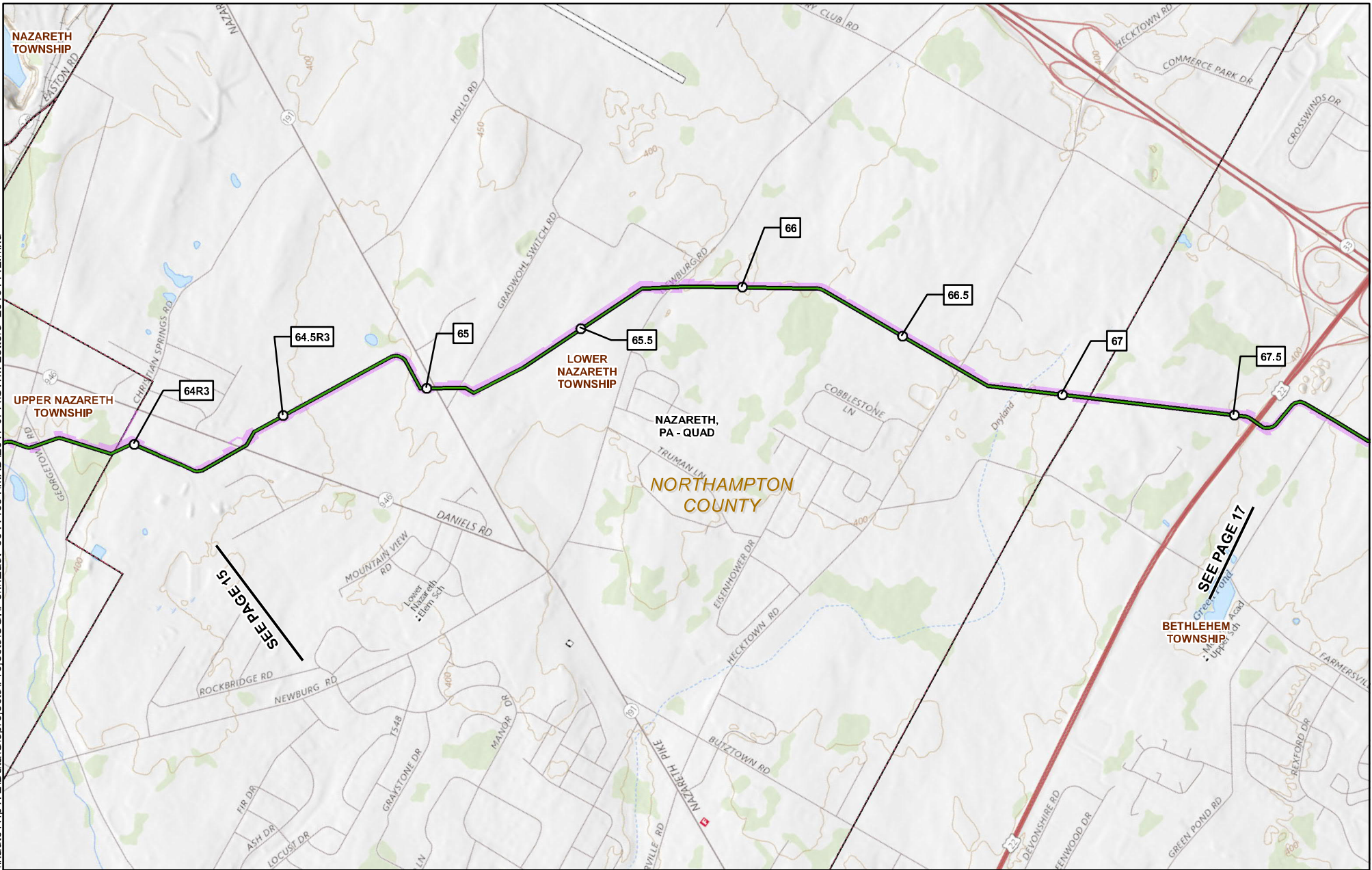
Yours sincerely,

A handwritten signature in cursive script that reads "Sarah K. Binckley". The signature is written in black ink and is positioned above the printed name and title.

Sarah K. Binckley
AECOM

cc: Casey Monagan, UGI Energy Services
Amber Holly, UGI Energy Services

ATTACHMENT 1
PROJECT LOCATION MAP



1	MILEPOST		PROPOSED CONSTRUCTION LIMIT
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)		USGS QUADRANGLE BOUNDARY
	PROPOSED PERMANENT ABOVE GROUND FACILITY		TOWNSHIP BOUNDARY
	PROPOSED HELLERTOWN LATERAL		COUNTY BOUNDARY
	PROPOSED PENNEAST PIPELINE CENTERLINE		STATE BOUNDARY

**PENNEAST PIPELINE PROJECT
USGS QUADRANGLE MAP**

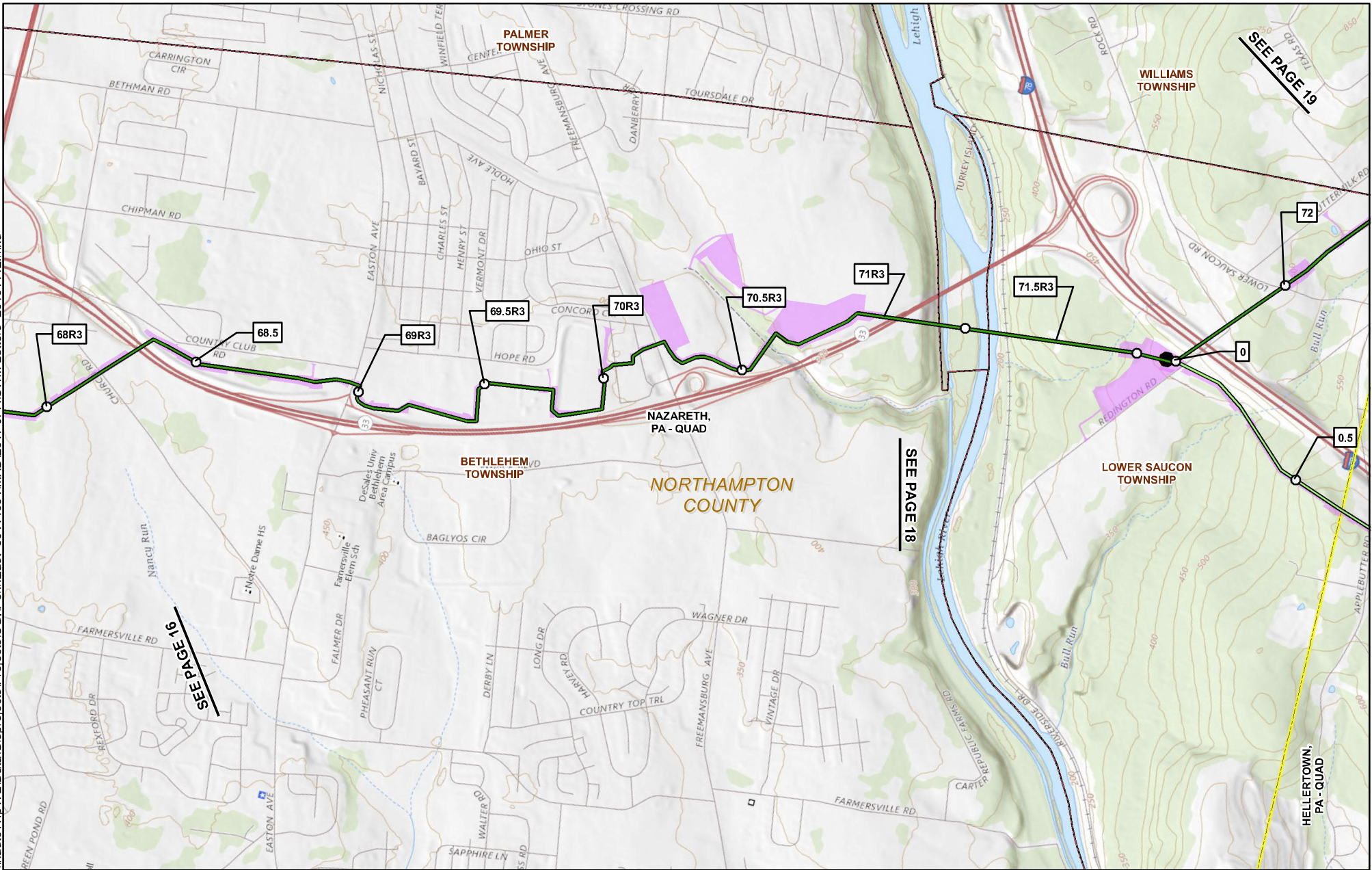
**NORTHAMPTON COUNTY,
PENNSYLVANIA**

Feet
2,000 1,000 0 2,000 4,000

ABSOLUTE SCALE:
1:24,000
 REFERENCE SCALE:
1 IN = 2,000 FT

AECOM

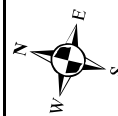
DRAWN BY: KFS
CHECKED BY:
APPROVED BY:
REV. DATE: 11/19/2018
REVISION:
DESC: ISSUED FOR PERMITTING
PAGE: PAGE 16 OF 20



1	MILEPOST		PROPOSED CONSTRUCTION LIMIT
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)		USGS QUADRANGLE BOUNDARY
	PROPOSED PERMANENT ABOVE GROUND FACILITY		TOWNSHIP BOUNDARY
	PROPOSED HELLERTOWN LATERAL		COUNTY BOUNDARY
	PROPOSED PENNEAST PIPELINE CENTERLINE		STATE BOUNDARY

PENNEAST PIPELINE PROJECT USGS QUADRANGLE MAP

**NORTHAMPTON COUNTY,
PENNSYLVANIA**



ABSOLUTE SCALE:
1:24,000

REFERENCE SCALE:
1 IN = 2,000 FT



DRAWN BY: KFS
CHECKED BY:
APPROVED BY:
REV. DATE: 11/19/2018
REVISION:
DESC: ISSUED FOR PERMITTING
PAGE: PAGE 17 OF 20

Form



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

GENERAL INFORMATION FORM – AUTHORIZATION APPLICATION

Before completing this General Information Form (GIF), read the step-by-step instructions provided in this application package. This version of the General Information Form (GIF) must be completed and returned with any program-specific application being submitted to the Department.

Related ID#s (If Known)		DEP USE ONLY	
Client ID# _____	APS ID# _____	Date Received & General Notes	
Site ID# _____	Auth ID# _____		
Facility ID# _____			

CLIENT INFORMATION

DEP Client ID#	Client Type / Code			
	LLC			
Organization Name or Registered Fictitious Name		Employer ID# (EIN)	Dun & Bradstreet ID#	
PennEast Pipeline Company LLC		47-1573364		
Individual Last Name	First Name	MI	Suffix	SSN
Additional Individual Last Name	First Name	MI	Suffix	SSN
Mailing Address Line 1		Mailing Address Line 2		
1 Meridian Boulevard		Suite 2C01		
Address Last Line – City		State	ZIP+4	Country
Wyomissing		PA	19610	USA
Client Contact Last Name	First Name	MI	Suffix	
Holly	Amber			
Client Contact Title		Phone	Ext	
Environmental Project Manager		610-373-7999	1172	
Email Address		FAX		
aholly@ugies.com				

SITE INFORMATION

DEP Site ID#	Site Name				
	PennEast Pipeline Project				
EPA ID#	Estimated Number of Employees to be Present at Site				
Description of Site					
Proposed natural gas pipeline right-of-way and the associated temporary workspace, compressor station, appurtenant facilities, access roads, staging areas, and wareyards necessary to construct the Project. Additional site description information is provided in JPA Section J - Project Narrative.					
County Name	Municipality	City	Boro	Twp	State
Luzerne, Carbon, Monroe, Northampton, and Bucks	(Luzerne:) Bear Creek Twp, Dallas Twp, Jenkins Twp, Kingston Twp, Plains Twp, West Wyoming Borough, Wyoming Borough, (Carbon:) Kidder Twp, Lower Towamensing Twp, Penn Forest Twp, Towamensing Twp, (Monroe:) Eldred Twp, (Northampton:) Bethlehem Twp, East Allen Twp, Easton City, Lower Nazareth Twp, Lower Saucon Twp, Moore Twp, Upper Nazareth Twp, Williams Twp, (Bucks:) Durham Twp, Riegelsville Borough	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	PA
County Name	Municipality	City	Boro	Twp	State
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Site Location Line 1		Site Location Line 2			
The PA portion of the PennEast Mainline Pipeline begins in Dallas Twp, Luzerne County and extends to Durham		The Hellertown Lateral is located in Lower Saucon Twp, Northampton County. Additional site location information			

Twp, Bucks County. Additional site location information is provided in JPA Section J - Project Narrative.

Site Location Last Line – City State ZIP+4

Detailed Written Directions to Site

From Wilkes-Barre: head north on PA-309. At the intersection with State Route 415, bear right to continue on State Route 309/Tunkhannock Highway. After 1 mile, turn right on Upper Demunds Road. Immediately turn right on Hildebrandt Road. After 0.7 mile, turn right onto an unnamed road and follow 0.25 mile to the Wyoming Interconnect and the start of the PennEast Mainline. The entry and exit location for each county crossed by the Project is provided in JPA Section J - Project Narrative.

Site Contact Last Name Holly	First Name Amber	MI	Suffix
Site Contact Title Environmental Project Manager		Site Contact Firm UGI Energy Services, LLC	
Mailing Address Line 1 1 Meridian Boulevard		Mailing Address Line 2 Suite 2C01	
Mailing Address Last Line – City Wyomissing		State PA	ZIP+4 19610
Phone 610-373-7999	Ext 1172	FAX	Email Address aholly@ugies.com
NAICS Codes (Two- & Three-Digit Codes – List All That Apply) 22, 23, 48			6-Digit Code (Optional) 221210, 237120, 486210
Client to Site Relationship OWNOP			

FACILITY INFORMATION

Modification of Existing Facility	Yes	No
1. Will this project modify an existing facility, system, or activity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Will this project involve an addition to an existing facility, system, or activity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If "Yes", check all relevant facility types and provide DEP facility identification numbers below.

Facility Type	DEP Fac ID#	Facility Type	DEP Fac ID#
<input type="checkbox"/> Air Emission Plant	_____	<input type="checkbox"/> Industrial Minerals Mining Operation	_____
<input type="checkbox"/> Beneficial Use (water)	_____	<input type="checkbox"/> Laboratory Location	_____
<input type="checkbox"/> Blasting Operation	_____	<input type="checkbox"/> Land Recycling Cleanup Location	_____
<input type="checkbox"/> Captive Hazardous Waste Operation	_____	<input type="checkbox"/> Mine DrainageTrmt/LandRecyProjLocation	_____
<input type="checkbox"/> Coal Ash Beneficial Use Operation	_____	<input type="checkbox"/> Municipal Waste Operation	_____
<input type="checkbox"/> Coal Mining Operation	_____	<input type="checkbox"/> Oil & Gas Encroachment Location	_____
<input type="checkbox"/> Coal Pillar Location	_____	<input type="checkbox"/> Oil & Gas Location	_____
<input type="checkbox"/> Commercial Hazardous Waste Operation	_____	<input type="checkbox"/> Oil & Gas Water Poll Control Facility	_____
<input type="checkbox"/> Dam Location	_____	<input type="checkbox"/> Oil & Gas Wastewater Storage Impoundment	_____
<input type="checkbox"/> Deep Mine Safety Operation -Anthracite	_____	<input type="checkbox"/> Public Water Supply System	_____
<input type="checkbox"/> Deep Mine Safety Operation -Bituminous	_____	<input type="checkbox"/> Radiation Facility	_____
<input type="checkbox"/> Deep Mine Safety Operation -Ind Minerals	_____	<input type="checkbox"/> Residual Waste Operation	_____
<input type="checkbox"/> Encroachment Location (water, wetland)	_____	<input type="checkbox"/> Storage Tank Location	_____
<input type="checkbox"/> Erosion & Sediment Control Facility	_____	<input type="checkbox"/> Water Pollution Control Facility	_____
<input type="checkbox"/> Explosive Storage Location	_____	<input type="checkbox"/> Water Resource	_____
		<input type="checkbox"/> Other:	_____

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
Station 0+00	41	20	48	75	56	43
Horizontal Accuracy Measure	Feet			--or-- Meters		
Horizontal Reference Datum Code	<input type="checkbox"/> North American Datum of 1927 <input type="checkbox"/> North American Datum of 1983 <input checked="" type="checkbox"/> World Geodetic System of 1984					
Horizontal Collection Method Code	GISDR					
Reference Point Code	CENTER					
Altitude	Feet 1280			--or-- Meters		
Altitude Datum Name	<input type="checkbox"/> The National Geodetic Vertical Datum of 1929 <input checked="" type="checkbox"/> The North American Vertical Datum of 1988 (NAVD88)					

Altitude (Vertical) Location Datum Collection Method Code	TOPO	
Geometric Type Code	POINT	
Data Collection Date	12/08/2018	
Source Map Scale Number	1	Inch(es) = 2000 Feet
	--or--	Centimeter(s) = Meters

PROJECT INFORMATION

Project Name
PennEast Pipeline Project

Project Description
See Project Description in JPA Section J

Project Consultant Last Name	First Name	MI	Suffix
Binckley	Sarah	K	

Project Consultant Title
Project Manager

Consulting Firm
AECOM

Mailing Address Line 1	Mailing Address Line 2
625 West Ridge Pike	Suite E-100
Address Last Line - City	State
Conshohocken	PA
	ZIP+4
	19428

Phone	Ext	FAX	Email Address
610-832-2713		610-832-3501	sarah.binckley@aecom.com

Time Schedules	Project Milestone (Optional)
09/2015	PennEast submitted FERC Application for Certificate of Public Convenience and Necessity
02/2016 - 03/2016	PennEast submitted PADEP Joint Permit Applications and ESCGP-2 applications
01/2018	Received FERC Certificate of Public Convenience and Necessity
12/2018	PennEast submits revised Joint Permit Applications and ESCGP-3 applications

- Have you informed the surrounding community and addressed any concerns prior to submitting the application to the Department? Yes No
- Is your project funded by state or federal grants? Yes No
Note: If "Yes", specify what aspect of the project is related to the grant and provide the grant source, contact person and grant expiration date.
 Aspect of Project Related to Grant _____
 Grant Source: _____
 Grant Contact Person: _____
 Grant Expiration Date: _____
- Is this application for an authorization on Appendix A of the Land Use Policy? (For referenced list, see Appendix A of the Land Use Policy attached to GIF instructions) Yes No
Note: If "No" to Question 3, the application is not subject to the Land Use Policy.
 If "Yes" to Question 3, the application is subject to this policy and the Applicant should answer the additional questions in the Land Use Information section.

LAND USE INFORMATION

Note: Applicants are encouraged to submit copies of local land use approvals or other evidence of compliance with local comprehensive plans and zoning ordinances.

- Is there an adopted county or multi-county comprehensive plan? Yes No
- Is there an adopted municipal or multi-municipal comprehensive plan? Yes No
- Is there an adopted county-wide zoning ordinance, municipal zoning ordinance or joint municipal zoning ordinance? Yes No
Note: If the Applicant answers "No" to either Questions 1, 2 or 3, the provisions of the PA MPC are not applicable and the Applicant does not need to respond to questions 4 and 5 below.
 If the Applicant answers "Yes" to questions 1, 2 and 3, the Applicant should respond to questions 4 and 5 below.
- Does the proposed project meet the provisions of the zoning ordinance or does the proposed project have zoning approval? If zoning approval has been received, attach documentation. Yes No
- Have you attached Municipal and County Land Use Letters for the project? Yes No

COORDINATION INFORMATION

Note: The PA Historical and Museum Commission must be notified of proposed projects in accordance with DEP Technical Guidance Document 012-0700-001 and the accompanying Cultural Resource Notice Form.

If the activity will be a mining project (i.e., mining of coal or industrial minerals, coal refuse disposal and/or the operation of a coal or industrial minerals preparation/processing facility), respond to questions 1.0 through 2.5 below.

If the activity will not be a mining project, skip questions 1.0 through 2.5 and begin with question 3.0.

1.0	Is this a coal mining project? If "Yes", respond to 1.1-1.6. If "No", skip to Question 2.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
1.1	Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be equal to or greater than 200 tons/day?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.2	Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be greater than 50,000 tons/year?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.3	Will this coal mining project involve coal preparation/ processing activities in which thermal coal dryers or pneumatic coal cleaners will be used?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.4	For this coal mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.5	Will this coal mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.6	Will this coal mining project involve underground coal mining to be conducted within 500 feet of an oil or gas well?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.0	Is this a non-coal (industrial minerals) mining project? If "Yes", respond to 2.1-2.6. If "No", skip to Question 3.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
2.1	Will this non-coal (industrial minerals) mining project involve the crushing and screening of non-coal minerals other than sand and gravel?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.2	Will this non-coal (industrial minerals) mining project involve the crushing and/or screening of sand and gravel with the exception of wet sand and gravel operations (screening only) and dry sand and gravel operations with a capacity of less than 150 tons/hour of unconsolidated materials?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.3	Will this non-coal (industrial minerals) mining project involve the construction, operation and/or modification of a portable non-metallic (i.e., non-coal) minerals processing plant under the authority of the General Permit for Portable Non-metallic Mineral Processing Plants (i.e., BAQ-PGPA/GP-3)?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.4	For this non-coal (industrial minerals) mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.5	Will this non-coal (industrial minerals) mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No

3.0	Will your project, activity, or authorization have anything to do with a well related to oil or gas production, have construction within 200 feet of, affect an oil or gas well, involve the waste from such a well, or string power lines above an oil or gas well? If "Yes", respond to 3.1-3.3. If "No", skip to Question 4.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
3.1	Does the oil- or gas-related project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water (including wetlands)?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
3.2	Will the oil- or gas-related project involve discharge of industrial wastewater or stormwater to a dry swale, surface water, ground water or an existing sanitary sewer system or storm water system? If "Yes", discuss in <i>Project Description</i> .	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
3.3	Will the oil- or gas-related project involve the construction and operation of industrial waste treatment facilities?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
4.0	Will the project involve a construction activity that results in earth disturbance? If "Yes", specify the total disturbed acreage. 4.0.1 Total Disturbed Acreage 1289.4	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.0	Does the project involve any of the following? If "Yes", respond to 5.1-5.3. If "No", skip to Question 6.0.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.1	Water Obstruction and Encroachment Projects – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.2	Wetland Impacts – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a wetland?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.3	Floodplain Projects by the commonwealth, a Political Subdivision of the commonwealth or a Public Utility – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a floodplain?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
6.0	Will the project involve discharge of stormwater or wastewater from an industrial activity to a dry swale, surface water, ground water or an existing sanitary sewer system or separate storm water system?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
7.0	Will the project involve the construction and operation of industrial waste treatment facilities?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
8.0	Will the project involve construction of sewage treatment facilities, sanitary sewers, or sewage pumping stations? If "Yes", indicate estimated proposed flow (gal/day). Also, discuss the sanitary sewer pipe sizes and the number of pumping stations/treatment facilities/name of downstream sewage facilities in the <i>Project Description</i> , where applicable. 8.0.1 Estimated Proposed Flow (gal/day)	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
9.0	Will the project involve the subdivision of land, or the generation of 800 gpd or more of sewage on an existing parcel of land or the generation of an additional 400 gpd of sewage on an already-developed parcel, or the generation of 800 gpd or more of industrial wastewater that would be discharged to an existing sanitary sewer system? 9.0.1 Was Act 537 sewage facilities planning submitted and approved by DEP? If "Yes" attach the approval letter. Approval required prior to 105/NPDES approval.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
10.0	Is this project for the beneficial use of biosolids for land application within Pennsylvania? If "Yes" indicate how much (i.e. gallons or dry tons per year). 10.0.1 Gallons Per Year (residential septage) _____ 10.0.2 Dry Tons Per Year (biosolids) _____	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
11.0	Does the project involve construction, modification or removal of a dam? If "Yes", identify the dam. 11.0.1 Dam Name	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No

12.0	Will the project interfere with the flow from, or otherwise impact, a dam? If "Yes", identify the dam.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
12.0.1	Dam Name				
13.0	Will the project involve operations (excluding during the construction period) that produce air emissions (i.e., NOX, VOC, etc.)? If "Yes", identify each type of emission followed by the amount of that emission.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
13.0.1	Enter all types & amounts of emissions; separate each set with semicolons.	The Project operational total Potential to Emit (PTE) in tons per year includes: NOx – 141; CO – 141; SO2 – 5.8; PM10 – 28; PM2.5 – 28; VOC – 13; GHG – 260,800; CH2O – 3.9; Total HAPs – 5.1			
14.0	Does the project include the construction or modification of a drinking water supply to serve 15 or more connections or 25 or more people, at least 60 days out of the year? If "Yes", check all proposed sub-facilities.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
14.0.1	Number of Persons Served				
14.0.2	Number of Employee/Guests				
14.0.3	Number of Connections				
14.0.4	Sub-Fac: Distribution System	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.5	Sub-Fac: Water Treatment Plant	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.6	Sub-Fac: Source	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.7	Sub-Fac: Pump Station	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.8	Sub Fac: Transmission Main	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.9	Sub-Fac: Storage Facility	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
15.0	Will your project include infiltration of storm water or waste water to ground water within one-half mile of a public water supply well, spring or infiltration gallery?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
16.0	Is your project to be served by an existing public water supply? If "Yes", indicate name of supplier and attach letter from supplier stating that it will serve the project.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
16.0.1	Supplier's Name				
16.0.2	Letter of Approval from Supplier is Attached	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
17.0	Will this project involve a new or increased drinking water withdrawal from a stream or other water body? If "Yes", should reference both Water Supply and Watershed Management.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
17.0.1	Stream Name				
18.0	Will the construction or operation of this project involve treatment, storage, reuse, or disposal of waste? If "Yes", indicate what type (i.e., hazardous, municipal (including infectious & chemotherapeutic), residual) and the amount to be treated, stored, re-used or disposed.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
18.0.1	Type & Amount				
19.0	Will your project involve the removal of coal, minerals, etc. as part of any earth disturbance activities?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
20.0	Does your project involve installation of a field constructed underground storage tank? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
20.0.1	Enter all substances & capacity of each; separate each set with semicolons.				
21.0	Does your project involve installation of an aboveground storage tank greater than 21,000 gallons capacity at an existing facility? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
21.0.1	Enter all substances & capacity of each; separate each set with semicolons.				

22.0 Does your project involve installation of a tank greater than 1,100 gallons which will contain a highly hazardous substance as defined in DEP's Regulated Substances List, 2570-BK-DEP2724? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit. Yes No

22.0.1 Enter all substances & capacity of each; separate each set with semicolons.

23.0 Does your project involve installation of a storage tank at a new facility with a total AST capacity greater than 21,000 gallons? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit. Yes No

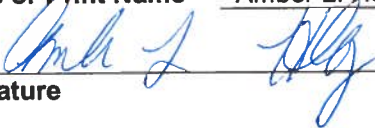
23.0.1 Enter all substances & capacity of each; separate each set with semicolons.

24.0 Will the intended activity involve the use of a radiation source? Yes No

CERTIFICATION

I certify that I have the authority to submit this application on behalf of the applicant named herein and that the information provided in this application is true and correct to the best of my knowledge and information.

Type or Print Name Amber L. Holly



Environmental Project Manager

12/10/18

Signature

Title

Date

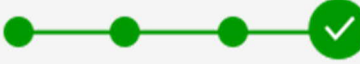
Subject:

FW: FedEx Shipment 773978341093 Delivered

Your package has been delivered

Tracking # 773978341093

Ship date: Mon, 12/17/2018	Delivery date: Tue, 12/18/2018 2:51 pm
Sarah Binckley AECOM CONSHOHOCKEN, PA 19428 US	Doug Bruce Bethlehem Township 4225 Easton Avenue BETHLEHEM, PA 18020 US



Delivered



Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	773978341093
Status:	Delivered: 12/18/2018 2:51 PM Signed for By: K.YEAGER
Reference:	60414094. 20000363.00035.08.
Signed for by:	K.YEAGER
Delivery location:	BETHLEHEM, PA
Delivered to:	Receptionist/Front Desk
Service type:	FedEx Standard Overnight®
Packaging type:	FedEx® Envelope
Number of pieces:	1
Weight:	0.50 lb.
Special handling/Services:	Deliver Weekday
Standard transit:	12/18/2018 by 3:00 pm

 Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 3:50 PM CST on 12/18/2018.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

Standard transit is the date and time the package is scheduled to be delivered by, based on the selected service, destination and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

© 2018 Federal Express Corporation. The content of this message is protected by copyright and trademark laws under U.S. and international law. Review our [privacy policy](#). All rights reserved.

Thank you for your business.



625 West Ridge Pike
Suite E-100
Conshohocken, PA 19428
www.aecom.com

610 832 3500 tel
610 832 3501 fax

December 17, 2018

Shawn Leidy
East Allen Township
5344 Nor-Bath Blvd.
Northampton, PA 18067

**Subject: Stormwater Management Analysis
PennEast Pipeline Project
Northampton County, Pennsylvania**

Dear Shawn Leidy,

On November 9, 2016, AECOM notified East Allen Township that PennEast Pipeline Company, LLC had submitted Pennsylvania Chapter 105 Joint Permit Applications (JPAs) for authorization of wetland and watercourse crossings for the PennEast Pipeline Project (Project). PennEast will be submitting updated JPAs to the Pennsylvania Department of Environmental Protection (PADEP) in December 2018. In accordance with 25 Pennsylvania Code §105.13(e)(1)(v), PennEast is providing this stormwater management analysis for Project impacts within East Allen Township.

Project Description

PennEast proposes to construct, install, and operate the Project facilities to provide approximately 1.1 million dekatherms per day (MMDth/d) of year-round natural gas transportation services from the Marcellus Shale producing region in northern Pennsylvania to markets in New Jersey, eastern and southeastern Pennsylvania, and surrounding states. The Project will include a new pipeline and aboveground facilities that will provide a new source of low cost natural gas and enhance the region's supply diversity. The Project facilities include a 36-inch diameter, 115-mile mainline pipeline extending from Luzerne County, Pennsylvania, to Mercer County, New Jersey. The Project will extend from various receipt point interconnections in the eastern Marcellus Shale region to various delivery point interconnections in the heart of major northeastern natural gas-consuming markets.

Stormwater Management Analysis

Within East Allen Township, PennEast proposes to construct approximately 0.8 miles of 36-inch diameter pipeline, which will be located within the Monocacy Creek watershed, for which an Act 167 Stormwater Management Plan has been approved. A location map illustrating the location of the proposed PennEast Mainline Pipeline is included as Attachment 1.

The pipeline facilities will be restored to pre-construction grade and revegetated following construction in accordance with PennEast's Erosion and Sediment Control Plan (E&SCP), Site Restoration Plan, and the Federal Energy Regulatory Commission's (FERC's) Upland Erosion Control, Revegetation and Maintenance Plan. Existing drainage patterns will be maintained as feasible by utilizing the existing contours or restoring any disturbed area to the existing condition or meadow. Restoration measures will include the re-establishment of original grade and drainage patterns to the extent practicable. Erosion and sedimentation control best management practices will be maintained until final stabilization is achieved to minimize the likelihood of post-construction erosion. The rate and volume of stormwater runoff from the Project area in the post-construction condition is not expected to exceed that of the pre-construction condition. The E&SCP and Site



Restoration Plan will be reviewed by the PADEP and Northampton County Conservation District as part of the Erosion and Sediment Control General Permit (ESCGP) application process.

PennEast will continue to coordinate with the PADEP and the Northampton County Conservation District regarding stormwater management best management practices to prevent an increase in the rate of stormwater runoff and minimize any increase in stormwater runoff volume. If you have any comments regarding consistency with the approved stormwater management plans, please direct comments to the PADEP Northeast Regional Office, Waterways and Wetlands Program at 2 Public Square, Wilkes-Barre, Pennsylvania 18701-1915 or call 570-826-2511.

Yours sincerely,

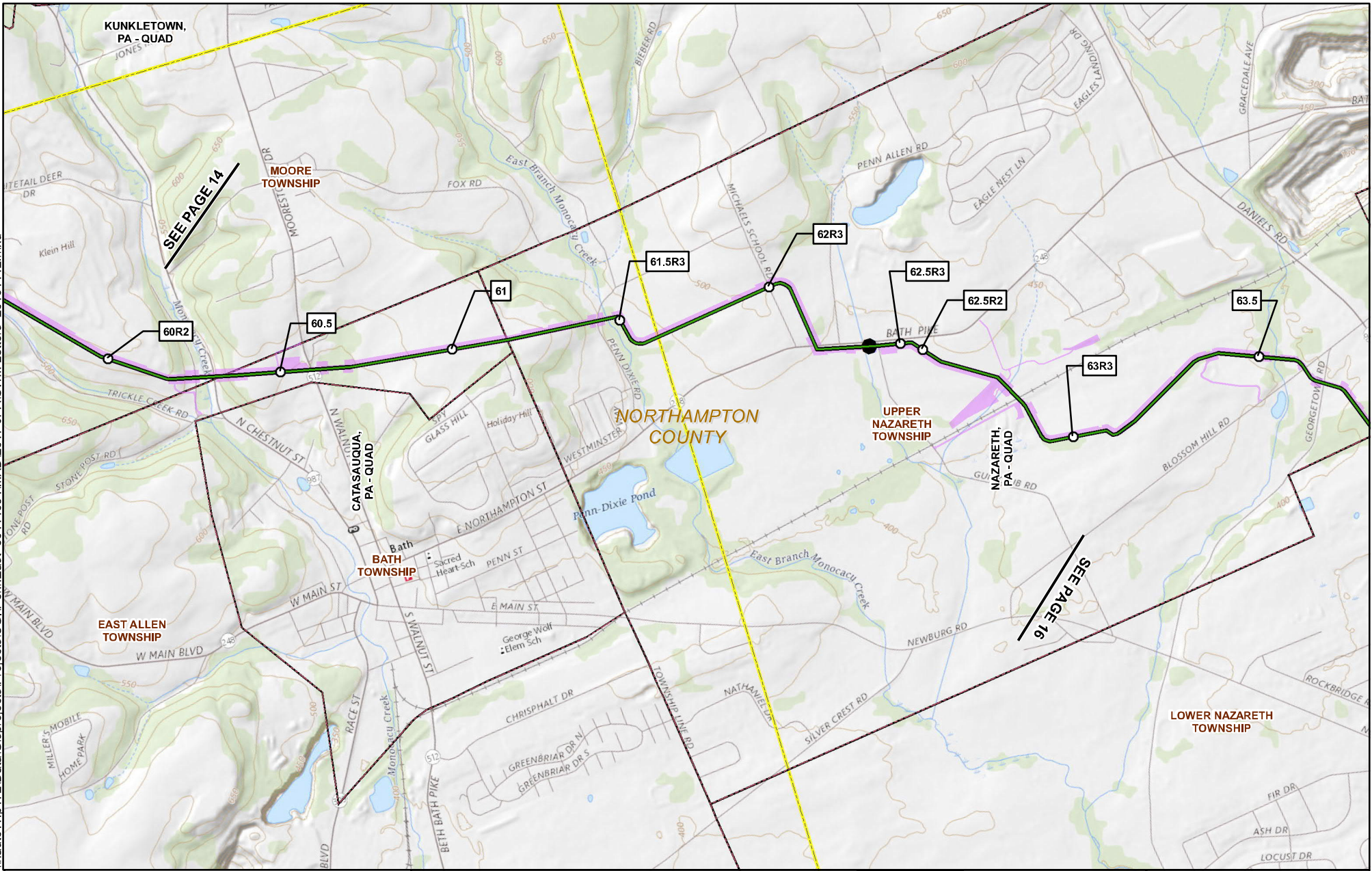
A handwritten signature in black ink that reads "Sarah K. Binckley". The signature is written in a cursive, flowing style.

Sarah K. Binckley
AECOM

cc: Casey Monagan, UGI Energy Services
Amber Holly, UGI Energy Services

ATTACHMENT 1
PROJECT LOCATION MAP

\\nadc1vfp172\Data\GIS\projects\Projects\UGI\PennEast_60414094\MXD\2017_JPA\SWM Letters 20181112.mxd



1	MILEPOST		PROPOSED CONSTRUCTION LIMIT
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)		USGS QUADRANGLE BOUNDARY
	PROPOSED PERMANENT ABOVE GROUND FACILITY		TOWNSHIP BOUNDARY
	PROPOSED HELLERTOWN LATERAL		COUNTY BOUNDARY
	PROPOSED PENNEAST PIPELINE CENTERLINE		STATE BOUNDARY

PENNEAST PIPELINE PROJECT
USGS QUADRANGLE MAP

NORTHAMPTON COUNTY, PENNSYLVANIA

ABSOLUTE SCALE: 1:24,000
REFERENCE SCALE: 1 IN = 2,000 FT

DRAWN BY: KFS
CHECKED BY:
APPROVED BY:
REV. DATE: 11/19/2018
REVISION:
DESC: ISSUED FOR PERMITTING
PAGE: PAGE 15 OF 20

Form



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

GENERAL INFORMATION FORM – AUTHORIZATION APPLICATION

Before completing this General Information Form (GIF), read the step-by-step instructions provided in this application package. This version of the General Information Form (GIF) must be completed and returned with any program-specific application being submitted to the Department.

Related ID#s (If Known)		DEP USE ONLY	
Client ID# _____	APS ID# _____	Date Received & General Notes	
Site ID# _____	Auth ID# _____		
Facility ID# _____			

CLIENT INFORMATION

DEP Client ID#	Client Type / Code			
	LLC			
Organization Name or Registered Fictitious Name		Employer ID# (EIN)	Dun & Bradstreet ID#	
PennEast Pipeline Company LLC		47-1573364		
Individual Last Name	First Name	MI	Suffix	SSN
Additional Individual Last Name	First Name	MI	Suffix	SSN
Mailing Address Line 1		Mailing Address Line 2		
1 Meridian Boulevard		Suite 2C01		
Address Last Line – City		State	ZIP+4	Country
Wyomissing		PA	19610	USA
Client Contact Last Name	First Name	MI	Suffix	
Holly	Amber			
Client Contact Title		Phone	Ext	
Environmental Project Manager		610-373-7999	1172	
Email Address		FAX		
aholly@ugies.com				

SITE INFORMATION

DEP Site ID#	Site Name				
	PennEast Pipeline Project				
EPA ID#	Estimated Number of Employees to be Present at Site				
Description of Site					
Proposed natural gas pipeline right-of-way and the associated temporary workspace, compressor station, appurtenant facilities, access roads, staging areas, and wareyards necessary to construct the Project. Additional site description information is provided in JPA Section J - Project Narrative.					
County Name	Municipality	City	Boro	Twp	State
Luzerne, Carbon, Monroe, Northampton, and Bucks	(Luzerne:) Bear Creek Twp, Dallas Twp, Jenkins Twp, Kingston Twp, Plains Twp, West Wyoming Borough, Wyoming Borough, (Carbon:) Kidder Twp, Lower Towamensing Twp, Penn Forest Twp, Towamensing Twp, (Monroe:) Eldred Twp, (Northampton:) Bethlehem Twp, East Allen Twp, Easton City, Lower Nazareth Twp, Lower Saucon Twp, Moore Twp, Upper Nazareth Twp, Williams Twp, (Bucks:) Durham Twp, Riegelsville Borough	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	PA
County Name	Municipality	City	Boro	Twp	State
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Site Location Line 1		Site Location Line 2			
The PA portion of the PennEast Mainline Pipeline begins in Dallas Twp, Luzerne County and extends to Durham		The Hellertown Lateral is located in Lower Saucon Twp, Northampton County. Additional site location information			

Twp, Bucks County. Additional site location information is provided in JPA Section J - Project Narrative.

Site Location Last Line – City State ZIP+4

Detailed Written Directions to Site

From Wilkes-Barre: head north on PA-309. At the intersection with State Route 415, bear right to continue on State Route 309/Tunkhannock Highway. After 1 mile, turn right on Upper Demunds Road. Immediately turn right on Hildebrandt Road. After 0.7 mile, turn right onto an unnamed road and follow 0.25 mile to the Wyoming Interconnect and the start of the PennEast Mainline. The entry and exit location for each county crossed by the Project is provided in JPA Section J - Project Narrative.

Site Contact Last Name Holly		First Name Amber	MI	Suffix
Site Contact Title Environmental Project Manager		Site Contact Firm UGI Energy Services, LLC		
Mailing Address Line 1 1 Meridian Boulevard		Mailing Address Line 2 Suite 2C01		
Mailing Address Last Line – City Wyomissing		State PA	ZIP+4 19610	
Phone 610-373-7999	Ext 1172	FAX	Email Address aholly@ugies.com	
NAICS Codes (Two- & Three-Digit Codes – List All That Apply) 22, 23, 48			6-Digit Code (Optional) 221210, 237120, 486210	
Client to Site Relationship OWNOP				

FACILITY INFORMATION

Modification of Existing Facility		Yes	No
1.	Will this project modify an existing facility, system, or activity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.	Will this project involve an addition to an existing facility, system, or activity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If "Yes", check all relevant facility types and provide DEP facility identification numbers below.

Facility Type	DEP Fac ID#	Facility Type	DEP Fac ID#
<input type="checkbox"/> Air Emission Plant	_____	<input type="checkbox"/> Industrial Minerals Mining Operation	_____
<input type="checkbox"/> Beneficial Use (water)	_____	<input type="checkbox"/> Laboratory Location	_____
<input type="checkbox"/> Blasting Operation	_____	<input type="checkbox"/> Land Recycling Cleanup Location	_____
<input type="checkbox"/> Captive Hazardous Waste Operation	_____	<input type="checkbox"/> Mine DrainageTrmt/LandRecyProjLocation	_____
<input type="checkbox"/> Coal Ash Beneficial Use Operation	_____	<input type="checkbox"/> Municipal Waste Operation	_____
<input type="checkbox"/> Coal Mining Operation	_____	<input type="checkbox"/> Oil & Gas Encroachment Location	_____
<input type="checkbox"/> Coal Pillar Location	_____	<input type="checkbox"/> Oil & Gas Location	_____
<input type="checkbox"/> Commercial Hazardous Waste Operation	_____	<input type="checkbox"/> Oil & Gas Water Poll Control Facility	_____
<input type="checkbox"/> Dam Location	_____	<input type="checkbox"/> Oil & Gas Wastewater Storage Impoundment	_____
<input type="checkbox"/> Deep Mine Safety Operation -Anthracite	_____	<input type="checkbox"/> Public Water Supply System	_____
<input type="checkbox"/> Deep Mine Safety Operation -Bituminous	_____	<input type="checkbox"/> Radiation Facility	_____
<input type="checkbox"/> Deep Mine Safety Operation -Ind Minerals	_____	<input type="checkbox"/> Residual Waste Operation	_____
<input type="checkbox"/> Encroachment Location (water, wetland)	_____	<input type="checkbox"/> Storage Tank Location	_____
<input type="checkbox"/> Erosion & Sediment Control Facility	_____	<input type="checkbox"/> Water Pollution Control Facility	_____
<input type="checkbox"/> Explosive Storage Location	_____	<input type="checkbox"/> Water Resource	_____
		<input type="checkbox"/> Other:	_____

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
Station 0+00	41	20	48	75	56	43
Horizontal Accuracy Measure	Feet			--or-- Meters		
Horizontal Reference Datum Code	<input type="checkbox"/> North American Datum of 1927 <input type="checkbox"/> North American Datum of 1983 <input checked="" type="checkbox"/> World Geodetic System of 1984					
Horizontal Collection Method Code	GISDR					
Reference Point Code	CENTER					
Altitude	Feet 1280			--or-- Meters		
Altitude Datum Name	<input type="checkbox"/> The National Geodetic Vertical Datum of 1929 <input checked="" type="checkbox"/> The North American Vertical Datum of 1988 (NAVD88)					

Altitude (Vertical) Location Datum Collection Method Code	TOPO	
Geometric Type Code	POINT	
Data Collection Date	12/08/2018	
Source Map Scale Number	1	Inch(es) = 2000 Feet
	--or--	Centimeter(s) = Meters

PROJECT INFORMATION

Project Name
PennEast Pipeline Project

Project Description
See Project Description in JPA Section J

Project Consultant Last Name	First Name	MI	Suffix
Binckley	Sarah	K	

Project Consultant Title **Consulting Firm**
Project Manager AECOM

Mailing Address Line 1	Mailing Address Line 2
625 West Ridge Pike	Suite E-100
Address Last Line – City	State ZIP+4
Conshohocken	PA 19428

Phone	Ext	FAX	Email Address
610-832-2713		610-832-3501	sarah.binckley@aecom.com

Time Schedules	Project Milestone (Optional)
09/2015	PennEast submitted FERC Application for Certificate of Public Convenience and Necessity
02/2016 - 03/2016	PennEast submitted PADEP Joint Permit Applications and ESCGP-2 applications
01/2018	Received FERC Certificate of Public Convenience and Necessity
12/2018	PennEast submits revised Joint Permit Applications and ESCGP-3 applications

- Have you informed the surrounding community and addressed any concerns prior to submitting the application to the Department? Yes No
- Is your project funded by state or federal grants? Yes No
Note: If "Yes", specify what aspect of the project is related to the grant and provide the grant source, contact person and grant expiration date.
 Aspect of Project Related to Grant _____
 Grant Source: _____
 Grant Contact Person: _____
 Grant Expiration Date: _____
- Is this application for an authorization on Appendix A of the Land Use Policy? (For referenced list, see Appendix A of the Land Use Policy attached to GIF instructions) Yes No
Note: If "No" to Question 3, the application is not subject to the Land Use Policy.
 If "Yes" to Question 3, the application is subject to this policy and the Applicant should answer the additional questions in the Land Use Information section.

LAND USE INFORMATION

Note: Applicants are encouraged to submit copies of local land use approvals or other evidence of compliance with local comprehensive plans and zoning ordinances.

- Is there an adopted county or multi-county comprehensive plan? Yes No
- Is there an adopted municipal or multi-municipal comprehensive plan? Yes No
- Is there an adopted county-wide zoning ordinance, municipal zoning ordinance or joint municipal zoning ordinance? Yes No
Note: If the Applicant answers "No" to either Questions 1, 2 or 3, the provisions of the PA MPC are not applicable and the Applicant does not need to respond to questions 4 and 5 below.
 If the Applicant answers "Yes" to questions 1, 2 and 3, the Applicant should respond to questions 4 and 5 below.
- Does the proposed project meet the provisions of the zoning ordinance or does the proposed project have zoning approval? If zoning approval has been received, attach documentation. Yes No
- Have you attached Municipal and County Land Use Letters for the project? Yes No

COORDINATION INFORMATION

Note: The PA Historical and Museum Commission must be notified of proposed projects in accordance with DEP Technical Guidance Document 012-0700-001 and the accompanying Cultural Resource Notice Form.

If the activity will be a mining project (i.e., mining of coal or industrial minerals, coal refuse disposal and/or the operation of a coal or industrial minerals preparation/processing facility), respond to questions 1.0 through 2.5 below.

If the activity will not be a mining project, skip questions 1.0 through 2.5 and begin with question 3.0.

1.0	Is this a coal mining project? If "Yes", respond to 1.1-1.6. If "No", skip to Question 2.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
1.1	Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be equal to or greater than 200 tons/day?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.2	Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be greater than 50,000 tons/year?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.3	Will this coal mining project involve coal preparation/ processing activities in which thermal coal dryers or pneumatic coal cleaners will be used?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.4	For this coal mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.5	Will this coal mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.6	Will this coal mining project involve underground coal mining to be conducted within 500 feet of an oil or gas well?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.0	Is this a non-coal (industrial minerals) mining project? If "Yes", respond to 2.1-2.6. If "No", skip to Question 3.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
2.1	Will this non-coal (industrial minerals) mining project involve the crushing and screening of non-coal minerals other than sand and gravel?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.2	Will this non-coal (industrial minerals) mining project involve the crushing and/or screening of sand and gravel with the exception of wet sand and gravel operations (screening only) and dry sand and gravel operations with a capacity of less than 150 tons/hour of unconsolidated materials?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.3	Will this non-coal (industrial minerals) mining project involve the construction, operation and/or modification of a portable non-metallic (i.e., non-coal) minerals processing plant under the authority of the General Permit for Portable Non-metallic Mineral Processing Plants (i.e., BAQ-PGPA/GP-3)?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.4	For this non-coal (industrial minerals) mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.5	Will this non-coal (industrial minerals) mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No

3.0	Will your project, activity, or authorization have anything to do with a well related to oil or gas production, have construction within 200 feet of, affect an oil or gas well, involve the waste from such a well, or string power lines above an oil or gas well? If "Yes", respond to 3.1-3.3. If "No", skip to Question 4.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
3.1	Does the oil- or gas-related project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water (including wetlands)?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
3.2	Will the oil- or gas-related project involve discharge of industrial wastewater or stormwater to a dry swale, surface water, ground water or an existing sanitary sewer system or storm water system? If "Yes", discuss in <i>Project Description</i> .	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
3.3	Will the oil- or gas-related project involve the construction and operation of industrial waste treatment facilities?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
4.0	Will the project involve a construction activity that results in earth disturbance? If "Yes", specify the total disturbed acreage. 4.0.1 Total Disturbed Acreage 1289.4	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.0	Does the project involve any of the following? If "Yes", respond to 5.1-5.3. If "No", skip to Question 6.0.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.1	Water Obstruction and Encroachment Projects – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.2	Wetland Impacts – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a wetland?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.3	Floodplain Projects by the commonwealth, a Political Subdivision of the commonwealth or a Public Utility – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a floodplain?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
6.0	Will the project involve discharge of stormwater or wastewater from an industrial activity to a dry swale, surface water, ground water or an existing sanitary sewer system or separate storm water system?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
7.0	Will the project involve the construction and operation of industrial waste treatment facilities?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
8.0	Will the project involve construction of sewage treatment facilities, sanitary sewers, or sewage pumping stations? If "Yes", indicate estimated proposed flow (gal/day). Also, discuss the sanitary sewer pipe sizes and the number of pumping stations/treatment facilities/name of downstream sewage facilities in the <i>Project Description</i> , where applicable. 8.0.1 Estimated Proposed Flow (gal/day)	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
9.0	Will the project involve the subdivision of land, or the generation of 800 gpd or more of sewage on an existing parcel of land or the generation of an additional 400 gpd of sewage on an already-developed parcel, or the generation of 800 gpd or more of industrial wastewater that would be discharged to an existing sanitary sewer system? 9.0.1 Was Act 537 sewage facilities planning submitted and approved by DEP? If "Yes" attach the approval letter. Approval required prior to 105/NPDES approval.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
10.0	Is this project for the beneficial use of biosolids for land application within Pennsylvania? If "Yes" indicate how much (i.e. gallons or dry tons per year). 10.0.1 Gallons Per Year (residential septage) _____ 10.0.2 Dry Tons Per Year (biosolids) _____	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
11.0	Does the project involve construction, modification or removal of a dam? If "Yes", identify the dam. 11.0.1 Dam Name	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No

12.0	Will the project interfere with the flow from, or otherwise impact, a dam? If "Yes", identify the dam.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
12.0.1	Dam Name				
13.0	Will the project involve operations (excluding during the construction period) that produce air emissions (i.e., NOX, VOC, etc.)? If "Yes", identify each type of emission followed by the amount of that emission.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
13.0.1	Enter all types & amounts of emissions; separate each set with semicolons.	The Project operational total Potential to Emit (PTE) in tons per year includes: NOx – 141; CO – 141; SO2 – 5.8; PM10 – 28; PM2.5 – 28; VOC – 13; GHG – 260,800; CH2O – 3.9; Total HAPs – 5.1			
14.0	Does the project include the construction or modification of a drinking water supply to serve 15 or more connections or 25 or more people, at least 60 days out of the year? If "Yes", check all proposed sub-facilities.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
14.0.1	Number of Persons Served				
14.0.2	Number of Employee/Guests				
14.0.3	Number of Connections				
14.0.4	Sub-Fac: Distribution System	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.5	Sub-Fac: Water Treatment Plant	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.6	Sub-Fac: Source	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.7	Sub-Fac: Pump Station	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.8	Sub Fac: Transmission Main	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.9	Sub-Fac: Storage Facility	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
15.0	Will your project include infiltration of storm water or waste water to ground water within one-half mile of a public water supply well, spring or infiltration gallery?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
16.0	Is your project to be served by an existing public water supply? If "Yes", indicate name of supplier and attach letter from supplier stating that it will serve the project.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
16.0.1	Supplier's Name				
16.0.2	Letter of Approval from Supplier is Attached	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
17.0	Will this project involve a new or increased drinking water withdrawal from a stream or other water body? If "Yes", should reference both Water Supply and Watershed Management.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
17.0.1	Stream Name				
18.0	Will the construction or operation of this project involve treatment, storage, reuse, or disposal of waste? If "Yes", indicate what type (i.e., hazardous, municipal (including infectious & chemotherapeutic), residual) and the amount to be treated, stored, re-used or disposed.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
18.0.1	Type & Amount				
19.0	Will your project involve the removal of coal, minerals, etc. as part of any earth disturbance activities?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
20.0	Does your project involve installation of a field constructed underground storage tank? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
20.0.1	Enter all substances & capacity of each; separate each set with semicolons.				
21.0	Does your project involve installation of an aboveground storage tank greater than 21,000 gallons capacity at an existing facility? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
21.0.1	Enter all substances & capacity of each; separate each set with semicolons.				

22.0 Does your project involve installation of a tank greater than 1,100 gallons which will contain a highly hazardous substance as defined in DEP's Regulated Substances List, 2570-BK-DEP2724? If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. Yes No

22.0.1 Enter all substances & capacity of each; separate each set with semicolons.

23.0 Does your project involve installation of a storage tank at a new facility with a total AST capacity greater than 21,000 gallons? If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. Yes No

23.0.1 Enter all substances & capacity of each; separate each set with semicolons.

24.0 Will the intended activity involve the use of a radiation source? Yes No

CERTIFICATION

I certify that I have the authority to submit this application on behalf of the applicant named herein and that the information provided in this application is true and correct to the best of my knowledge and information.

Type or Print Name Amber L. Holly



Environmental Project Manager

Signature

Title

12/10/18

Date

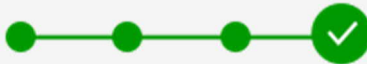
Subject:

FW: FedEx Shipment 773978707353 Delivered

Your package has been delivered

Tracking # 773978707353

Ship date: Mon, 12/17/2018	Delivery date: Tue, 12/18/2018 3:08 pm
Sarah Binckley AECOM CONSHOHOCKEN, PA 19428 US	Shawn Leidy East Allen Township 5344 Nor-Bath Boulevard NORTHAMPTON, PA 18067 US



Delivered



Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	773978707353
Status:	Delivered: 12/18/2018 3:08 PM Signed for By: D.GREEN
Reference:	60414094. 20000363.00035.08.
Signed for by:	D.GREEN
Delivery location:	NORTHAMPTON, PA
Delivered to:	Receptionist/Front Desk
Service type:	FedEx Standard Overnight®
Packaging type:	FedEx® Envelope
Number of pieces:	1
Weight:	0.50 lb.
Special handling/Services:	Deliver Weekday
Standard transit:	12/18/2018 by 3:00 pm

 Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 2:10 PM CST on 12/18/2018.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

Standard transit is the date and time the package is scheduled to be delivered by, based on the selected service, destination and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

© 2018 Federal Express Corporation. The content of this message is protected by copyright and trademark laws under U.S. and international law. Review our [privacy policy](#). All rights reserved.

Thank you for your business.



625 West Ridge Pike
Suite E-100
Conshohocken, PA 19428
www.aecom.com

610 832 3500 tel
610 832 3501 fax

December 17, 2018

Lori Seese
Lower Nazareth Township Supervisors
623 Municipal Drive, Suite 220
Nazareth, PA 18064

**Subject: Updated Stormwater Management Analysis
PennEast Pipeline Project
Northampton County, Pennsylvania**

Dear Lori Seese,

On November 9, 2016, AECOM notified Lower Nazareth Township that PennEast Pipeline Company, LLC had submitted Pennsylvania Chapter 105 Joint Permit Applications (JPAs) for authorization of wetland and watercourse crossings for the PennEast Pipeline Project (Project). PennEast will be submitting updated JPAs to the Pennsylvania Department of Environmental Protection (PADEP) in December 2018. In accordance with 25 Pennsylvania Code §105.13(e)(I)(v), PennEast is providing this stormwater management analysis for Project impacts within Lower Nazareth Township.

Project Description

PennEast proposes to construct, install, and operate the Project facilities to provide approximately 1.1 million dekatherms per day (MMDth/d) of year-round natural gas transportation services from the Marcellus Shale producing region in northern Pennsylvania to markets in New Jersey, eastern and southeastern Pennsylvania, and surrounding states. The Project will include a new pipeline and aboveground facilities that will provide a new source of low cost natural gas and enhance the region's supply diversity. The Project facilities include a 36-inch diameter, 115-mile mainline pipeline extending from Luzerne County, Pennsylvania, to Mercer County, New Jersey. The Project will extend from various receipt point interconnections in the eastern Marcellus Shale region to various delivery point interconnections in the heart of major northeastern natural gas-consuming markets.

Stormwater Management Analysis

Within Lower Nazareth Township, PennEast proposes to construct approximately 3.2 miles of 36-inch diameter pipeline, which will be located within the Monocacy Creek and Bushkill Creek watersheds, for which Act 167 Stormwater Management Plans have been approved. A location map illustrating the location of the proposed PennEast Mainline Pipeline is included as Attachment 1.

The pipeline facilities will be restored to pre-construction grade and revegetated following construction in accordance with PennEast's Erosion and Sediment Control Plan (E&SCP), Site Restoration Plan, and the Federal Energy Regulatory Commission's (FERC's) Upland Erosion Control, Revegetation and Maintenance Plan. Existing drainage patterns will be maintained as feasible by utilizing the existing contours or restoring any disturbed area to the existing condition or meadow. Restoration measures will include the re-establishment of original grade and drainage patterns to the extent practicable. Erosion and sedimentation control best management practices will be maintained until final stabilization is achieved to minimize the likelihood of post-construction erosion. The rate and volume of stormwater runoff from the Project area in the post-construction condition is not expected to exceed that of the pre-construction condition. The E&SCP and Site



Restoration Plan will be reviewed by the PADEP and Northampton County Conservation District as part of the Erosion and Sediment Control General Permit (ESCGP) application process.

PennEast will continue to coordinate with the PADEP and the Northampton County Conservation District regarding stormwater management best management practices to prevent an increase in the rate of stormwater runoff and minimize any increase in stormwater runoff volume. If you have any comments regarding consistency with the approved stormwater management plans, please direct comments to the PADEP Northeast Regional Office, Waterways and Wetlands Program at 2 Public Square, Wilkes-Barre, Pennsylvania 18701-1915 or call 570-826-2511.

Yours sincerely,

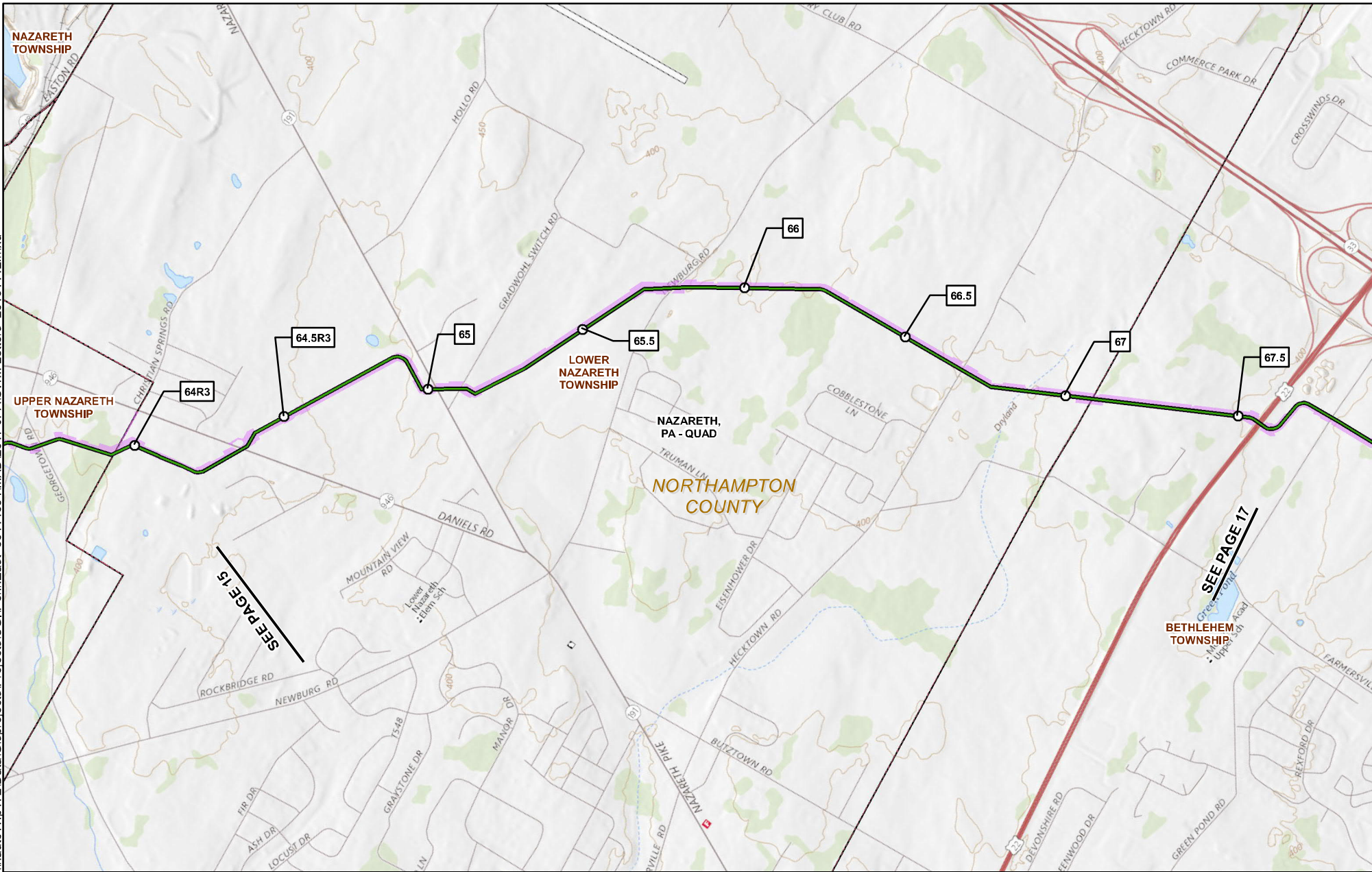
A handwritten signature in black ink that reads 'Sarah K. Binckley'. The signature is written in a cursive, flowing style.

Sarah K. Binckley
AECOM

cc: Casey Monagan, UGI Energy Services
Amber Holly, UGI Energy Services

ATTACHMENT 1
PROJECT LOCATION MAP

I:\nadc\1vfp\172\GIS\projects\Projects\UG\PennEast_60414094\MXD\2017_JPA\SWM Letters 2018\1112.mxd



1	MILEPOST		PROPOSED CONSTRUCTION LIMIT
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)		USGS QUADRANGLE BOUNDARY
	PROPOSED PERMANENT ABOVE GROUND FACILITY		TOWNSHIP BOUNDARY
	PROPOSED HELLERTOWN LATERAL		COUNTY BOUNDARY
	PROPOSED PENNEAST PIPELINE CENTERLINE		STATE BOUNDARY

PENNEAST PIPELINE PROJECT USGS QUADRANGLE MAP

**NORTHAMPTON COUNTY,
PENNSYLVANIA**



ABSOLUTE SCALE:
1:24,000

REFERENCE SCALE:
1 IN = 2,000 FT



DRAWN BY: KFS
CHECKED BY:
APPROVED BY:
REV. DATE: 11/19/2018
REVISION:
DESC: ISSUED FOR PERMITTING
PAGE: PAGE 16 OF 20

Form



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

GENERAL INFORMATION FORM – AUTHORIZATION APPLICATION

Before completing this General Information Form (GIF), read the step-by-step instructions provided in this application package. This version of the General Information Form (GIF) must be completed and returned with any program-specific application being submitted to the Department.

Related ID#s (If Known) Client ID# _____ APS ID# _____ Site ID# _____ Auth ID# _____ Facility ID# _____		DEP USE ONLY Date Received & General Notes
--	--	--

CLIENT INFORMATION

DEP Client ID#	Client Type / Code			
	LLC			
Organization Name or Registered Fictitious Name	Employer ID# (EIN)	Dun & Bradstreet ID#		
PennEast Pipeline Company LLC	47-1573364			
Individual Last Name	First Name	MI	Suffix	SSN
Additional Individual Last Name	First Name	MI	Suffix	SSN
Mailing Address Line 1	Mailing Address Line 2			
1 Meridian Boulevard	Suite 2C01			
Address Last Line – City	State	ZIP+4	Country	
Wyomissing	PA	19610	USA	
Client Contact Last Name	First Name	MI	Suffix	
Holly	Amber			
Client Contact Title	Phone		Ext	
Environmental Project Manager	610-373-7999		1172	
Email Address	FAX			
aholly@ugies.com				

SITE INFORMATION

DEP Site ID#	Site Name				
	PennEast Pipeline Project				
EPA ID#	Estimated Number of Employees to be Present at Site				
Description of Site					
Proposed natural gas pipeline right-of-way and the associated temporary workspace, compressor station, appurtenant facilities, access roads, staging areas, and wareyards necessary to construct the Project. Additional site description information is provided in JPA Section J - Project Narrative.					
County Name	Municipality	City	Boro	Twp	State
Luzerne, Carbon, Monroe, Northampton, and Bucks	(Luzerne:) Bear Creek Twp, Dallas Twp, Jenkins Twp, Kingston Twp, Plains Twp, West Wyoming Borough, Wyoming Borough, (Carbon:) Kidder Twp, Lower Towamensing Twp, Penn Forest Twp, Towamensing Twp, (Monroe:) Eldred Twp, (Northampton:) Bethlehem Twp, East Allen Twp, Easton City, Lower Nazareth Twp, Lower Saucon Twp, Moore Twp, Upper Nazareth Twp, Williams Twp, (Bucks:) Durham Twp, Riegelsville Borough	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	PA
County Name	Municipality	City	Boro	Twp	State
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Site Location Line 1	Site Location Line 2				
The PA portion of the PennEast Mainline Pipeline begins in Dallas Twp, Luzerne County and extends to Durham	The Hellertown Lateral is located in Lower Saucon Twp, Northampton County. Additional site location information				

Twp, Bucks County. Additional site location information is provided in JPA Section J - Project Narrative.

Site Location Last Line – City State ZIP+4

Detailed Written Directions to Site

From Wilkes-Barre: head north on PA-309. At the intersection with State Route 415, bear right to continue on State Route 309/Tunkhannock Highway. After 1 mile, turn right on Upper Demunds Road. Immediately turn right on Hildebrandt Road. After 0.7 mile, turn right onto an unnamed road and follow 0.25 mile to the Wyoming Interconnect and the start of the PennEast Mainline. The entry and exit location for each county crossed by the Project is provided in JPA Section J - Project Narrative.

Site Contact Last Name Holly		First Name Amber	MI	Suffix
Site Contact Title Environmental Project Manager		Site Contact Firm UGI Energy Services, LLC		
Mailing Address Line 1 1 Meridian Boulevard		Mailing Address Line 2 Suite 2C01		
Mailing Address Last Line – City Wyomissing		State PA	ZIP+4 19610	
Phone 610-373-7999	Ext 1172	FAX	Email Address aholly@ugies.com	
NAICS Codes (Two- & Three-Digit Codes – List All That Apply) 22, 23, 48			6-Digit Code (Optional) 221210, 237120, 486210	
Client to Site Relationship OWNOP				

FACILITY INFORMATION

Modification of Existing Facility		Yes	No
1.	Will this project modify an existing facility, system, or activity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.	Will this project involve an addition to an existing facility, system, or activity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>If "Yes", check all relevant facility types and provide DEP facility identification numbers below.</i>			

Facility Type	DEP Fac ID#	Facility Type	DEP Fac ID#
<input type="checkbox"/> Air Emission Plant	_____	<input type="checkbox"/> Industrial Minerals Mining Operation	_____
<input type="checkbox"/> Beneficial Use (water)	_____	<input type="checkbox"/> Laboratory Location	_____
<input type="checkbox"/> Blasting Operation	_____	<input type="checkbox"/> Land Recycling Cleanup Location	_____
<input type="checkbox"/> Captive Hazardous Waste Operation	_____	<input type="checkbox"/> Mine DrainageTrmt/LandRecyProjLocation	_____
<input type="checkbox"/> Coal Ash Beneficial Use Operation	_____	<input type="checkbox"/> Municipal Waste Operation	_____
<input type="checkbox"/> Coal Mining Operation	_____	<input type="checkbox"/> Oil & Gas Encroachment Location	_____
<input type="checkbox"/> Coal Pillar Location	_____	<input type="checkbox"/> Oil & Gas Location	_____
<input type="checkbox"/> Commercial Hazardous Waste Operation	_____	<input type="checkbox"/> Oil & Gas Water Poll Control Facility	_____
<input type="checkbox"/> Dam Location	_____	<input type="checkbox"/> Oil & Gas Wastewater Storage Impoundment	_____
<input type="checkbox"/> Deep Mine Safety Operation -Anthracite	_____	<input type="checkbox"/> Public Water Supply System	_____
<input type="checkbox"/> Deep Mine Safety Operation -Bituminous	_____	<input type="checkbox"/> Radiation Facility	_____
<input type="checkbox"/> Deep Mine Safety Operation -Ind Minerals	_____	<input type="checkbox"/> Residual Waste Operation	_____
<input type="checkbox"/> Encroachment Location (water, wetland)	_____	<input type="checkbox"/> Storage Tank Location	_____
<input type="checkbox"/> Erosion & Sediment Control Facility	_____	<input type="checkbox"/> Water Pollution Control Facility	_____
<input type="checkbox"/> Explosive Storage Location	_____	<input type="checkbox"/> Water Resource	_____
		<input type="checkbox"/> Other:	_____

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
Station 0+00	41	20	48	75	56	43
Horizontal Accuracy Measure	Feet			--or-- Meters		
Horizontal Reference Datum Code	<input type="checkbox"/> North American Datum of 1927 <input type="checkbox"/> North American Datum of 1983 <input checked="" type="checkbox"/> World Geodetic System of 1984					
Horizontal Collection Method Code	GISDR					
Reference Point Code	CENTER					
Altitude	Feet 1280			--or-- Meters		
Altitude Datum Name	<input type="checkbox"/> The National Geodetic Vertical Datum of 1929 <input checked="" type="checkbox"/> The North American Vertical Datum of 1988 (NAVD88)					

Altitude (Vertical) Location Datum Collection Method Code	TOPO	
Geometric Type Code	POINT	
Data Collection Date	12/08/2018	
Source Map Scale Number	1	Inch(es) = 2000 Feet
	--or--	Centimeter(s) = Meters

PROJECT INFORMATION

Project Name
PennEast Pipeline Project

Project Description
See Project Description in JPA Section J

Project Consultant Last Name	First Name	MI	Suffix
Binckley	Sarah	K	

Project Consultant Title
Project Manager

Consulting Firm
AECOM

Mailing Address Line 1	Mailing Address Line 2
625 West Ridge Pike	Suite E-100
Address Last Line - City	State
Conshohocken	PA
	ZIP+4
	19428

Phone	Ext	FAX	Email Address
610-832-2713		610-832-3501	sarah.binckley@aecom.com

Time Schedules	Project Milestone (Optional)
09/2015	PennEast submitted FERC Application for Certificate of Public Convenience and Necessity
02/2016 - 03/2016	PennEast submitted PADEP Joint Permit Applications and ESCGP-2 applications
01/2018	Received FERC Certificate of Public Convenience and Necessity
12/2018	PennEast submits revised Joint Permit Applications and ESCGP-3 applications

- Have you informed the surrounding community and addressed any concerns prior to submitting the application to the Department? Yes No
- Is your project funded by state or federal grants? Yes No
Note: If "Yes", specify what aspect of the project is related to the grant and provide the grant source, contact person and grant expiration date.
 Aspect of Project Related to Grant _____
 Grant Source: _____
 Grant Contact Person: _____
 Grant Expiration Date: _____
- Is this application for an authorization on Appendix A of the Land Use Policy? (For referenced list, see Appendix A of the Land Use Policy attached to GIF instructions) Yes No
Note: If "No" to Question 3, the application is not subject to the Land Use Policy.
 If "Yes" to Question 3, the application is subject to this policy and the Applicant should answer the additional questions in the Land Use Information section.

LAND USE INFORMATION

Note: Applicants are encouraged to submit copies of local land use approvals or other evidence of compliance with local comprehensive plans and zoning ordinances.

- Is there an adopted county or multi-county comprehensive plan? Yes No
- Is there an adopted municipal or multi-municipal comprehensive plan? Yes No
- Is there an adopted county-wide zoning ordinance, municipal zoning ordinance or joint municipal zoning ordinance? Yes No
Note: If the Applicant answers "No" to either Questions 1, 2 or 3, the provisions of the PA MPC are not applicable and the Applicant does not need to respond to questions 4 and 5 below.
 If the Applicant answers "Yes" to questions 1, 2 and 3, the Applicant should respond to questions 4 and 5 below.
- Does the proposed project meet the provisions of the zoning ordinance or does the proposed project have zoning approval? If zoning approval has been received, attach documentation. Yes No
- Have you attached Municipal and County Land Use Letters for the project? Yes No

COORDINATION INFORMATION

Note: The PA Historical and Museum Commission must be notified of proposed projects in accordance with DEP Technical Guidance Document 012-0700-001 and the accompanying Cultural Resource Notice Form.

If the activity will be a mining project (i.e., mining of coal or industrial minerals, coal refuse disposal and/or the operation of a coal or industrial minerals preparation/processing facility), respond to questions 1.0 through 2.5 below.

If the activity will not be a mining project, skip questions 1.0 through 2.5 and begin with question 3.0.

1.0	Is this a coal mining project? If "Yes", respond to 1.1-1.6. If "No", skip to Question 2.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
1.1	Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be equal to or greater than 200 tons/day?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.2	Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be greater than 50,000 tons/year?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.3	Will this coal mining project involve coal preparation/ processing activities in which thermal coal dryers or pneumatic coal cleaners will be used?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.4	For this coal mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.5	Will this coal mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.6	Will this coal mining project involve underground coal mining to be conducted within 500 feet of an oil or gas well?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.0	Is this a non-coal (industrial minerals) mining project? If "Yes", respond to 2.1-2.6. If "No", skip to Question 3.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
2.1	Will this non-coal (industrial minerals) mining project involve the crushing and screening of non-coal minerals other than sand and gravel?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.2	Will this non-coal (industrial minerals) mining project involve the crushing and/or screening of sand and gravel with the exception of wet sand and gravel operations (screening only) and dry sand and gravel operations with a capacity of less than 150 tons/hour of unconsolidated materials?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.3	Will this non-coal (industrial minerals) mining project involve the construction, operation and/or modification of a portable non-metallic (i.e., non-coal) minerals processing plant under the authority of the General Permit for Portable Non-metallic Mineral Processing Plants (i.e., BAQ-PGPA/GP-3)?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.4	For this non-coal (industrial minerals) mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.5	Will this non-coal (industrial minerals) mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No

3.0	Will your project, activity, or authorization have anything to do with a well related to oil or gas production, have construction within 200 feet of, affect an oil or gas well, involve the waste from such a well, or string power lines above an oil or gas well? If "Yes", respond to 3.1-3.3. If "No", skip to Question 4.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
3.1	Does the oil- or gas-related project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water (including wetlands)?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
3.2	Will the oil- or gas-related project involve discharge of industrial wastewater or stormwater to a dry swale, surface water, ground water or an existing sanitary sewer system or storm water system? If "Yes", discuss in <i>Project Description</i> .	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
3.3	Will the oil- or gas-related project involve the construction and operation of industrial waste treatment facilities?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
4.0	Will the project involve a construction activity that results in earth disturbance? If "Yes", specify the total disturbed acreage. 4.0.1 Total Disturbed Acreage 1289.4	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.0	Does the project involve any of the following? If "Yes", respond to 5.1-5.3. If "No", skip to Question 6.0.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.1	Water Obstruction and Encroachment Projects – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.2	Wetland Impacts – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a wetland?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.3	Floodplain Projects by the commonwealth, a Political Subdivision of the commonwealth or a Public Utility – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a floodplain?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
6.0	Will the project involve discharge of stormwater or wastewater from an industrial activity to a dry swale, surface water, ground water or an existing sanitary sewer system or separate storm water system?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
7.0	Will the project involve the construction and operation of industrial waste treatment facilities?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
8.0	Will the project involve construction of sewage treatment facilities, sanitary sewers, or sewage pumping stations? If "Yes", indicate estimated proposed flow (gal/day). Also, discuss the sanitary sewer pipe sizes and the number of pumping stations/treatment facilities/name of downstream sewage facilities in the <i>Project Description</i> , where applicable. 8.0.1 Estimated Proposed Flow (gal/day)	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
9.0	Will the project involve the subdivision of land, or the generation of 800 gpd or more of sewage on an existing parcel of land or the generation of an additional 400 gpd of sewage on an already-developed parcel, or the generation of 800 gpd or more of industrial wastewater that would be discharged to an existing sanitary sewer system? 9.0.1 Was Act 537 sewage facilities planning submitted and approved by DEP? If "Yes" attach the approval letter. Approval required prior to 105/NPDES approval.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
10.0	Is this project for the beneficial use of biosolids for land application within Pennsylvania? If "Yes" indicate how much (i.e. gallons or dry tons per year). 10.0.1 Gallons Per Year (residential septage) _____ 10.0.2 Dry Tons Per Year (biosolids) _____	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
11.0	Does the project involve construction, modification or removal of a dam? If "Yes", identify the dam. 11.0.1 Dam Name	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No

12.0	Will the project interfere with the flow from, or otherwise impact, a dam? If "Yes", identify the dam.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
12.0.1	Dam Name				
13.0	Will the project involve operations (excluding during the construction period) that produce air emissions (i.e., NOX, VOC, etc.)? If "Yes", identify each type of emission followed by the amount of that emission.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
13.0.1	Enter all types & amounts of emissions; separate each set with semicolons.	The Project operational total Potential to Emit (PTE) in tons per year includes: NOx – 141; CO – 141; SO2 – 5.8; PM10 – 28; PM2.5 – 28; VOC – 13; GHG – 260,800; CH2O – 3.9; Total HAPs – 5.1			
14.0	Does the project include the construction or modification of a drinking water supply to serve 15 or more connections or 25 or more people, at least 60 days out of the year? If "Yes", check all proposed sub-facilities.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
14.0.1	Number of Persons Served				
14.0.2	Number of Employee/Guests				
14.0.3	Number of Connections				
14.0.4	Sub-Fac: Distribution System	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.5	Sub-Fac: Water Treatment Plant	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.6	Sub-Fac: Source	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.7	Sub-Fac: Pump Station	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.8	Sub Fac: Transmission Main	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.9	Sub-Fac: Storage Facility	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
15.0	Will your project include infiltration of storm water or waste water to ground water within one-half mile of a public water supply well, spring or infiltration gallery?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
16.0	Is your project to be served by an existing public water supply? If "Yes", indicate name of supplier and attach letter from supplier stating that it will serve the project.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
16.0.1	Supplier's Name				
16.0.2	Letter of Approval from Supplier is Attached	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
17.0	Will this project involve a new or increased drinking water withdrawal from a stream or other water body? If "Yes", should reference both Water Supply and Watershed Management.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
17.0.1	Stream Name				
18.0	Will the construction or operation of this project involve treatment, storage, reuse, or disposal of waste? If "Yes", indicate what type (i.e., hazardous, municipal (including infectious & chemotherapeutic), residual) and the amount to be treated, stored, re-used or disposed.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
18.0.1	Type & Amount				
19.0	Will your project involve the removal of coal, minerals, etc. as part of any earth disturbance activities?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
20.0	Does your project involve installation of a field constructed underground storage tank? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
20.0.1	Enter all substances & capacity of each; separate each set with semicolons.				
21.0	Does your project involve installation of an aboveground storage tank greater than 21,000 gallons capacity at an existing facility? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
21.0.1	Enter all substances & capacity of each; separate each set with semicolons.				

22.0 Does your project involve installation of a tank greater than 1,100 gallons which will contain a highly hazardous substance as defined in DEP's Regulated Substances List, 2570-BK-DEP2724? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit. Yes No

22.0.1 Enter all substances & capacity of each; separate each set with semicolons.

23.0 Does your project involve installation of a storage tank at a new facility with a total AST capacity greater than 21,000 gallons? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit. Yes No

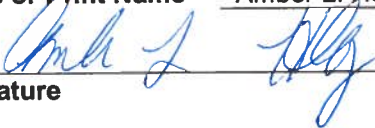
23.0.1 Enter all substances & capacity of each; separate each set with semicolons.

24.0 Will the intended activity involve the use of a radiation source? Yes No

CERTIFICATION

I certify that I have the authority to submit this application on behalf of the applicant named herein and that the information provided in this application is true and correct to the best of my knowledge and information.

Type or Print Name Amber L. Holly



Environmental Project Manager

12/10/18

Signature

Title

Date

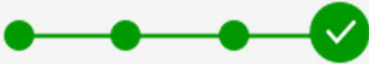
Subject:

FW: FedEx Shipment 773979874783 Delivered



Your package has been delivered


Tracking # 773979874783

Ship date: Mon, 12/17/2018		Delivery date: Tue, 12/18/2018 2:01 pm
Sarah Binckley AECOM CONSHOHOCKEN, PA 19428 US		Lori Seese Lower Nazareth Township 623 Municipal Drive Suite 220 NAZARETH, PA 18064 US

Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	773979874783
Status:	Delivered: 12/18/2018 2:01 PM Signed for By: Y.GYARMARTY
Reference:	60414094. 20000363.00035.08.
Signed for by:	Y.GYARMARTY
Delivery location:	NAZARETH, PA
Delivered to:	Receptionist/Front Desk
Service type:	FedEx Standard Overnight®
Packaging type:	FedEx® Envelope
Number of pieces:	1
Weight:	0.50 lb.
Special handling/Services:	Deliver Weekday
Standard transit:	12/18/2018 by 3:00 pm

 Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 1:06 PM CST on 12/18/2018.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

Standard transit is the date and time the package is scheduled to be delivered by, based on the selected service, destination and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

© 2018 Federal Express Corporation. The content of this message is protected by copyright and trademark laws under U.S. and international law. Review our [privacy policy](#). All rights reserved.

Thank you for your business.

December 17, 2018

Jason Hart
Moore Township
2491 Community Drive
Bath, PA 18014

**Subject: Updated Stormwater Management Analysis
PennEast Pipeline Project
Northampton County, Pennsylvania**

Dear Jason Hart,

On November 9, 2016, AECOM notified Moore Township that PennEast Pipeline Company, LLC had submitted Pennsylvania Chapter 105 Joint Permit Applications (JPAs) for authorization of wetland and watercourse crossings for the PennEast Pipeline Project (Project). PennEast will be submitting updated JPAs to the Pennsylvania Department of Environmental Protection (PADEP) in December 2018. In accordance with 25 Pennsylvania Code §105.13(e)(l)(v), PennEast is providing this stormwater management analysis for Project impacts within Moore Township.

Project Description

PennEast proposes to construct, install and operate the Project facilities to provide approximately 1.1 million dekatherms per day (MMDth/d) of year-round natural gas transportation services from the Marcellus Shale producing region in northern Pennsylvania to markets in New Jersey, eastern and southeastern Pennsylvania, and surrounding states. The Project will include a new pipeline and aboveground facilities that will provide a new source of low cost natural gas and enhance the region's supply diversity. The Project facilities include a 36-inch diameter, 115-mile mainline pipeline extending from Luzerne County, Pennsylvania, to Mercer County, New Jersey. The Project will extend from various receipt point interconnections in the eastern Marcellus Shale region to various delivery point interconnections in the heart of major northeastern natural gas-consuming markets.

Stormwater Management Analysis

Within Moore Township, PennEast proposes to construct approximately 6.9 miles of 36-inch diameter pipeline and Mainline Block Valve 6, which will be located within the Hokendauqua Creek and Monocacy Creek watersheds, for which Act 167 Stormwater Management Plan have been approved. A location map illustrating the location of the proposed PennEast Mainline Pipeline and Mainline Block Valve 6 is included as Attachment 1.

The pipeline facilities will be restored to pre-construction grade and revegetated following construction in accordance with PennEast's Erosion and Sediment Control Plan (E&SCP), Site Restoration Plan, and the Federal Energy Regulatory Commission's (FERC's) Upland Erosion Control, Revegetation, and Maintenance Plan. Existing drainage patterns will be maintained as feasible by utilizing the existing contours or restoring any disturbed area to the existing condition or meadow. Restoration measures will include the re-establishment of original grade and drainage patterns to the extent practicable. Erosion and sedimentation control best management practices will be maintained until final stabilization is achieved to minimize the likelihood of post-construction erosion. The rate and volume of stormwater runoff from the Project area in the post-construction condition is not expected to exceed that of the pre-construction condition. The E&SCP and Site



Restoration Plan will be reviewed by the PADEP and Northampton County Conservation District as part of the Erosion and Sediment Control General Permit (ESCGP) application process.

For the Mainline Block Valve 6, where new impervious surfaces are proposed, PennEast has prepared Post-Construction Stormwater Management (PCSM) Plans and designed the PCSM facilities consistent with the Lehigh Valley Planning Commission's Act 167 Stormwater Managements Plan that covers Northampton and Lehigh counties and the Lehigh River Watershed. The plan states that, "The basic goal is no increase in the peak rate of runoff at any point in the watershed... If, through the use of infiltration or other means, an applicant can demonstrate that neither the peak rate nor the volume of runoff is increasing with development, additional controls to meet the release rates are not required." The stormwater volume and peak runoff rate requirements will be achieved through the installation an infiltration trench and a swale. The revised PCSM plans and supporting calculations will be submitted to the PADEP and Northampton County Conservation District for review and approval as part of the ESCGP application process.

PennEast will continue to coordinate with the PADEP and the Northampton County Conservation District regarding stormwater management best management practices to prevent an increase in the rate of stormwater runoff and minimize any increase in stormwater runoff volume. If you have any comments regarding consistency with the approved stormwater management plans, please direct comments to the PADEP Northeast Regional Office, Waterways and Wetlands Program at 2 Public Square, Wilkes-Barre, Pennsylvania 18701-1915 or call 570-826-2511.

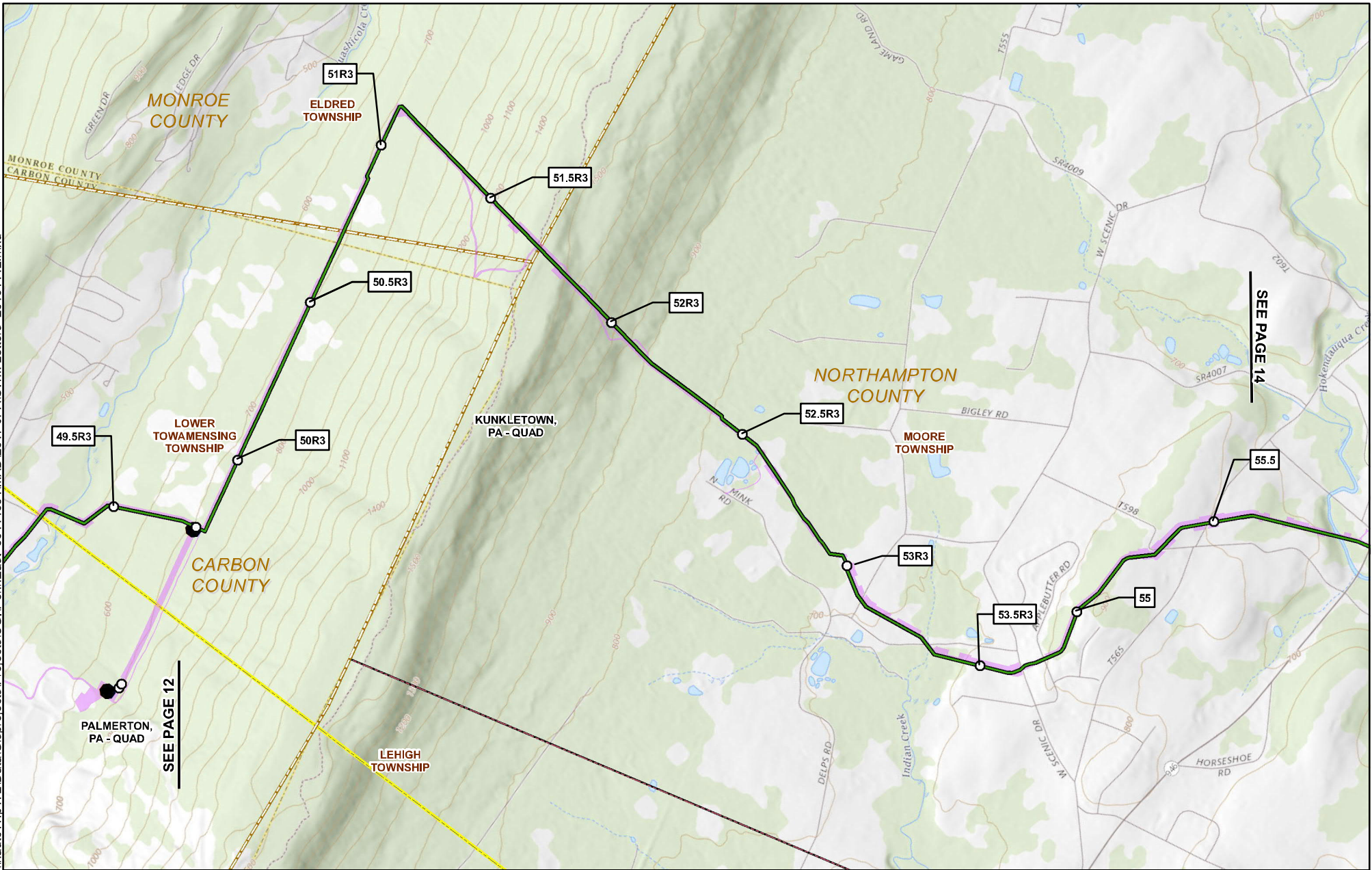
Yours sincerely,

A handwritten signature in cursive script that reads "Sarah K. Binckley".

Sarah K. Binckley
AECOM

cc: Casey Monagan, UGI Energy Services
Amber Holly, UGI Energy Services

ATTACHMENT 1
PROJECT LOCATION MAP



SEE PAGE 12

SEE PAGE 14

1	MILEPOST		PROPOSED CONSTRUCTION LIMIT
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)		USGS QUADRANGLE BOUNDARY
	PROPOSED PERMANENT ABOVE GROUND FACILITY		TOWNSHIP BOUNDARY
	PROPOSED HELLERTOWN LATERAL		COUNTY BOUNDARY
	PROPOSED PENNEAST PIPELINE CENTERLINE		STATE BOUNDARY

PENNEAST PIPELINE PROJECT USGS QUADRANGLE MAP

**CARBON, MONROE, & NORTHAMPTON COUNTIES,
PENNSYLVANIA**



ABSOLUTE SCALE:
1:24,000

REFERENCE SCALE:
1 IN = 2,000 FT



DRAWN BY: KFS

CHECKED BY:

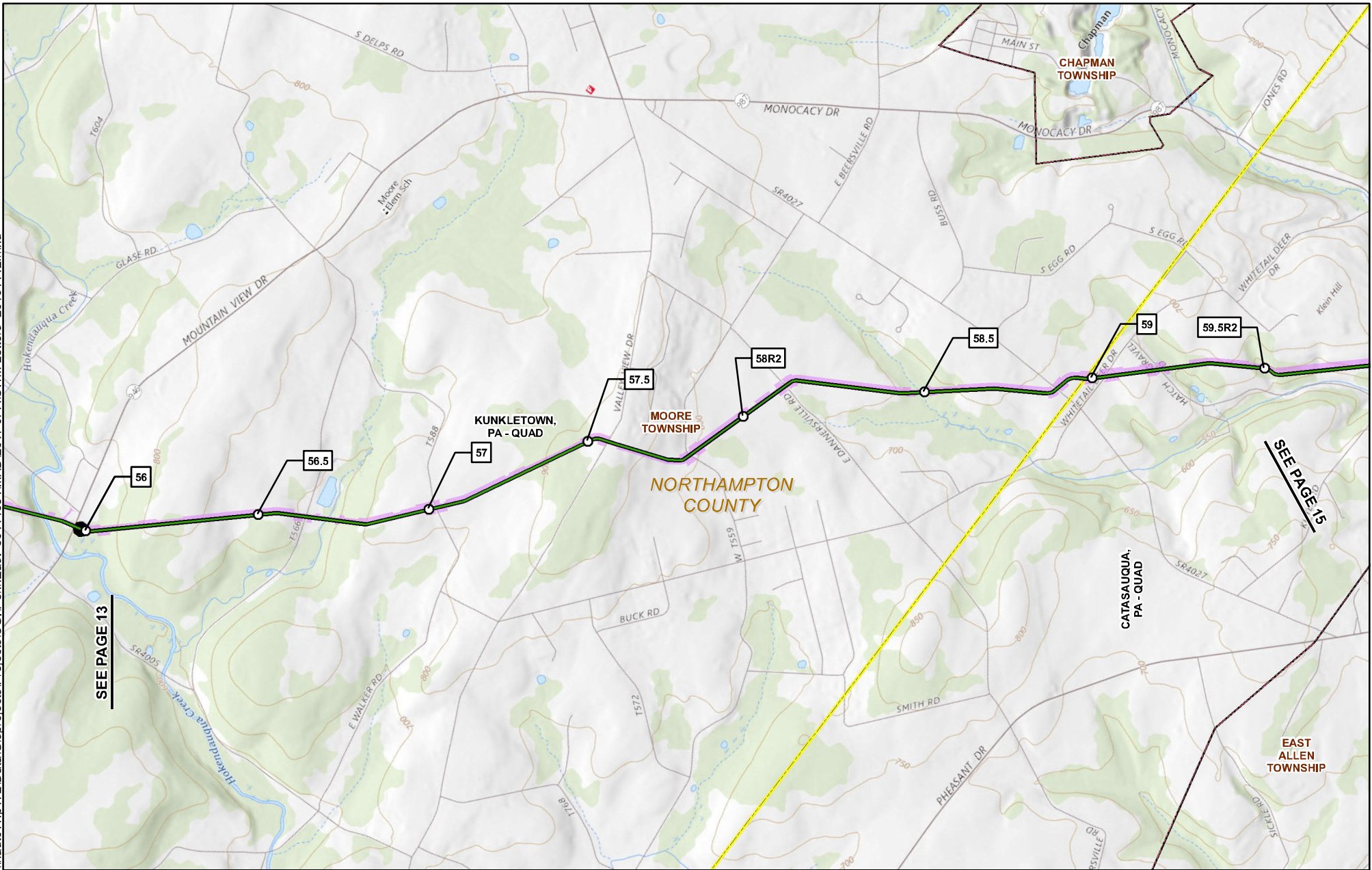
APPROVED BY:

REV. DATE: 11/19/2018

REVISION:

DESC: ISSUED FOR PERMITTING

PAGE: PAGE 13 OF 20



1	MILEPOST		PROPOSED CONSTRUCTION LIMIT
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)		USGS QUADRANGLE BOUNDARY
	PROPOSED PERMANENT ABOVE GROUND FACILITY		TOWNSHIP BOUNDARY
	PROPOSED HELLERTOWN LATERAL		COUNTY BOUNDARY
	PROPOSED PENNEAST PIPELINE CENTERLINE		STATE BOUNDARY

PENNEAST PIPELINE PROJECT USGS QUADRANGLE MAP

**NORTHAMPTON COUNTY,
PENNSYLVANIA**



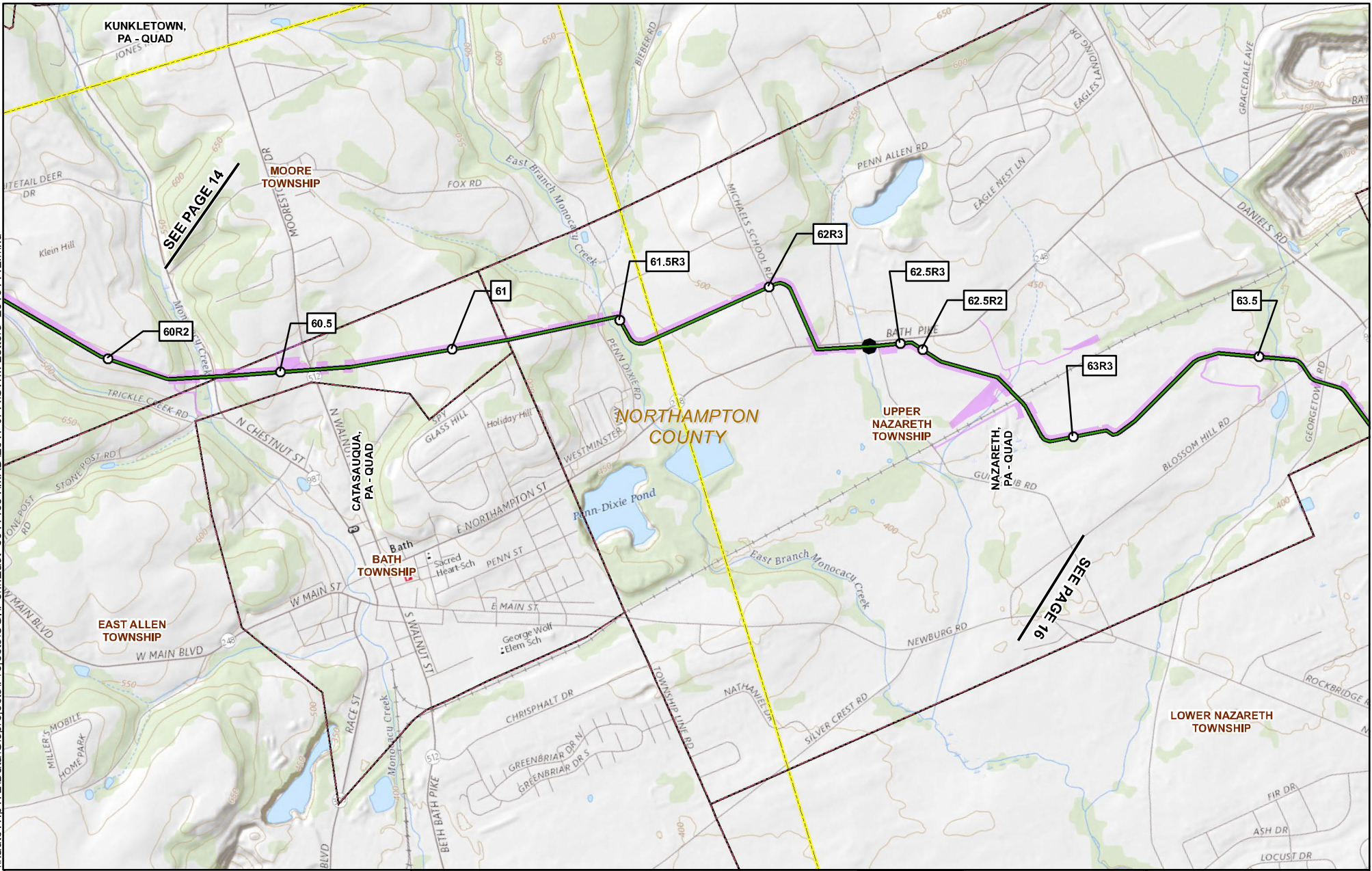
ABSOLUTE SCALE:
1:24,000

REFERENCE SCALE:
1 IN = 2,000 FT



DRAWN BY: KFS
CHECKED BY:
APPROVED BY:
REV. DATE: 11/19/2018
REVISION:
DESC: ISSUED FOR PERMITTING
PAGE: PAGE 14 OF 20

\\nadc1vfp172\Data\GIS\projects\Projects\UGI\PennEast_60414094\MXD\2017_JPA\SWM Letters 20181112.mxd



1	MILEPOST		PROPOSED CONSTRUCTION LIMIT
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)		USGS QUADRANGLE BOUNDARY
	PROPOSED PERMANENT ABOVE GROUND FACILITY		TOWNSHIP BOUNDARY
	PROPOSED HELLERTOWN LATERAL		COUNTY BOUNDARY
	PROPOSED PENNEAST PIPELINE CENTERLINE		STATE BOUNDARY

PENNEAST PIPELINE PROJECT
USGS QUADRANGLE MAP

NORTHAMPTON COUNTY, PENNSYLVANIA

ABSOLUTE SCALE: 1:24,000
REFERENCE SCALE: 1 IN = 2,000 FT

DRAWN BY: KFS
CHECKED BY:
APPROVED BY:
REV. DATE: 11/19/2018
REVISION:
DESC: ISSUED FOR PERMITTING
PAGE: PAGE 15 OF 20

Form



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

GENERAL INFORMATION FORM – AUTHORIZATION APPLICATION

Before completing this General Information Form (GIF), read the step-by-step instructions provided in this application package. This version of the General Information Form (GIF) must be completed and returned with any program-specific application being submitted to the Department.

<p style="text-align: center;">Related ID#s (If Known)</p> <p>Client ID# _____ APS ID# _____</p> <p>Site ID# _____ Auth ID# _____</p> <p>Facility ID# _____</p>	<p>DEP USE ONLY</p> <p>Date Received & General Notes</p>
--	---

CLIENT INFORMATION

DEP Client ID#	Client Type / Code LLC				
Organization Name or Registered Fictitious Name PennEast Pipeline Company LLC		Employer ID# (EIN) 47-1573364	Dun & Bradstreet ID#		
Individual Last Name	First Name	MI	Suffix	SSN	
Additional Individual Last Name	First Name	MI	Suffix	SSN	
Mailing Address Line 1 1 Meridian Boulevard		Mailing Address Line 2 Suite 2C01			
Address Last Line – City Wyomissing		State PA	ZIP+4 19610	Country USA	
Client Contact Last Name Holly	First Name Amber	MI	Suffix		
Client Contact Title Environmental Project Manager		Phone 610-373-7999	Ext 1172		
Email Address aholly@ugies.com		FAX			

SITE INFORMATION

DEP Site ID#	Site Name PennEast Pipeline Project				
EPA ID#	Estimated Number of Employees to be Present at Site				
Description of Site Proposed natural gas pipeline right-of-way and the associated temporary workspace, compressor station, appurtenant facilities, access roads, staging areas, and wareyards necessary to construct the Project. Additional site description information is provided in JPA Section J - Project Narrative.					
County Name	Municipality	City	Boro	Twp	State
Luzerne, Carbon, Monroe, Northampton, and Bucks	(Luzerne:) Bear Creek Twp, Dallas Twp, Jenkins Twp, Kingston Twp, Plains Twp, West Wyoming Borough, Wyoming Borough, (Carbon:) Kidder Twp, Lower Towamensing Twp, Penn Forest Twp, Towamensing Twp, (Monroe:) Eldred Twp, (Northampton:) Bethlehem Twp, East Allen Twp, Easton City, Lower Nazareth Twp, Lower Saucon Twp, Moore Twp, Upper Nazareth Twp, Williams Twp, (Bucks:) Durham Twp, Riegelsville Borough	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	PA
County Name	Municipality	City	Boro	Twp	State
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Site Location Line 1 The PA portion of the PennEast Mainline Pipeline begins in Dallas Twp, Luzerne County and extends to Durham		Site Location Line 2 The Hellertown Lateral is located in Lower Saucon Twp, Northampton County. Additional site location information			

Twp, Bucks County. Additional site location information is provided in JPA Section J - Project Narrative.

Site Location Last Line – City State ZIP+4

Detailed Written Directions to Site

From Wilkes-Barre: head north on PA-309. At the intersection with State Route 415, bear right to continue on State Route 309/Tunkhannock Highway. After 1 mile, turn right on Upper Demunds Road. Immediately turn right on Hildebrandt Road. After 0.7 mile, turn right onto an unnamed road and follow 0.25 mile to the Wyoming Interconnect and the start of the PennEast Mainline. The entry and exit location for each county crossed by the Project is provided in JPA Section J - Project Narrative.

Site Contact Last Name Holly		First Name Amber	MI	Suffix
Site Contact Title Environmental Project Manager		Site Contact Firm UGI Energy Services, LLC		
Mailing Address Line 1 1 Meridian Boulevard		Mailing Address Line 2 Suite 2C01		
Mailing Address Last Line – City Wyomissing		State PA	ZIP+4 19610	
Phone 610-373-7999	Ext 1172	FAX	Email Address aholly@ugies.com	
NAICS Codes (Two- & Three-Digit Codes – List All That Apply) 22, 23, 48			6-Digit Code (Optional) 221210, 237120, 486210	
Client to Site Relationship OWNOP				

FACILITY INFORMATION

Modification of Existing Facility		Yes	No
1.	Will this project modify an existing facility, system, or activity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.	Will this project involve an addition to an existing facility, system, or activity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If "Yes", check all relevant facility types and provide DEP facility identification numbers below.

Facility Type	DEP Fac ID#	Facility Type	DEP Fac ID#
<input type="checkbox"/> Air Emission Plant	_____	<input type="checkbox"/> Industrial Minerals Mining Operation	_____
<input type="checkbox"/> Beneficial Use (water)	_____	<input type="checkbox"/> Laboratory Location	_____
<input type="checkbox"/> Blasting Operation	_____	<input type="checkbox"/> Land Recycling Cleanup Location	_____
<input type="checkbox"/> Captive Hazardous Waste Operation	_____	<input type="checkbox"/> Mine DrainageTrmt/LandRecyProjLocation	_____
<input type="checkbox"/> Coal Ash Beneficial Use Operation	_____	<input type="checkbox"/> Municipal Waste Operation	_____
<input type="checkbox"/> Coal Mining Operation	_____	<input type="checkbox"/> Oil & Gas Encroachment Location	_____
<input type="checkbox"/> Coal Pillar Location	_____	<input type="checkbox"/> Oil & Gas Location	_____
<input type="checkbox"/> Commercial Hazardous Waste Operation	_____	<input type="checkbox"/> Oil & Gas Water Poll Control Facility	_____
<input type="checkbox"/> Dam Location	_____	<input type="checkbox"/> Oil & Gas Wastewater Storage Impoundment	_____
<input type="checkbox"/> Deep Mine Safety Operation -Anthracite	_____	<input type="checkbox"/> Public Water Supply System	_____
<input type="checkbox"/> Deep Mine Safety Operation -Bituminous	_____	<input type="checkbox"/> Radiation Facility	_____
<input type="checkbox"/> Deep Mine Safety Operation -Ind Minerals	_____	<input type="checkbox"/> Residual Waste Operation	_____
<input type="checkbox"/> Encroachment Location (water, wetland)	_____	<input type="checkbox"/> Storage Tank Location	_____
<input type="checkbox"/> Erosion & Sediment Control Facility	_____	<input type="checkbox"/> Water Pollution Control Facility	_____
<input type="checkbox"/> Explosive Storage Location	_____	<input type="checkbox"/> Water Resource	_____
		<input type="checkbox"/> Other:	_____

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
Station 0+00	41	20	48	75	56	43
Horizontal Accuracy Measure	Feet			--or-- Meters		
Horizontal Reference Datum Code	<input type="checkbox"/> North American Datum of 1927 <input type="checkbox"/> North American Datum of 1983 <input checked="" type="checkbox"/> World Geodetic System of 1984					
Horizontal Collection Method Code	GISDR					
Reference Point Code	CENTER					
Altitude	Feet 1280			--or-- Meters		
Altitude Datum Name	<input type="checkbox"/> The National Geodetic Vertical Datum of 1929 <input checked="" type="checkbox"/> The North American Vertical Datum of 1988 (NAVD88)					

Altitude (Vertical) Location Datum Collection Method Code	TOPO	
Geometric Type Code	POINT	
Data Collection Date	12/08/2018	
Source Map Scale Number	1	Inch(es) = 2000 Feet
	--or--	Centimeter(s) = Meters

PROJECT INFORMATION

Project Name
PennEast Pipeline Project

Project Description
See Project Description in JPA Section J

Project Consultant Last Name	First Name	MI	Suffix
Binckley	Sarah	K	

Project Consultant Title **Consulting Firm**
Project Manager AECOM

Mailing Address Line 1	Mailing Address Line 2
625 West Ridge Pike	Suite E-100
Address Last Line – City	State ZIP+4
Conshohocken	PA 19428

Phone	Ext	FAX	Email Address
610-832-2713		610-832-3501	sarah.binckley@aecom.com

Time Schedules	Project Milestone (Optional)
09/2015	PennEast submitted FERC Application for Certificate of Public Convenience and Necessity
02/2016 - 03/2016	PennEast submitted PADEP Joint Permit Applications and ESCGP-2 applications
01/2018	Received FERC Certificate of Public Convenience and Necessity
12/2018	PennEast submits revised Joint Permit Applications and ESCGP-3 applications

- Have you informed the surrounding community and addressed any concerns prior to submitting the application to the Department? Yes No
- Is your project funded by state or federal grants? Yes No
Note: If "Yes", specify what aspect of the project is related to the grant and provide the grant source, contact person and grant expiration date.
 Aspect of Project Related to Grant _____
 Grant Source: _____
 Grant Contact Person: _____
 Grant Expiration Date: _____
- Is this application for an authorization on Appendix A of the Land Use Policy? (For referenced list, see Appendix A of the Land Use Policy attached to GIF instructions) Yes No
Note: If "No" to Question 3, the application is not subject to the Land Use Policy.
 If "Yes" to Question 3, the application is subject to this policy and the Applicant should answer the additional questions in the Land Use Information section.

LAND USE INFORMATION

Note: Applicants are encouraged to submit copies of local land use approvals or other evidence of compliance with local comprehensive plans and zoning ordinances.

- Is there an adopted county or multi-county comprehensive plan? Yes No
- Is there an adopted municipal or multi-municipal comprehensive plan? Yes No
- Is there an adopted county-wide zoning ordinance, municipal zoning ordinance or joint municipal zoning ordinance? Yes No
Note: If the Applicant answers "No" to either Questions 1, 2 or 3, the provisions of the PA MPC are not applicable and the Applicant does not need to respond to questions 4 and 5 below.
 If the Applicant answers "Yes" to questions 1, 2 and 3, the Applicant should respond to questions 4 and 5 below.
- Does the proposed project meet the provisions of the zoning ordinance or does the proposed project have zoning approval? If zoning approval has been received, attach documentation. Yes No
- Have you attached Municipal and County Land Use Letters for the project? Yes No

COORDINATION INFORMATION

Note: The PA Historical and Museum Commission must be notified of proposed projects in accordance with DEP Technical Guidance Document 012-0700-001 and the accompanying Cultural Resource Notice Form.

If the activity will be a mining project (i.e., mining of coal or industrial minerals, coal refuse disposal and/or the operation of a coal or industrial minerals preparation/processing facility), respond to questions 1.0 through 2.5 below.

If the activity will not be a mining project, skip questions 1.0 through 2.5 and begin with question 3.0.

1.0	Is this a coal mining project? If "Yes", respond to 1.1-1.6. If "No", skip to Question 2.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
1.1	Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be equal to or greater than 200 tons/day?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.2	Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be greater than 50,000 tons/year?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.3	Will this coal mining project involve coal preparation/ processing activities in which thermal coal dryers or pneumatic coal cleaners will be used?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.4	For this coal mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.5	Will this coal mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.6	Will this coal mining project involve underground coal mining to be conducted within 500 feet of an oil or gas well?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.0	Is this a non-coal (industrial minerals) mining project? If "Yes", respond to 2.1-2.6. If "No", skip to Question 3.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
2.1	Will this non-coal (industrial minerals) mining project involve the crushing and screening of non-coal minerals other than sand and gravel?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.2	Will this non-coal (industrial minerals) mining project involve the crushing and/or screening of sand and gravel with the exception of wet sand and gravel operations (screening only) and dry sand and gravel operations with a capacity of less than 150 tons/hour of unconsolidated materials?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.3	Will this non-coal (industrial minerals) mining project involve the construction, operation and/or modification of a portable non-metallic (i.e., non-coal) minerals processing plant under the authority of the General Permit for Portable Non-metallic Mineral Processing Plants (i.e., BAQ-PGPA/GP-3)?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.4	For this non-coal (industrial minerals) mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.5	Will this non-coal (industrial minerals) mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No

3.0	Will your project, activity, or authorization have anything to do with a well related to oil or gas production, have construction within 200 feet of, affect an oil or gas well, involve the waste from such a well, or string power lines above an oil or gas well? If "Yes", respond to 3.1-3.3. If "No", skip to Question 4.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
3.1	Does the oil- or gas-related project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water (including wetlands)?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
3.2	Will the oil- or gas-related project involve discharge of industrial wastewater or stormwater to a dry swale, surface water, ground water or an existing sanitary sewer system or storm water system? If "Yes", discuss in <i>Project Description</i> .	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
3.3	Will the oil- or gas-related project involve the construction and operation of industrial waste treatment facilities?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
4.0	Will the project involve a construction activity that results in earth disturbance? If "Yes", specify the total disturbed acreage. 4.0.1 Total Disturbed Acreage 1289.4	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.0	Does the project involve any of the following? If "Yes", respond to 5.1-5.3. If "No", skip to Question 6.0.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.1	Water Obstruction and Encroachment Projects – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.2	Wetland Impacts – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a wetland?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.3	Floodplain Projects by the commonwealth, a Political Subdivision of the commonwealth or a Public Utility – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a floodplain?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
6.0	Will the project involve discharge of stormwater or wastewater from an industrial activity to a dry swale, surface water, ground water or an existing sanitary sewer system or separate storm water system?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
7.0	Will the project involve the construction and operation of industrial waste treatment facilities?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
8.0	Will the project involve construction of sewage treatment facilities, sanitary sewers, or sewage pumping stations? If "Yes", indicate estimated proposed flow (gal/day). Also, discuss the sanitary sewer pipe sizes and the number of pumping stations/treatment facilities/name of downstream sewage facilities in the <i>Project Description</i> , where applicable. 8.0.1 Estimated Proposed Flow (gal/day)	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
9.0	Will the project involve the subdivision of land, or the generation of 800 gpd or more of sewage on an existing parcel of land or the generation of an additional 400 gpd of sewage on an already-developed parcel, or the generation of 800 gpd or more of industrial wastewater that would be discharged to an existing sanitary sewer system? 9.0.1 Was Act 537 sewage facilities planning submitted and approved by DEP? If "Yes" attach the approval letter. Approval required prior to 105/NPDES approval.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
10.0	Is this project for the beneficial use of biosolids for land application within Pennsylvania? If "Yes" indicate how much (i.e. gallons or dry tons per year). 10.0.1 Gallons Per Year (residential septage) _____ 10.0.2 Dry Tons Per Year (biosolids) _____	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
11.0	Does the project involve construction, modification or removal of a dam? If "Yes", identify the dam. 11.0.1 Dam Name	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No

12.0	Will the project interfere with the flow from, or otherwise impact, a dam? If "Yes", identify the dam.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
12.0.1	Dam Name				
13.0	Will the project involve operations (excluding during the construction period) that produce air emissions (i.e., NOX, VOC, etc.)? If "Yes", identify each type of emission followed by the amount of that emission.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
13.0.1	Enter all types & amounts of emissions; separate each set with semicolons.	The Project operational total Potential to Emit (PTE) in tons per year includes: NOx – 141; CO – 141; SO2 – 5.8; PM10 – 28; PM2.5 – 28; VOC – 13; GHG – 260,800; CH2O – 3.9; Total HAPs – 5.1			
14.0	Does the project include the construction or modification of a drinking water supply to serve 15 or more connections or 25 or more people, at least 60 days out of the year? If "Yes", check all proposed sub-facilities.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
14.0.1	Number of Persons Served				
14.0.2	Number of Employee/Guests				
14.0.3	Number of Connections				
14.0.4	Sub-Fac: Distribution System	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.5	Sub-Fac: Water Treatment Plant	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.6	Sub-Fac: Source	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.7	Sub-Fac: Pump Station	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.8	Sub Fac: Transmission Main	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.9	Sub-Fac: Storage Facility	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
15.0	Will your project include infiltration of storm water or waste water to ground water within one-half mile of a public water supply well, spring or infiltration gallery?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
16.0	Is your project to be served by an existing public water supply? If "Yes", indicate name of supplier and attach letter from supplier stating that it will serve the project.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
16.0.1	Supplier's Name				
16.0.2	Letter of Approval from Supplier is Attached	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
17.0	Will this project involve a new or increased drinking water withdrawal from a stream or other water body? If "Yes", should reference both Water Supply and Watershed Management.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
17.0.1	Stream Name				
18.0	Will the construction or operation of this project involve treatment, storage, reuse, or disposal of waste? If "Yes", indicate what type (i.e., hazardous, municipal (including infectious & chemotherapeutic), residual) and the amount to be treated, stored, re-used or disposed.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
18.0.1	Type & Amount				
19.0	Will your project involve the removal of coal, minerals, etc. as part of any earth disturbance activities?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
20.0	Does your project involve installation of a field constructed underground storage tank? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
20.0.1	Enter all substances & capacity of each; separate each set with semicolons.				
21.0	Does your project involve installation of an aboveground storage tank greater than 21,000 gallons capacity at an existing facility? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
21.0.1	Enter all substances & capacity of each; separate each set with semicolons.				

22.0 Does your project involve installation of a tank greater than 1,100 gallons which will contain a highly hazardous substance as defined in DEP's Regulated Substances List, 2570-BK-DEP2724? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit. Yes No

22.0.1 Enter all substances & capacity of each; separate each set with semicolons.

23.0 Does your project involve installation of a storage tank at a new facility with a total AST capacity greater than 21,000 gallons? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit. Yes No

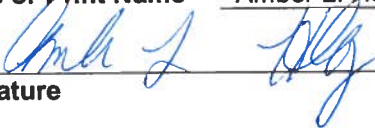
23.0.1 Enter all substances & capacity of each; separate each set with semicolons.

24.0 Will the intended activity involve the use of a radiation source? Yes No

CERTIFICATION

I certify that I have the authority to submit this application on behalf of the applicant named herein and that the information provided in this application is true and correct to the best of my knowledge and information.

Type or Print Name Amber L. Holly



Environmental Project Manager

12/10/18

Signature

Title

Date


Subject:

FW: FedEx Shipment 773980366579 Delivered



Your package has been delivered


Tracking # 773980366579

Ship date: Mon, 12/17/2018		Delivery date: Tue, 12/18/2018 12:09 pm
Sarah Binckley AECOM CONSHOHOCKEN, PA 19428 US	 Delivered	Jason Harhart Moore Township 2491 Community Drive BATH, PA 18014 US

Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	773980366579
Status:	Delivered: 12/18/2018 12:09 PM Signed for By: P.WERKEISER
Reference:	60414094. 20000363.00035.08.
Signed for by:	P.WERKEISER
Delivery location:	BATH, PA
Delivered to:	Receptionist/Front Desk
Service type:	FedEx Standard Overnight®
Packaging type:	FedEx® Envelope
Number of pieces:	1
Weight:	0.50 lb.
Special handling/Services:	Deliver Weekday
Standard transit:	12/18/2018 by 3:00 pm

 Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 11:11 AM CST on 12/18/2018.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

Standard transit is the date and time the package is scheduled to be delivered by, based on the selected service, destination and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

© 2018 Federal Express Corporation. The content of this message is protected by copyright and trademark laws under U.S. and international law. Review our [privacy policy](#). All rights reserved.

Thank you for your business.



625 West Ridge Pike
Suite E-100
Conshohocken, PA 19428
www.aecom.com

610 832 3500 tel
610 832 3501 fax

December 17, 2018

Upper Nazareth Township Supervisors
Mr. John Soloe
100 Newport Ave
Nazareth, PA 18064

**Subject: Updated Stormwater Management Analysis
PennEast Pipeline Project
Northampton County, Pennsylvania**

Dear John Soloe,

On November 9, 2016, AECOM notified Upper Nazareth Township that PennEast Pipeline Company, LLC had submitted Pennsylvania Chapter 105 Joint Permit Applications (JPAs) for authorization of wetland and watercourse crossings for the PennEast Pipeline Project (Project). PennEast will be submitting updated JPAs to the Pennsylvania Department of Environmental Protection (PADEP) in December 2018. In accordance with 25 Pennsylvania Code §105.13(e)(I)(v), PennEast is providing this stormwater management analysis for Project impacts within Upper Nazareth Township.

Project Description

PennEast proposes to construct, install and operate the Project facilities to provide approximately 1.1 million dekatherms per day (MMDth/d) of year-round natural gas transportation services from the Marcellus Shale producing region in northern Pennsylvania to markets in New Jersey, eastern and southeastern Pennsylvania, and surrounding states. The Project will include a new pipeline and aboveground facilities that will provide a new source of low cost natural gas and enhance the region's supply diversity. The Project facilities include a 36-inch diameter, 115-mile mainline pipeline extending from Luzerne County, Pennsylvania, to Mercer County, New Jersey. The Project will extend from various receipt point interconnections in the eastern Marcellus Shale region to various delivery point interconnections in the heart of major northeastern natural gas-consuming markets.

Stormwater Management Analysis

Within Upper Nazareth Township, PennEast proposes to construct approximately 2.8 miles of 36-inch diameter pipeline and Mainline Block Valve 7, which will be located within the Monocacy Creek watershed, for which an Act 167 Stormwater Management Plan has been approved. A location map illustrating the location of the proposed PennEast Mainline Pipeline and Mainline Block Valve 7 is included as Attachment 1.

The pipeline facilities will be restored to pre-construction grade and revegetated following construction in accordance with PennEast's Erosion and Sediment Control Plan (E&SCP), Site Restoration Plan, and the Federal Energy Regulatory Commission's (FERC's) Upland Erosion Control, Revegetation, and Maintenance Plan. Existing drainage patterns will be maintained as feasible by utilizing the existing contours or restoring any disturbed area to the existing condition or meadow. Restoration measures will include the re-establishment of original grade and drainage patterns to the extent practicable. Erosion and sedimentation control best management practices will be maintained until final stabilization is achieved to minimize the likelihood of post-construction erosion. The rate and volume of stormwater runoff from the Project area in the post-construction condition is not expected to exceed that of the pre-construction condition. The E&SCP and Site



Restoration Plan will be reviewed by the PADEP and Northampton County Conservation District as part of the Erosion and Sediment Control General Permit (ESCGP) application process.

For the Mainline Block Valve 7, where new impervious surfaces are proposed, PennEast has prepared Post-Construction Stormwater Management (PCSM) Plans and designed the PCSM facilities consistent with the Lehigh Valley Planning Commission's Act 167 Stormwater Managements Plan that covers Northampton and Lehigh counties and the Monocacy Creek watershed. The plan states that, "The basic goal is no increase in the peak rate of runoff at any point in the watershed... If, through the use of infiltration or other means, an applicant can demonstrate that neither the peak rate nor the volume of runoff is increasing with development, additional controls to meet the release rates are not required." The stormwater volume and peak runoff rate requirements will be achieved through the installation of an infiltration trench and swale. The revised PCSM plans and supporting calculations will be submitted to the PADEP and Northampton County Conservation District for review and approval as part of the ESCGP application process.

PennEast will continue to coordinate with the PADEP and the Northampton County Conservation District regarding stormwater management best management practices to prevent an increase in the rate of stormwater runoff and minimize any increase in stormwater runoff volume. If you have any comments regarding consistency with the approved stormwater management plans, please direct comments to the PADEP Northeast Regional Office, Waterways and Wetlands Program at 2 Public Square, Wilkes-Barre, Pennsylvania 18701-1915 or call 570-826-2511.

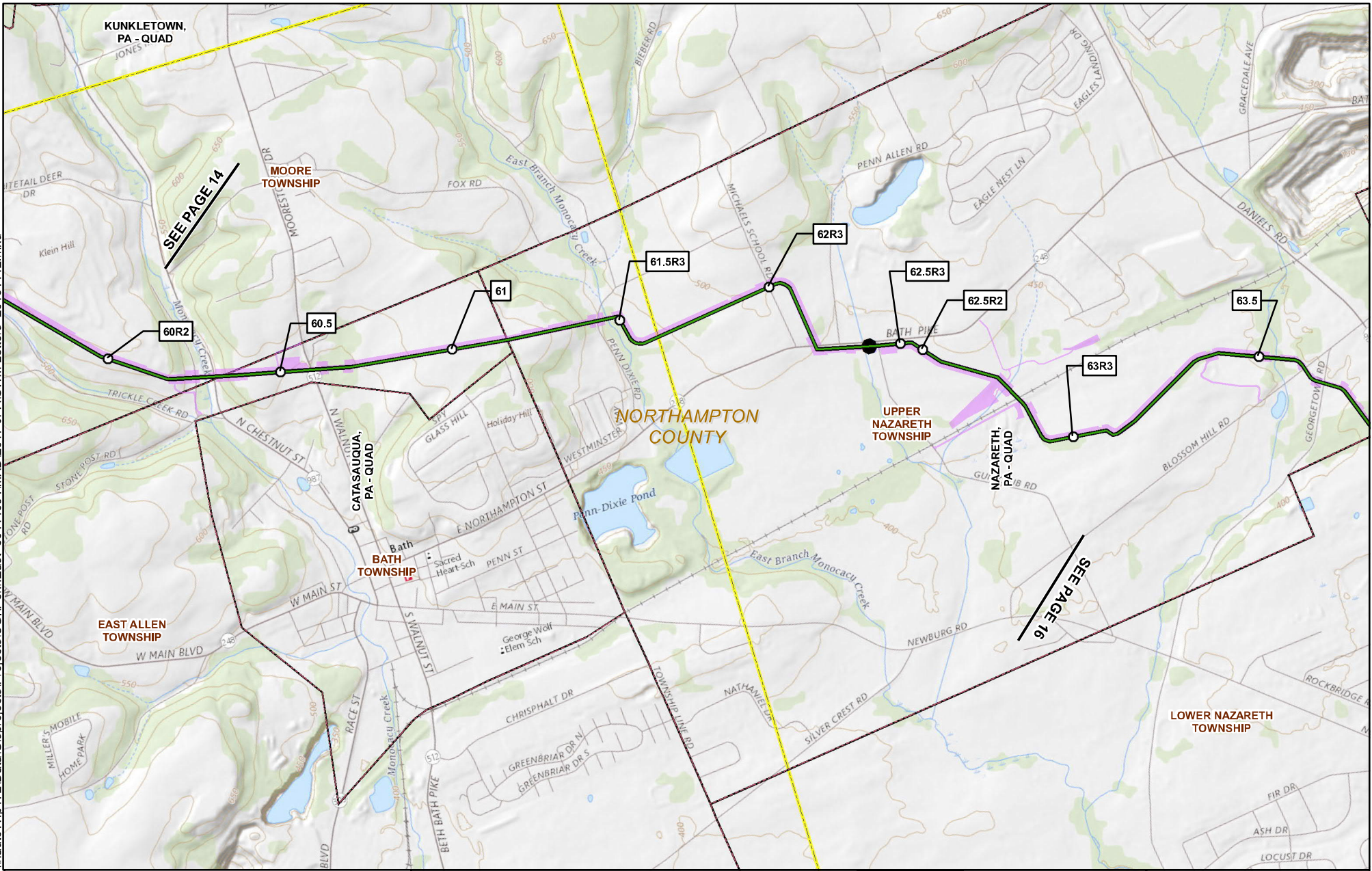
Yours sincerely,

A handwritten signature in black ink that reads "Sarah K. Binckley". The signature is written in a cursive, flowing style.

Sarah K. Binckley
AECOM

cc: Casey Monagan, UGI Energy Services
Amber Holly, UGI Energy Services

ATTACHMENT 1
PROJECT LOCATION MAP



1	MILEPOST		PROPOSED CONSTRUCTION LIMIT
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)		USGS QUADRANGLE BOUNDARY
	PROPOSED PERMANENT ABOVE GROUND FACILITY		TOWNSHIP BOUNDARY
	PROPOSED HELLERTOWN LATERAL		COUNTY BOUNDARY
	PROPOSED PENNEAST PIPELINE CENTERLINE		STATE BOUNDARY

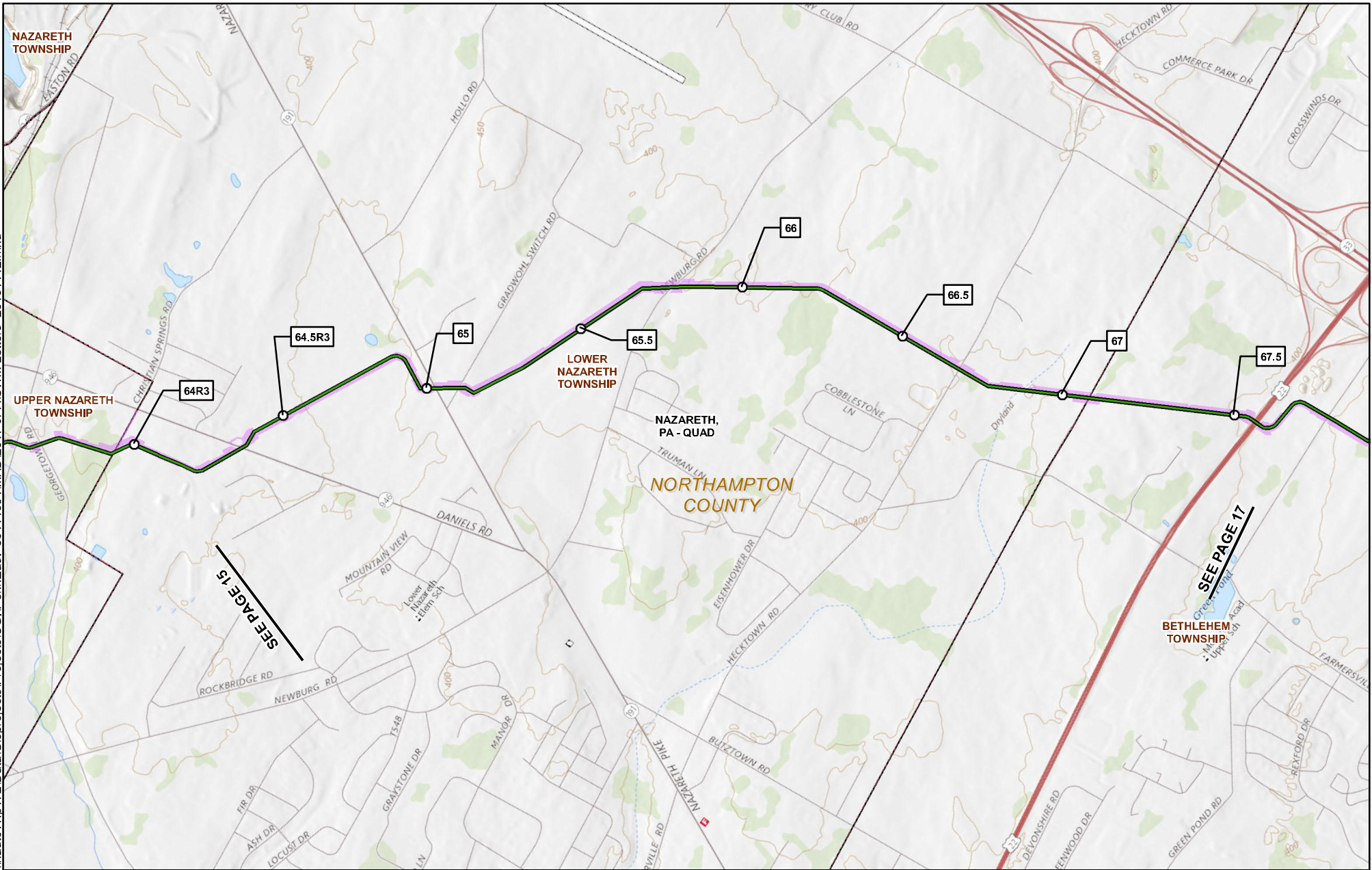
PENNEAST PIPELINE PROJECT
USGS QUADRANGLE MAP

NORTHAMPTON COUNTY, PENNSYLVANIA

ABSOLUTE SCALE: 1:24,000
REFERENCE SCALE: 1 IN = 2,000 FT

DRAWN BY: KFS
CHECKED BY:
APPROVED BY:
REV. DATE: 11/19/2018
REVISION:
DESC: ISSUED FOR PERMITTING
PAGE: PAGE 15 OF 20

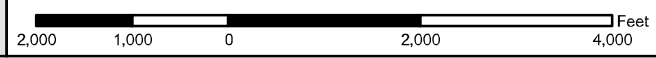
I:\nadc\1\vp\172\GIS\projects\Projects\UG\PennEast_60414094\MXD\2017_JPA\SWM Letters 2018\112.mxd



1	MILEPOST	PROPOSED CONSTRUCTION LIMIT
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)	USGS QUADRANGLE BOUNDARY
●	PROPOSED PERMANENT ABOVE GROUND FACILITY	TOWNSHIP BOUNDARY
—	PROPOSED HELLERTOWN LATERAL	COUNTY BOUNDARY
—	PROPOSED PENNEAST PIPELINE CENTERLINE	STATE BOUNDARY

PENNEAST PIPELINE PROJECT USGS QUADRANGLE MAP

**NORTHAMPTON COUNTY,
PENNSYLVANIA**



ABSOLUTE SCALE:
1:24,000

REFERENCE SCALE:
1 IN = 2,000 FT



DRAWN BY: KFS
CHECKED BY:
APPROVED BY:
REV. DATE: 11/19/2018
REVISION:
DESC: ISSUED FOR PERMITTING
PAGE: PAGE 16 OF 20

Form



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

GENERAL INFORMATION FORM – AUTHORIZATION APPLICATION

Before completing this General Information Form (GIF), read the step-by-step instructions provided in this application package. This version of the General Information Form (GIF) must be completed and returned with any program-specific application being submitted to the Department.

<p style="text-align: center;">Related ID#s (If Known)</p> <p>Client ID# _____ APS ID# _____</p> <p>Site ID# _____ Auth ID# _____</p> <p>Facility ID# _____</p>	<p>DEP USE ONLY</p> <p>Date Received & General Notes</p>
--	---

CLIENT INFORMATION

DEP Client ID#	Client Type / Code LLC		
Organization Name or Registered Fictitious Name PennEast Pipeline Company LLC		Employer ID# (EIN) 47-1573364	Dun & Bradstreet ID#
Individual Last Name	First Name	MI	Suffix SSN
Additional Individual Last Name	First Name	MI	Suffix SSN
Mailing Address Line 1 1 Meridian Boulevard		Mailing Address Line 2 Suite 2C01	
Address Last Line – City Wyomissing		State PA	ZIP+4 19610
		Country USA	
Client Contact Last Name Holly	First Name Amber	MI	Suffix
Client Contact Title Environmental Project Manager		Phone 610-373-7999	Ext 1172
Email Address aholly@ugies.com		FAX	

SITE INFORMATION

DEP Site ID#	Site Name PennEast Pipeline Project				
EPA ID#	Estimated Number of Employees to be Present at Site				
Description of Site Proposed natural gas pipeline right-of-way and the associated temporary workspace, compressor station, appurtenant facilities, access roads, staging areas, and wareyards necessary to construct the Project. Additional site description information is provided in JPA Section J - Project Narrative.					
County Name	Municipality	City	Boro	Twp	State
Luzerne, Carbon, Monroe, Northampton, and Bucks	(Luzerne:) Bear Creek Twp, Dallas Twp, Jenkins Twp, Kingston Twp, Plains Twp, West Wyoming Borough, Wyoming Borough, (Carbon:) Kidder Twp, Lower Towamensing Twp, Penn Forest Twp, Towamensing Twp, (Monroe:) Eldred Twp, (Northampton:) Bethlehem Twp, East Allen Twp, Easton City, Lower Nazareth Twp, Lower Saucon Twp, Moore Twp, Upper Nazareth Twp, Williams Twp, (Bucks:) Durham Twp, Riegelsville Borough	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	PA
County Name	Municipality	City	Boro	Twp	State
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Site Location Line 1 The PA portion of the PennEast Mainline Pipeline begins in Dallas Twp, Luzerne County and extends to Durham		Site Location Line 2 The Hellertown Lateral is located in Lower Saucon Twp, Northampton County. Additional site location information			

Twp, Bucks County. Additional site location information is provided in JPA Section J - Project Narrative.

Site Location Last Line – City State ZIP+4

Detailed Written Directions to Site

From Wilkes-Barre: head north on PA-309. At the intersection with State Route 415, bear right to continue on State Route 309/Tunkhannock Highway. After 1 mile, turn right on Upper Demunds Road. Immediately turn right on Hildebrandt Road. After 0.7 mile, turn right onto an unnamed road and follow 0.25 mile to the Wyoming Interconnect and the start of the PennEast Mainline. The entry and exit location for each county crossed by the Project is provided in JPA Section J - Project Narrative.

Site Contact Last Name Holly		First Name Amber	MI	Suffix
Site Contact Title Environmental Project Manager		Site Contact Firm UGI Energy Services, LLC		
Mailing Address Line 1 1 Meridian Boulevard		Mailing Address Line 2 Suite 2C01		
Mailing Address Last Line – City Wyomissing		State PA	ZIP+4 19610	
Phone 610-373-7999	Ext 1172	FAX	Email Address aholly@ugies.com	
NAICS Codes (Two- & Three-Digit Codes – List All That Apply) 22, 23, 48			6-Digit Code (Optional) 221210, 237120, 486210	
Client to Site Relationship OWNOP				

FACILITY INFORMATION

Modification of Existing Facility		Yes	No
1.	Will this project modify an existing facility, system, or activity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.	Will this project involve an addition to an existing facility, system, or activity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If "Yes", check all relevant facility types and provide DEP facility identification numbers below.

Facility Type	DEP Fac ID#	Facility Type	DEP Fac ID#
<input type="checkbox"/> Air Emission Plant	_____	<input type="checkbox"/> Industrial Minerals Mining Operation	_____
<input type="checkbox"/> Beneficial Use (water)	_____	<input type="checkbox"/> Laboratory Location	_____
<input type="checkbox"/> Blasting Operation	_____	<input type="checkbox"/> Land Recycling Cleanup Location	_____
<input type="checkbox"/> Captive Hazardous Waste Operation	_____	<input type="checkbox"/> Mine DrainageTrmt/LandRecyProjLocation	_____
<input type="checkbox"/> Coal Ash Beneficial Use Operation	_____	<input type="checkbox"/> Municipal Waste Operation	_____
<input type="checkbox"/> Coal Mining Operation	_____	<input type="checkbox"/> Oil & Gas Encroachment Location	_____
<input type="checkbox"/> Coal Pillar Location	_____	<input type="checkbox"/> Oil & Gas Location	_____
<input type="checkbox"/> Commercial Hazardous Waste Operation	_____	<input type="checkbox"/> Oil & Gas Water Poll Control Facility	_____
<input type="checkbox"/> Dam Location	_____	<input type="checkbox"/> Oil & Gas Wastewater Storage Impoundment	_____
<input type="checkbox"/> Deep Mine Safety Operation -Anthracite	_____	<input type="checkbox"/> Public Water Supply System	_____
<input type="checkbox"/> Deep Mine Safety Operation -Bituminous	_____	<input type="checkbox"/> Radiation Facility	_____
<input type="checkbox"/> Deep Mine Safety Operation -Ind Minerals	_____	<input type="checkbox"/> Residual Waste Operation	_____
<input type="checkbox"/> Encroachment Location (water, wetland)	_____	<input type="checkbox"/> Storage Tank Location	_____
<input type="checkbox"/> Erosion & Sediment Control Facility	_____	<input type="checkbox"/> Water Pollution Control Facility	_____
<input type="checkbox"/> Explosive Storage Location	_____	<input type="checkbox"/> Water Resource	_____
		<input type="checkbox"/> Other:	_____

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
Station 0+00	41	20	48	75	56	43
Horizontal Accuracy Measure	Feet			--or-- Meters		
Horizontal Reference Datum Code	<input type="checkbox"/> North American Datum of 1927 <input type="checkbox"/> North American Datum of 1983 <input checked="" type="checkbox"/> World Geodetic System of 1984					
Horizontal Collection Method Code	GISDR					
Reference Point Code	CENTER					
Altitude	Feet 1280			--or-- Meters		
Altitude Datum Name	<input type="checkbox"/> The National Geodetic Vertical Datum of 1929 <input checked="" type="checkbox"/> The North American Vertical Datum of 1988 (NAVD88)					

Altitude (Vertical) Location Datum Collection Method Code	TOPO	
Geometric Type Code	POINT	
Data Collection Date	12/08/2018	
Source Map Scale Number	1	Inch(es) = 2000 Feet
	--or--	Centimeter(s) = Meters

PROJECT INFORMATION

Project Name
PennEast Pipeline Project

Project Description
See Project Description in JPA Section J

Project Consultant Last Name	First Name	MI	Suffix
Binckley	Sarah	K	

Project Consultant Title
Project Manager

Consulting Firm
AECOM

Mailing Address Line 1	Mailing Address Line 2
625 West Ridge Pike	Suite E-100
Address Last Line - City	State
Conshohocken	PA
	ZIP+4
	19428

Phone	Ext	FAX	Email Address
610-832-2713		610-832-3501	sarah.binckley@aecom.com

Time Schedules	Project Milestone (Optional)
09/2015	PennEast submitted FERC Application for Certificate of Public Convenience and Necessity
02/2016 - 03/2016	PennEast submitted PADEP Joint Permit Applications and ESCGP-2 applications
01/2018	Received FERC Certificate of Public Convenience and Necessity
12/2018	PennEast submits revised Joint Permit Applications and ESCGP-3 applications

- Have you informed the surrounding community and addressed any concerns prior to submitting the application to the Department? Yes No
- Is your project funded by state or federal grants? Yes No
Note: If "Yes", specify what aspect of the project is related to the grant and provide the grant source, contact person and grant expiration date.
 Aspect of Project Related to Grant _____
 Grant Source: _____
 Grant Contact Person: _____
 Grant Expiration Date: _____
- Is this application for an authorization on Appendix A of the Land Use Policy? (For referenced list, see Appendix A of the Land Use Policy attached to GIF instructions) Yes No
Note: If "No" to Question 3, the application is not subject to the Land Use Policy.
 If "Yes" to Question 3, the application is subject to this policy and the Applicant should answer the additional questions in the Land Use Information section.

LAND USE INFORMATION

Note: Applicants are encouraged to submit copies of local land use approvals or other evidence of compliance with local comprehensive plans and zoning ordinances.

- Is there an adopted county or multi-county comprehensive plan? Yes No
- Is there an adopted municipal or multi-municipal comprehensive plan? Yes No
- Is there an adopted county-wide zoning ordinance, municipal zoning ordinance or joint municipal zoning ordinance? Yes No
Note: If the Applicant answers "No" to either Questions 1, 2 or 3, the provisions of the PA MPC are not applicable and the Applicant does not need to respond to questions 4 and 5 below.
 If the Applicant answers "Yes" to questions 1, 2 and 3, the Applicant should respond to questions 4 and 5 below.
- Does the proposed project meet the provisions of the zoning ordinance or does the proposed project have zoning approval? If zoning approval has been received, attach documentation. Yes No
- Have you attached Municipal and County Land Use Letters for the project? Yes No

COORDINATION INFORMATION

Note: The PA Historical and Museum Commission must be notified of proposed projects in accordance with DEP Technical Guidance Document 012-0700-001 and the accompanying Cultural Resource Notice Form.

If the activity will be a mining project (i.e., mining of coal or industrial minerals, coal refuse disposal and/or the operation of a coal or industrial minerals preparation/processing facility), respond to questions 1.0 through 2.5 below.

If the activity will not be a mining project, skip questions 1.0 through 2.5 and begin with question 3.0.

1.0	Is this a coal mining project? If "Yes", respond to 1.1-1.6. If "No", skip to Question 2.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
1.1	Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be equal to or greater than 200 tons/day?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.2	Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be greater than 50,000 tons/year?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.3	Will this coal mining project involve coal preparation/ processing activities in which thermal coal dryers or pneumatic coal cleaners will be used?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.4	For this coal mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.5	Will this coal mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.6	Will this coal mining project involve underground coal mining to be conducted within 500 feet of an oil or gas well?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.0	Is this a non-coal (industrial minerals) mining project? If "Yes", respond to 2.1-2.6. If "No", skip to Question 3.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
2.1	Will this non-coal (industrial minerals) mining project involve the crushing and screening of non-coal minerals other than sand and gravel?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.2	Will this non-coal (industrial minerals) mining project involve the crushing and/or screening of sand and gravel with the exception of wet sand and gravel operations (screening only) and dry sand and gravel operations with a capacity of less than 150 tons/hour of unconsolidated materials?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.3	Will this non-coal (industrial minerals) mining project involve the construction, operation and/or modification of a portable non-metallic (i.e., non-coal) minerals processing plant under the authority of the General Permit for Portable Non-metallic Mineral Processing Plants (i.e., BAQ-PGPA/GP-3)?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.4	For this non-coal (industrial minerals) mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.5	Will this non-coal (industrial minerals) mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No

3.0	Will your project, activity, or authorization have anything to do with a well related to oil or gas production, have construction within 200 feet of, affect an oil or gas well, involve the waste from such a well, or string power lines above an oil or gas well? If "Yes", respond to 3.1-3.3. If "No", skip to Question 4.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
3.1	Does the oil- or gas-related project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water (including wetlands)?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
3.2	Will the oil- or gas-related project involve discharge of industrial wastewater or stormwater to a dry swale, surface water, ground water or an existing sanitary sewer system or storm water system? If "Yes", discuss in <i>Project Description</i> .	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
3.3	Will the oil- or gas-related project involve the construction and operation of industrial waste treatment facilities?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
4.0	Will the project involve a construction activity that results in earth disturbance? If "Yes", specify the total disturbed acreage. 4.0.1 Total Disturbed Acreage 1289.4	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.0	Does the project involve any of the following? If "Yes", respond to 5.1-5.3. If "No", skip to Question 6.0.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.1	Water Obstruction and Encroachment Projects – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.2	Wetland Impacts – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a wetland?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.3	Floodplain Projects by the commonwealth, a Political Subdivision of the commonwealth or a Public Utility – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a floodplain?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
6.0	Will the project involve discharge of stormwater or wastewater from an industrial activity to a dry swale, surface water, ground water or an existing sanitary sewer system or separate storm water system?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
7.0	Will the project involve the construction and operation of industrial waste treatment facilities?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
8.0	Will the project involve construction of sewage treatment facilities, sanitary sewers, or sewage pumping stations? If "Yes", indicate estimated proposed flow (gal/day). Also, discuss the sanitary sewer pipe sizes and the number of pumping stations/treatment facilities/name of downstream sewage facilities in the <i>Project Description</i> , where applicable. 8.0.1 Estimated Proposed Flow (gal/day)	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
9.0	Will the project involve the subdivision of land, or the generation of 800 gpd or more of sewage on an existing parcel of land or the generation of an additional 400 gpd of sewage on an already-developed parcel, or the generation of 800 gpd or more of industrial wastewater that would be discharged to an existing sanitary sewer system? 9.0.1 Was Act 537 sewage facilities planning submitted and approved by DEP? If "Yes" attach the approval letter. Approval required prior to 105/NPDES approval.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
10.0	Is this project for the beneficial use of biosolids for land application within Pennsylvania? If "Yes" indicate how much (i.e. gallons or dry tons per year). 10.0.1 Gallons Per Year (residential septage) _____ 10.0.2 Dry Tons Per Year (biosolids) _____	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
11.0	Does the project involve construction, modification or removal of a dam? If "Yes", identify the dam. 11.0.1 Dam Name	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No

12.0	Will the project interfere with the flow from, or otherwise impact, a dam? If "Yes", identify the dam.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
12.0.1	Dam Name				
13.0	Will the project involve operations (excluding during the construction period) that produce air emissions (i.e., NOX, VOC, etc.)? If "Yes", identify each type of emission followed by the amount of that emission.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
13.0.1	Enter all types & amounts of emissions; separate each set with semicolons.	The Project operational total Potential to Emit (PTE) in tons per year includes: NOx – 141; CO – 141; SO2 – 5.8; PM10 – 28; PM2.5 – 28; VOC – 13; GHG – 260,800; CH2O – 3.9; Total HAPs – 5.1			
14.0	Does the project include the construction or modification of a drinking water supply to serve 15 or more connections or 25 or more people, at least 60 days out of the year? If "Yes", check all proposed sub-facilities.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
14.0.1	Number of Persons Served				
14.0.2	Number of Employee/Guests				
14.0.3	Number of Connections				
14.0.4	Sub-Fac: Distribution System	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.5	Sub-Fac: Water Treatment Plant	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.6	Sub-Fac: Source	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.7	Sub-Fac: Pump Station	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.8	Sub Fac: Transmission Main	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.9	Sub-Fac: Storage Facility	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
15.0	Will your project include infiltration of storm water or waste water to ground water within one-half mile of a public water supply well, spring or infiltration gallery?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
16.0	Is your project to be served by an existing public water supply? If "Yes", indicate name of supplier and attach letter from supplier stating that it will serve the project.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
16.0.1	Supplier's Name				
16.0.2	Letter of Approval from Supplier is Attached	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
17.0	Will this project involve a new or increased drinking water withdrawal from a stream or other water body? If "Yes", should reference both Water Supply and Watershed Management.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
17.0.1	Stream Name				
18.0	Will the construction or operation of this project involve treatment, storage, reuse, or disposal of waste? If "Yes", indicate what type (i.e., hazardous, municipal (including infectious & chemotherapeutic), residual) and the amount to be treated, stored, re-used or disposed.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
18.0.1	Type & Amount				
19.0	Will your project involve the removal of coal, minerals, etc. as part of any earth disturbance activities?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
20.0	Does your project involve installation of a field constructed underground storage tank? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
20.0.1	Enter all substances & capacity of each; separate each set with semicolons.				
21.0	Does your project involve installation of an aboveground storage tank greater than 21,000 gallons capacity at an existing facility? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
21.0.1	Enter all substances & capacity of each; separate each set with semicolons.				

22.0 Does your project involve installation of a tank greater than 1,100 gallons which will contain a highly hazardous substance as defined in DEP's Regulated Substances List, 2570-BK-DEP2724? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit. Yes No

22.0.1 Enter all substances & capacity of each; separate each set with semicolons.

23.0 Does your project involve installation of a storage tank at a new facility with a total AST capacity greater than 21,000 gallons? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit. Yes No

23.0.1 Enter all substances & capacity of each; separate each set with semicolons.

24.0 Will the intended activity involve the use of a radiation source? Yes No

CERTIFICATION

I certify that I have the authority to submit this application on behalf of the applicant named herein and that the information provided in this application is true and correct to the best of my knowledge and information.

Type or Print Name Amber L. Holly



Environmental Project Manager

Signature

Title

12/10/18

Date


Subject:

FW: FedEx Shipment 773980550358 Delivered



Your package has been delivered


Tracking # 773980550358

Ship date: Mon, 12/17/2018		Delivery date: Tue, 12/18/2018 10:33 am
Sarah Binckley AECOM CONSHOHOCKEN, PA 19428 US	 Delivered	John Soloe Upper Nazareth Township 100 Newport Avenue NAZARETH, PA 18064 US

Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	773980550358
Status:	Delivered: 12/18/2018 10:33 AM Signed for By: K.MATARELLI
Reference:	60414094. 20000363.00035.08.
Signed for by:	K.MATARELLI
Delivery location:	NAZARETH, PA
Delivered to:	Receptionist/Front Desk
Service type:	FedEx Standard Overnight®
Packaging type:	FedEx® Envelope
Number of pieces:	1
Weight:	0.50 lb.
Special handling/Services:	Deliver Weekday
Standard transit:	12/18/2018 by 3:00 pm

 Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 9:36 AM CST on 12/18/2018.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

Standard transit is the date and time the package is scheduled to be delivered by, based on the selected service, destination and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

© 2018 Federal Express Corporation. The content of this message is protected by copyright and trademark laws under U.S. and international law. Review our [privacy policy](#). All rights reserved.

Thank you for your business.

JPA Section P - Northampton County
Floodplain Management Analysis



625 West Ridge Pike
Suite E-100
Conshohocken, PA 19428
www.aecom.com
www.urs.com

610 832 3500 tel
610 832 3501 fax

December 17, 2018

Bethlehem Township Supervisors
Doug Bruce
4225 Easton Avenue
Bethlehem, PA 18020-1496

**Subject: Updated Floodplain Management Analysis
PennEast Pipeline
Northampton County, Pennsylvania**

Dear Doug Bruce,

On February 2, 2016, AECOM notified Bethlehem Township that PennEast Pipeline Company, LLC (PennEast) was submitting Pennsylvania Chapter 105 Joint Permit Applications (JPAs) for authorization of wetland and watercourse crossings for the PennEast Pipeline Project (Project). The initial JPAs were submitted in February 2016, and PennEast will be submitting updated JPAs to the Pennsylvania Department of Environmental Protection (PADEP) in December 2018. In accordance with 25 Pennsylvania Code §105.13(e)(I)(vi), PennEast is providing this floodplain management analysis for Project impacts within Bethlehem Township.

Project Description

PennEast proposes to construct, install and operate the Project facilities to provide approximately 1.1 million dekatherms per day (MMDth/d) of year-round natural gas transportation services from the Marcellus Shale producing region in northern Pennsylvania to markets in New Jersey, eastern and southeastern Pennsylvania and surrounding states. The Project will include a new pipeline and aboveground facilities that will provide a new source of low cost natural gas and enhance the region's supply diversity. The Project facilities include a 36-inch diameter, 115-mile mainline pipeline extending from Luzerne County, Pennsylvania, to Mercer County, New Jersey. The Project will extend from various receipt point interconnections in the eastern Marcellus region to various delivery point interconnections in the heart of major northeastern natural gas-consuming markets.

Floodplain Management Analysis

The Project will cross Federal Emergency Management Agency (FEMA) 100-year floodplains within Bethlehem Township as shown on the attached map. Pipeline construction across watercourses and their floodplains will be performed in accordance with applicable permit conditions, the Federal Energy Regulatory Commission's (FERC's) Wetland and Waterbody Construction and Mitigation Procedures, and PennEast's Erosion and Sediment Control Plan (E&SCP). PennEast proposes to construct the pipeline across watercourses using conventional open-cut, dry crossing methods and trenchless techniques including horizontal directional drilling and conventional bores. Pre-construction contours will be restored after construction is complete; therefore, impacts within floodplains will be temporary in nature. The Project is not anticipated to result in increased flood elevations or encroachment within floodplains. There are no aboveground facilities or proposed permanent access roads sited in FEMA Special Flood Hazard Areas.

PennEast will continue to coordinate with the PADEP and US Army Corps of Engineers to obtain the required federal and state permits for temporary impacts to watercourses. If you have any comments regarding floodplain impacts, please direct comments to the PADEP Northeast Regional Office,



Waterways and Wetlands Program at 2 Public Square, Wilkes-Barre, Pennsylvania 18701-1915 or call 570-826-2511.

Yours sincerely,

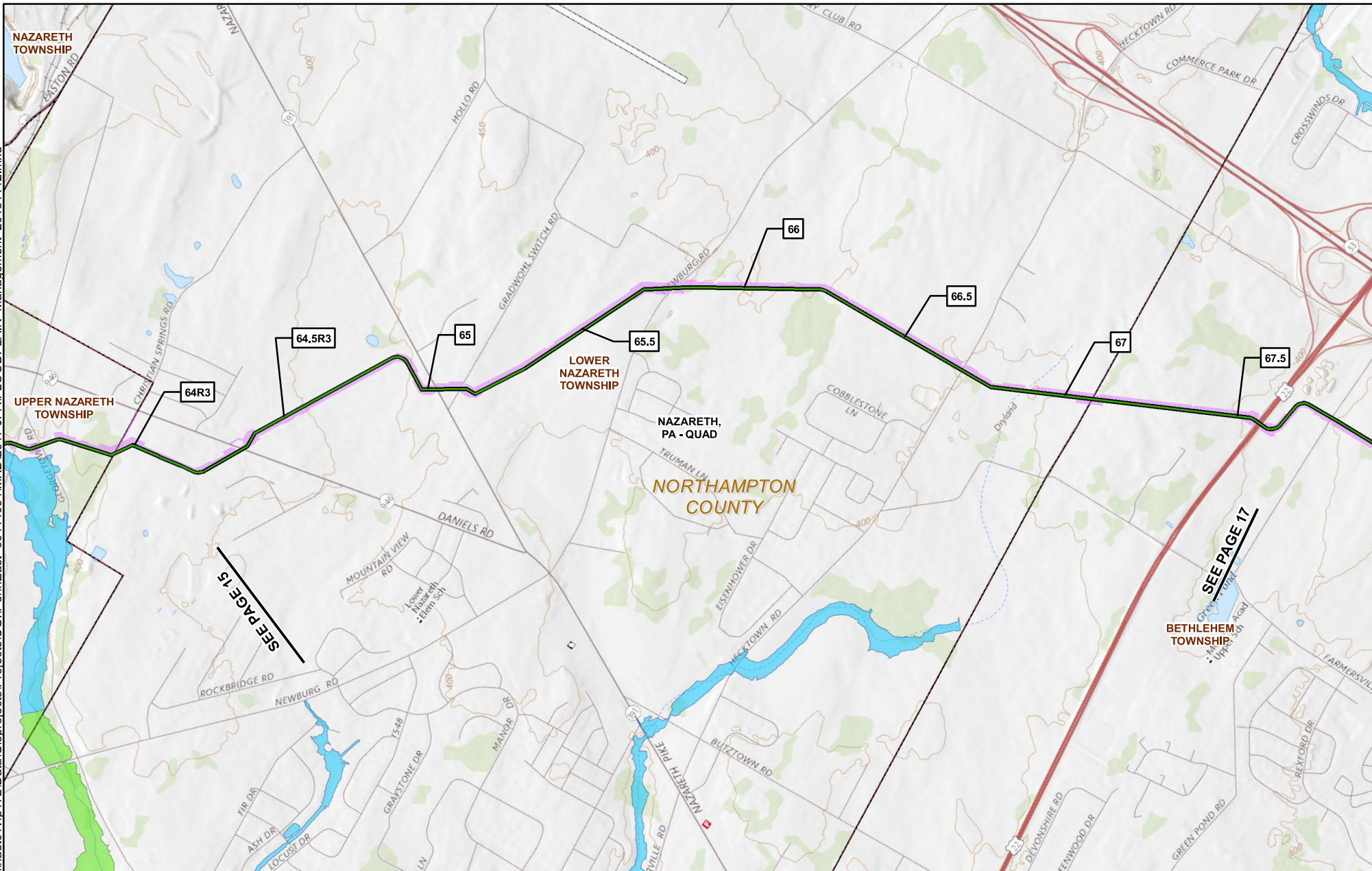
A handwritten signature in black ink that reads "Sarah K. Binckley". The signature is written in a cursive, flowing style.

Sarah K. Binckley
Project Manager, AECOM

cc: Casey Monagan, UGI Energy Services
Amber Holly, UGI Energy Services

Attachment

PennEast Pipeline Project 100-Year Floodplain Map



1	MILEPOST	FEMA 100-YEAR FLOOD ZONE
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)	A
	PROPOSED PERMANENT ABOVE GROUND FACILITY	AE
	PROPOSED HELLERTOWN LATERAL	AH
	PROPOSED PENNEAST PIPELINE CENTERLINE	AO
	PROPOSED CONSTRUCTION LIMIT	
	USGS QUADRANGLE BOUNDARY	

PENNEAST PIPELINE PROJECT 100-YEAR FLOODPLAIN MAP

**NORTHAMPTON COUNTY,
PENNSYLVANIA**

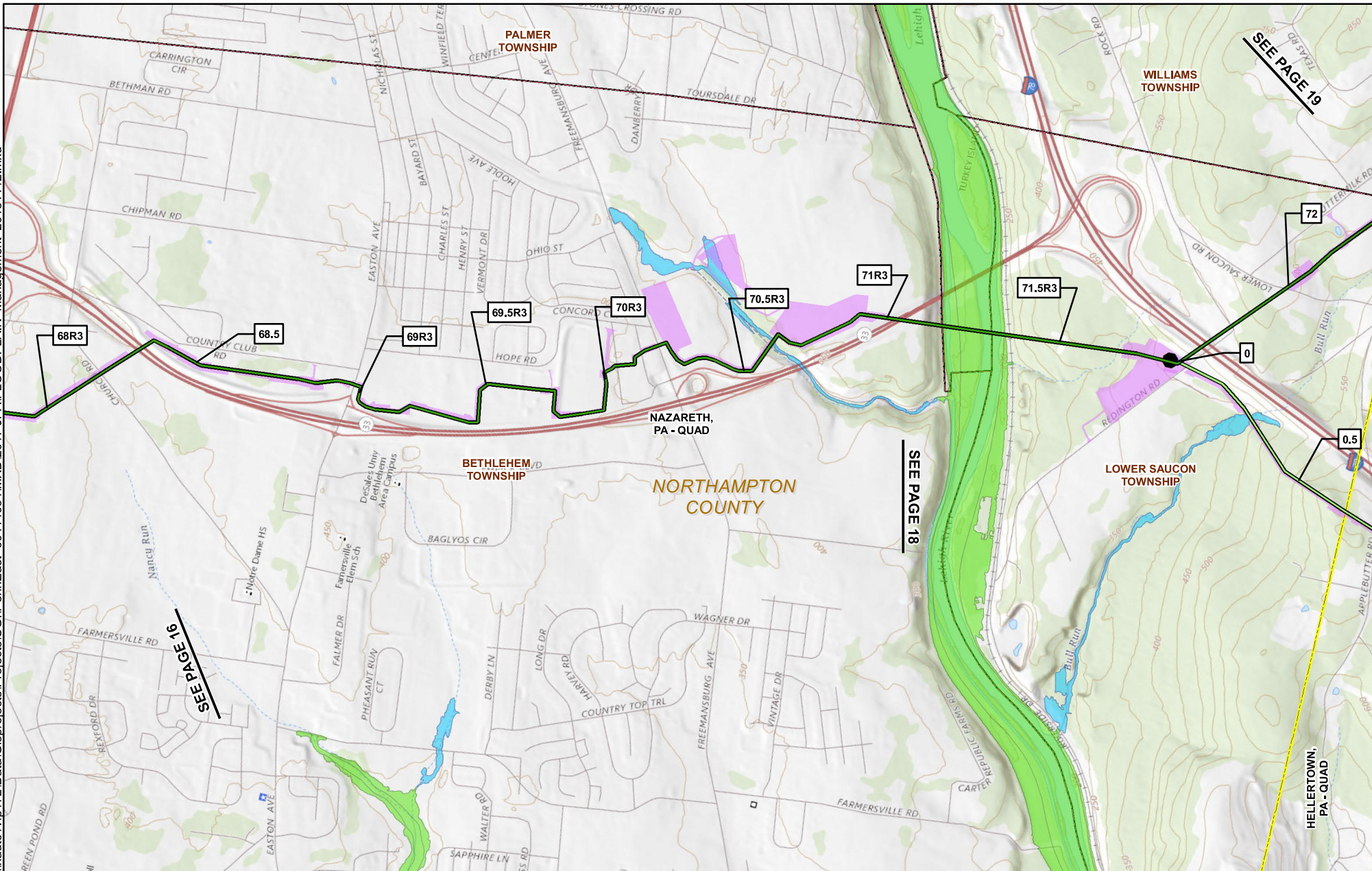


ABSOLUTE SCALE:
1:24,000

REFERENCE SCALE:
1 IN = 2,000 FT



DRAWN BY: KFS
CHECKED BY:
APPROVED BY:
REV. DATE: 11/19/2018
REVISION:
DESC: ISSUED FOR PERMITTING
PAGE: PAGE 16 OF 20



SEE PAGE 19

SEE PAGE 18

SEE PAGE 16

1	MILEPOST	FEMA 100-YEAR FLOOD ZONE
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)	A
	PROPOSED PERMANENT ABOVE GROUND FACILITY	AE
	PROPOSED HELLERTOWN LATERAL	AH
	PROPOSED PENNEAST PIPELINE CENTERLINE	AO
	PROPOSED CONSTRUCTION LIMIT	TOWNSHIP BOUNDARY
	USGS QUADRANGLE BOUNDARY	COUNTY BOUNDARY
		STATE BOUNDARY

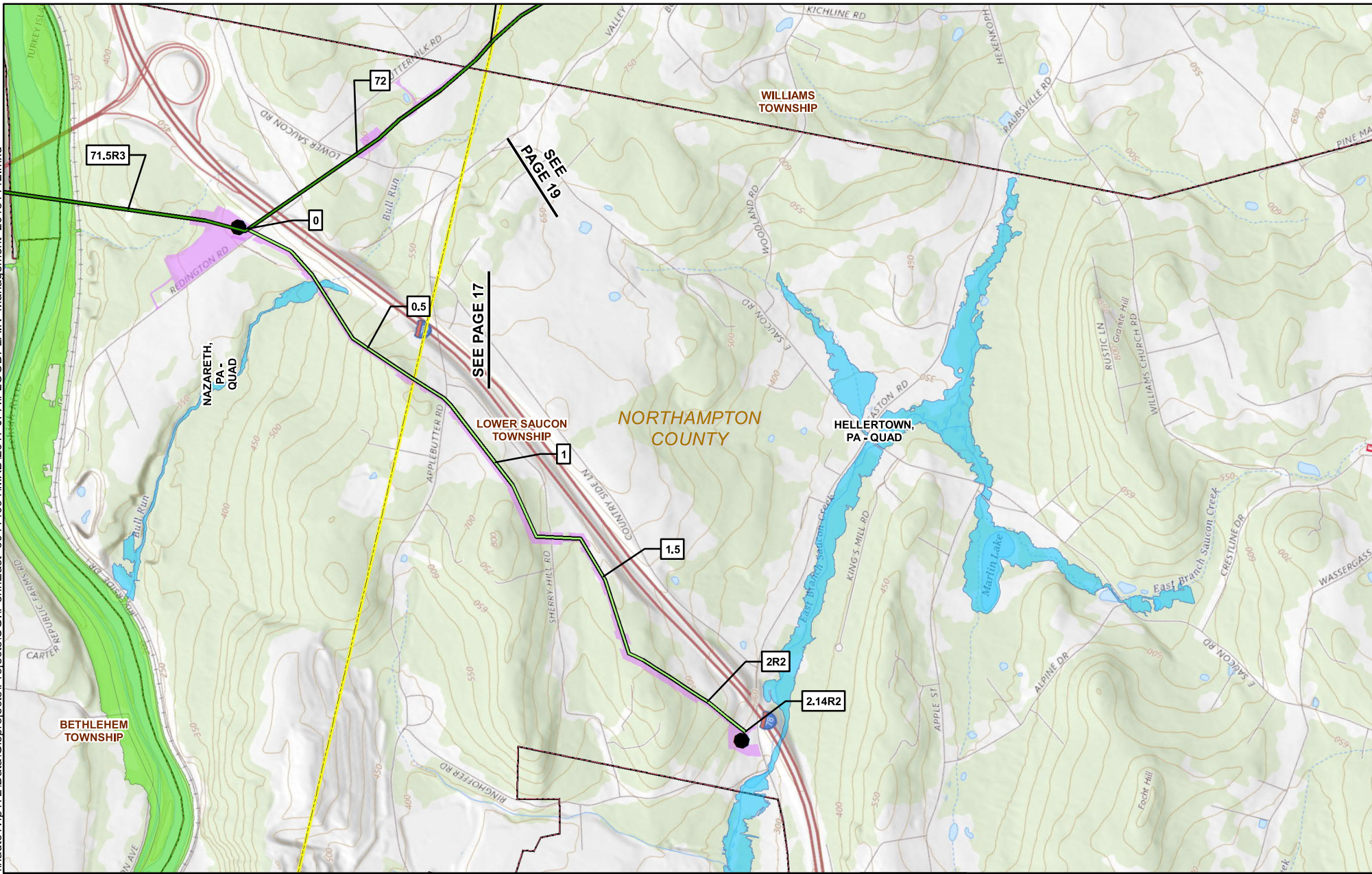
**PENNEAST PIPELINE PROJECT
100-YEAR FLOODPLAIN MAP**

**NORTHAMPTON COUNTY,
PENNSYLVANIA**

2,000 1,000 0 2,000 4,000 Feet

ABSOLUTE SCALE:
1:24,000
 REFERENCE SCALE:
1 IN = 2,000 FT

DRAWN BY: KFS
CHECKED BY:
APPROVED BY:
REV. DATE: 11/19/2018
REVISION:
DESC: ISSUED FOR PERMITTING
PAGE: PAGE 17 OF 20



1	MILEPOST	FEMA 100-YEAR FLOOD ZONE
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)	A
	PROPOSED PERMANENT ABOVE GROUND FACILITY	AE
	PROPOSED HELLERTOWN LATERAL	AH
	PROPOSED PENNEAST PIPELINE CENTERLINE	AO
	PROPOSED CONSTRUCTION LIMIT	
	USGS QUADRANGLE BOUNDARY	

PENNEAST PIPELINE PROJECT 100-YEAR FLOODPLAIN MAP

**NORTHAMPTON COUNTY,
PENNSYLVANIA**

2,000 1,000 0 2,000 4,000 Feet

N
W E
S

ABSOLUTE SCALE:
1:24,000

REFERENCE SCALE:
1 IN = 2,000 FT

DRAWN BY: KFS
CHECKED BY:
APPROVED BY:
REV. DATE: 11/19/2018
REVISION:
DESC: ISSUED FOR PERMITTING
PAGE: PAGE 18 OF 20

Form



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

GENERAL INFORMATION FORM – AUTHORIZATION APPLICATION

Before completing this General Information Form (GIF), read the step-by-step instructions provided in this application package. This version of the General Information Form (GIF) must be completed and returned with any program-specific application being submitted to the Department.

<p style="text-align: center;">Related ID#s (If Known)</p> <p>Client ID# _____ APS ID# _____</p> <p>Site ID# _____ Auth ID# _____</p> <p>Facility ID# _____</p>	<p>DEP USE ONLY</p> <p>Date Received & General Notes</p>
--	---

CLIENT INFORMATION

DEP Client ID#	Client Type / Code LLC				
Organization Name or Registered Fictitious Name PennEast Pipeline Company LLC		Employer ID# (EIN) 47-1573364	Dun & Bradstreet ID#		
Individual Last Name	First Name	MI	Suffix	SSN	
Additional Individual Last Name	First Name	MI	Suffix	SSN	
Mailing Address Line 1 1 Meridian Boulevard		Mailing Address Line 2 Suite 2C01			
Address Last Line – City Wyomissing		State PA	ZIP+4 19610	Country USA	
Client Contact Last Name Holly	First Name Amber	MI	Suffix		
Client Contact Title Environmental Project Manager		Phone 610-373-7999	Ext 1172		
Email Address aholly@ugies.com		FAX			

SITE INFORMATION

DEP Site ID#	Site Name PennEast Pipeline Project				
EPA ID#	Estimated Number of Employees to be Present at Site				
Description of Site Proposed natural gas pipeline right-of-way and the associated temporary workspace, compressor station, appurtenant facilities, access roads, staging areas, and wareyards necessary to construct the Project. Additional site description information is provided in JPA Section J - Project Narrative.					
County Name	Municipality	City	Boro	Twp	State
Luzerne, Carbon, Monroe, Northampton, and Bucks	(Luzerne:) Bear Creek Twp, Dallas Twp, Jenkins Twp, Kingston Twp, Plains Twp, West Wyoming Borough, Wyoming Borough, (Carbon:) Kidder Twp, Lower Towamensing Twp, Penn Forest Twp, Towamensing Twp, (Monroe:) Eldred Twp, (Northampton:) Bethlehem Twp, East Allen Twp, Easton City, Lower Nazareth Twp, Lower Saucon Twp, Moore Twp, Upper Nazareth Twp, Williams Twp, (Bucks:) Durham Twp, Riegelsville Borough	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	PA
County Name	Municipality	City	Boro	Twp	State
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Site Location Line 1 The PA portion of the PennEast Mainline Pipeline begins in Dallas Twp, Luzerne County and extends to Durham		Site Location Line 2 The Hellertown Lateral is located in Lower Saucon Twp, Northampton County. Additional site location information			

Twp, Bucks County. Additional site location information is provided in JPA Section J - Project Narrative.

Site Location Last Line – City State ZIP+4

Detailed Written Directions to Site

From Wilkes-Barre: head north on PA-309. At the intersection with State Route 415, bear right to continue on State Route 309/Tunkhannock Highway. After 1 mile, turn right on Upper Demunds Road. Immediately turn right on Hildebrandt Road. After 0.7 mile, turn right onto an unnamed road and follow 0.25 mile to the Wyoming Interconnect and the start of the PennEast Mainline. The entry and exit location for each county crossed by the Project is provided in JPA Section J - Project Narrative.

Site Contact Last Name Holly		First Name Amber	MI	Suffix
Site Contact Title Environmental Project Manager		Site Contact Firm UGI Energy Services, LLC		
Mailing Address Line 1 1 Meridian Boulevard		Mailing Address Line 2 Suite 2C01		
Mailing Address Last Line – City Wyomissing		State PA	ZIP+4 19610	
Phone 610-373-7999	Ext 1172	FAX	Email Address aholly@ugies.com	
NAICS Codes (Two- & Three-Digit Codes – List All That Apply) 22, 23, 48			6-Digit Code (Optional) 221210, 237120, 486210	
Client to Site Relationship OWNOP				

FACILITY INFORMATION

Modification of Existing Facility		Yes	No
1.	Will this project modify an existing facility, system, or activity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.	Will this project involve an addition to an existing facility, system, or activity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If "Yes", check all relevant facility types and provide DEP facility identification numbers below.

Facility Type	DEP Fac ID#	Facility Type	DEP Fac ID#
<input type="checkbox"/> Air Emission Plant	_____	<input type="checkbox"/> Industrial Minerals Mining Operation	_____
<input type="checkbox"/> Beneficial Use (water)	_____	<input type="checkbox"/> Laboratory Location	_____
<input type="checkbox"/> Blasting Operation	_____	<input type="checkbox"/> Land Recycling Cleanup Location	_____
<input type="checkbox"/> Captive Hazardous Waste Operation	_____	<input type="checkbox"/> Mine DrainageTrmt/LandRecyProjLocation	_____
<input type="checkbox"/> Coal Ash Beneficial Use Operation	_____	<input type="checkbox"/> Municipal Waste Operation	_____
<input type="checkbox"/> Coal Mining Operation	_____	<input type="checkbox"/> Oil & Gas Encroachment Location	_____
<input type="checkbox"/> Coal Pillar Location	_____	<input type="checkbox"/> Oil & Gas Location	_____
<input type="checkbox"/> Commercial Hazardous Waste Operation	_____	<input type="checkbox"/> Oil & Gas Water Poll Control Facility	_____
<input type="checkbox"/> Dam Location	_____	<input type="checkbox"/> Oil & Gas Wastewater Storage Impoundment	_____
<input type="checkbox"/> Deep Mine Safety Operation -Anthracite	_____	<input type="checkbox"/> Public Water Supply System	_____
<input type="checkbox"/> Deep Mine Safety Operation -Bituminous	_____	<input type="checkbox"/> Radiation Facility	_____
<input type="checkbox"/> Deep Mine Safety Operation -Ind Minerals	_____	<input type="checkbox"/> Residual Waste Operation	_____
<input type="checkbox"/> Encroachment Location (water, wetland)	_____	<input type="checkbox"/> Storage Tank Location	_____
<input type="checkbox"/> Erosion & Sediment Control Facility	_____	<input type="checkbox"/> Water Pollution Control Facility	_____
<input type="checkbox"/> Explosive Storage Location	_____	<input type="checkbox"/> Water Resource	_____
		<input type="checkbox"/> Other:	_____

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
Station 0+00	41	20	48	75	56	43
Horizontal Accuracy Measure	Feet			--or-- Meters		
Horizontal Reference Datum Code	<input type="checkbox"/> North American Datum of 1927 <input type="checkbox"/> North American Datum of 1983 <input checked="" type="checkbox"/> World Geodetic System of 1984					
Horizontal Collection Method Code	GISDR					
Reference Point Code	CENTER					
Altitude	Feet 1280			--or-- Meters		
Altitude Datum Name	<input type="checkbox"/> The National Geodetic Vertical Datum of 1929 <input checked="" type="checkbox"/> The North American Vertical Datum of 1988 (NAVD88)					

Altitude (Vertical) Location Datum Collection Method Code	TOPO	
Geometric Type Code	POINT	
Data Collection Date	12/08/2018	
Source Map Scale Number	1	Inch(es) = 2000 Feet
	--or--	Centimeter(s) = Meters

PROJECT INFORMATION

Project Name
PennEast Pipeline Project

Project Description
See Project Description in JPA Section J

Project Consultant Last Name	First Name	MI	Suffix
Binckley	Sarah	K	

Project Consultant Title
Project Manager

Consulting Firm
AECOM

Mailing Address Line 1	Mailing Address Line 2
625 West Ridge Pike	Suite E-100
Address Last Line - City	State
Conshohocken	PA
	ZIP+4
	19428

Phone	Ext	FAX	Email Address
610-832-2713		610-832-3501	sarah.binckley@aecom.com

Time Schedules	Project Milestone (Optional)
09/2015	PennEast submitted FERC Application for Certificate of Public Convenience and Necessity
02/2016 - 03/2016	PennEast submitted PADEP Joint Permit Applications and ESCGP-2 applications
01/2018	Received FERC Certificate of Public Convenience and Necessity
12/2018	PennEast submits revised Joint Permit Applications and ESCGP-3 applications

- Have you informed the surrounding community and addressed any concerns prior to submitting the application to the Department? Yes No
- Is your project funded by state or federal grants? Yes No
 Note: If "Yes", specify what aspect of the project is related to the grant and provide the grant source, contact person and grant expiration date.
 Aspect of Project Related to Grant _____
 Grant Source: _____
 Grant Contact Person: _____
 Grant Expiration Date: _____
- Is this application for an authorization on Appendix A of the Land Use Policy? (For referenced list, see Appendix A of the Land Use Policy attached to GIF instructions) Yes No
 Note: If "No" to Question 3, the application is not subject to the Land Use Policy.
 If "Yes" to Question 3, the application is subject to this policy and the Applicant should answer the additional questions in the Land Use Information section.

LAND USE INFORMATION

Note: Applicants are encouraged to submit copies of local land use approvals or other evidence of compliance with local comprehensive plans and zoning ordinances.

- Is there an adopted county or multi-county comprehensive plan? Yes No
- Is there an adopted municipal or multi-municipal comprehensive plan? Yes No
- Is there an adopted county-wide zoning ordinance, municipal zoning ordinance or joint municipal zoning ordinance? Yes No
 Note: If the Applicant answers "No" to either Questions 1, 2 or 3, the provisions of the PA MPC are not applicable and the Applicant does not need to respond to questions 4 and 5 below.
 If the Applicant answers "Yes" to questions 1, 2 and 3, the Applicant should respond to questions 4 and 5 below.
- Does the proposed project meet the provisions of the zoning ordinance or does the proposed project have zoning approval? If zoning approval has been received, attach documentation. Yes No
- Have you attached Municipal and County Land Use Letters for the project? Yes No

COORDINATION INFORMATION

Note: The PA Historical and Museum Commission must be notified of proposed projects in accordance with DEP Technical Guidance Document 012-0700-001 and the accompanying Cultural Resource Notice Form.

If the activity will be a mining project (i.e., mining of coal or industrial minerals, coal refuse disposal and/or the operation of a coal or industrial minerals preparation/processing facility), respond to questions 1.0 through 2.5 below.

If the activity will not be a mining project, skip questions 1.0 through 2.5 and begin with question 3.0.

1.0	Is this a coal mining project? If "Yes", respond to 1.1-1.6. If "No", skip to Question 2.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
1.1	Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be equal to or greater than 200 tons/day?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.2	Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be greater than 50,000 tons/year?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.3	Will this coal mining project involve coal preparation/ processing activities in which thermal coal dryers or pneumatic coal cleaners will be used?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.4	For this coal mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.5	Will this coal mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.6	Will this coal mining project involve underground coal mining to be conducted within 500 feet of an oil or gas well?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.0	Is this a non-coal (industrial minerals) mining project? If "Yes", respond to 2.1-2.6. If "No", skip to Question 3.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
2.1	Will this non-coal (industrial minerals) mining project involve the crushing and screening of non-coal minerals other than sand and gravel?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.2	Will this non-coal (industrial minerals) mining project involve the crushing and/or screening of sand and gravel with the exception of wet sand and gravel operations (screening only) and dry sand and gravel operations with a capacity of less than 150 tons/hour of unconsolidated materials?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.3	Will this non-coal (industrial minerals) mining project involve the construction, operation and/or modification of a portable non-metallic (i.e., non-coal) minerals processing plant under the authority of the General Permit for Portable Non-metallic Mineral Processing Plants (i.e., BAQ-PGPA/GP-3)?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.4	For this non-coal (industrial minerals) mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.5	Will this non-coal (industrial minerals) mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No

3.0	Will your project, activity, or authorization have anything to do with a well related to oil or gas production, have construction within 200 feet of, affect an oil or gas well, involve the waste from such a well, or string power lines above an oil or gas well? If "Yes", respond to 3.1-3.3. If "No", skip to Question 4.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
3.1	Does the oil- or gas-related project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water (including wetlands)?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
3.2	Will the oil- or gas-related project involve discharge of industrial wastewater or stormwater to a dry swale, surface water, ground water or an existing sanitary sewer system or storm water system? If "Yes", discuss in <i>Project Description</i> .	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
3.3	Will the oil- or gas-related project involve the construction and operation of industrial waste treatment facilities?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
4.0	Will the project involve a construction activity that results in earth disturbance? If "Yes", specify the total disturbed acreage. 4.0.1 Total Disturbed Acreage 1289.4	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.0	Does the project involve any of the following? If "Yes", respond to 5.1-5.3. If "No", skip to Question 6.0.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.1	Water Obstruction and Encroachment Projects – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.2	Wetland Impacts – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a wetland?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.3	Floodplain Projects by the commonwealth, a Political Subdivision of the commonwealth or a Public Utility – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a floodplain?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
6.0	Will the project involve discharge of stormwater or wastewater from an industrial activity to a dry swale, surface water, ground water or an existing sanitary sewer system or separate storm water system?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
7.0	Will the project involve the construction and operation of industrial waste treatment facilities?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
8.0	Will the project involve construction of sewage treatment facilities, sanitary sewers, or sewage pumping stations? If "Yes", indicate estimated proposed flow (gal/day). Also, discuss the sanitary sewer pipe sizes and the number of pumping stations/treatment facilities/name of downstream sewage facilities in the <i>Project Description</i> , where applicable. 8.0.1 Estimated Proposed Flow (gal/day)	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
9.0	Will the project involve the subdivision of land, or the generation of 800 gpd or more of sewage on an existing parcel of land or the generation of an additional 400 gpd of sewage on an already-developed parcel, or the generation of 800 gpd or more of industrial wastewater that would be discharged to an existing sanitary sewer system? 9.0.1 Was Act 537 sewage facilities planning submitted and approved by DEP? If "Yes" attach the approval letter. Approval required prior to 105/NPDES approval.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
10.0	Is this project for the beneficial use of biosolids for land application within Pennsylvania? If "Yes" indicate how much (i.e. gallons or dry tons per year). 10.0.1 Gallons Per Year (residential septage) _____ 10.0.2 Dry Tons Per Year (biosolids) _____	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
11.0	Does the project involve construction, modification or removal of a dam? If "Yes", identify the dam. 11.0.1 Dam Name	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No

12.0	Will the project interfere with the flow from, or otherwise impact, a dam? If "Yes", identify the dam.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
12.0.1	Dam Name				
13.0	Will the project involve operations (excluding during the construction period) that produce air emissions (i.e., NOX, VOC, etc.)? If "Yes", identify each type of emission followed by the amount of that emission.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
13.0.1	Enter all types & amounts of emissions; separate each set with semicolons.	The Project operational total Potential to Emit (PTE) in tons per year includes: NOx – 141; CO – 141; SO2 – 5.8; PM10 – 28; PM2.5 – 28; VOC – 13; GHG – 260,800; CH2O – 3.9; Total HAPs – 5.1			
14.0	Does the project include the construction or modification of a drinking water supply to serve 15 or more connections or 25 or more people, at least 60 days out of the year? If "Yes", check all proposed sub-facilities.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
14.0.1	Number of Persons Served				
14.0.2	Number of Employee/Guests				
14.0.3	Number of Connections				
14.0.4	Sub-Fac: Distribution System	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.5	Sub-Fac: Water Treatment Plant	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.6	Sub-Fac: Source	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.7	Sub-Fac: Pump Station	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.8	Sub Fac: Transmission Main	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.9	Sub-Fac: Storage Facility	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
15.0	Will your project include infiltration of storm water or waste water to ground water within one-half mile of a public water supply well, spring or infiltration gallery?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
16.0	Is your project to be served by an existing public water supply? If "Yes", indicate name of supplier and attach letter from supplier stating that it will serve the project.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
16.0.1	Supplier's Name				
16.0.2	Letter of Approval from Supplier is Attached	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
17.0	Will this project involve a new or increased drinking water withdrawal from a stream or other water body? If "Yes", should reference both Water Supply and Watershed Management.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
17.0.1	Stream Name				
18.0	Will the construction or operation of this project involve treatment, storage, reuse, or disposal of waste? If "Yes", indicate what type (i.e., hazardous, municipal (including infectious & chemotherapeutic), residual) and the amount to be treated, stored, re-used or disposed.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
18.0.1	Type & Amount				
19.0	Will your project involve the removal of coal, minerals, etc. as part of any earth disturbance activities?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
20.0	Does your project involve installation of a field constructed underground storage tank? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
20.0.1	Enter all substances & capacity of each; separate each set with semicolons.				
21.0	Does your project involve installation of an aboveground storage tank greater than 21,000 gallons capacity at an existing facility? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
21.0.1	Enter all substances & capacity of each; separate each set with semicolons.				

22.0 Does your project involve installation of a tank greater than 1,100 gallons which will contain a highly hazardous substance as defined in DEP's Regulated Substances List, 2570-BK-DEP2724? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit. Yes No

22.0.1 Enter all substances & capacity of each; separate each set with semicolons.

23.0 Does your project involve installation of a storage tank at a new facility with a total AST capacity greater than 21,000 gallons? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit. Yes No

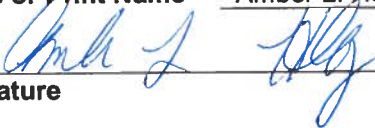
23.0.1 Enter all substances & capacity of each; separate each set with semicolons.

24.0 Will the intended activity involve the use of a radiation source? Yes No

CERTIFICATION

I certify that I have the authority to submit this application on behalf of the applicant named herein and that the information provided in this application is true and correct to the best of my knowledge and information.

Type or Print Name Amber L. Holly



Environmental Project Manager

12/10/18

Signature

Title

Date


Subject:

FW: FedEx Shipment 773978341093 Delivered

Your package has been delivered

Tracking # 773978341093

Ship date: Mon, 12/17/2018	Delivery date: Tue, 12/18/2018 2:51 pm
Sarah Binckley AECOM CONSHOHOCKEN, PA 19428 US	Doug Bruce Bethlehem Township 4225 Easton Avenue BETHLEHEM, PA 18020 US



Delivered



Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	773978341093
Status:	Delivered: 12/18/2018 2:51 PM Signed for By: K.YEAGER
Reference:	60414094. 20000363.00035.08.
Signed for by:	K.YEAGER
Delivery location:	BETHLEHEM, PA
Delivered to:	Receptionist/Front Desk
Service type:	FedEx Standard Overnight®
Packaging type:	FedEx® Envelope
Number of pieces:	1
Weight:	0.50 lb.
Special handling/Services:	Deliver Weekday
Standard transit:	12/18/2018 by 3:00 pm

 Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 3:50 PM CST on 12/18/2018.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

Standard transit is the date and time the package is scheduled to be delivered by, based on the selected service, destination and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

© 2018 Federal Express Corporation. The content of this message is protected by copyright and trademark laws under U.S. and international law. Review our [privacy policy](#). All rights reserved.

Thank you for your business.



625 West Ridge Pike
Suite E-100
Conshohocken, PA 19428
www.aecom.com
www.urs.com

610 832 3500 tel
610 832 3501 fax

December 17, 2018

Moore Township Supervisors
Jason Harhart
2491 Community Drive
Bath, PA 18014

**Subject: Updated Floodplain Management Analysis
PennEast Pipeline
Northampton County, Pennsylvania**

Dear Jason Harhart,

On February 2, 2016, AECOM notified Moore Township that PennEast Pipeline Company, LLC (PennEast) was submitting Pennsylvania Chapter 105 Joint Permit Applications (JPAs) for authorization of wetland and watercourse crossings for the PennEast Pipeline Project (Project). The initial JPAs were submitted in February 2016, and PennEast will be submitting updated JPAs to the Pennsylvania Department of Environmental Protection (PADEP) in December 2018. In accordance with 25 Pennsylvania Code §105.13(e)(I)(vi), PennEast is providing this floodplain management analysis for Project impacts within Moore Township.

Project Description

PennEast proposes to construct, install and operate the Project facilities to provide approximately 1.1 million dekatherms per day (MMDth/d) of year-round natural gas transportation services from the Marcellus Shale producing region in northern Pennsylvania to markets in New Jersey, eastern and southeastern Pennsylvania and surrounding states. The Project will include a new pipeline and aboveground facilities that will provide a new source of low cost natural gas and enhance the region's supply diversity. The Project facilities include a 36-inch diameter, 115-mile mainline pipeline extending from Luzerne County, Pennsylvania, to Mercer County, New Jersey. The Project will extend from various receipt point interconnections in the eastern Marcellus region to various delivery point interconnections in the heart of major northeastern natural gas-consuming markets.

Floodplain Management Analysis

The Project will cross Federal Emergency Management Agency (FEMA) 100-year floodplains within Moore Township as shown on the attached map. Pipeline construction across watercourses and their floodplains will be performed in accordance with applicable permit conditions, the Federal Energy Regulatory Commission's (FERC's) Wetland and Waterbody Construction and Mitigation Procedures, and PennEast's Erosion and Sediment Control Plan (E&SCP). PennEast proposes to construct the pipeline across watercourses using conventional open-cut, dry crossing methods and trenchless techniques including horizontal directional drilling and conventional bores. Pre-construction contours will be restored after construction is complete; therefore, impacts within floodplains will be temporary in nature. The Project is not anticipated to result in increased flood elevations or encroachment within floodplains. There are no aboveground facilities or proposed permanent access roads sited in FEMA Special Flood Hazard Areas.

PennEast will continue to coordinate with the PADEP and US Army Corps of Engineers to obtain the required federal and state permits for temporary impacts to watercourses. If you have any comments regarding floodplain impacts, please direct comments to the PADEP Northeast Regional Office,



Waterways and Wetlands Program at 2 Public Square, Wilkes-Barre, Pennsylvania 18701-1915 or call 570-826-2511.

Yours sincerely,

A handwritten signature in black ink that reads "Sarah K. Binckley". The signature is written in a cursive, flowing style.

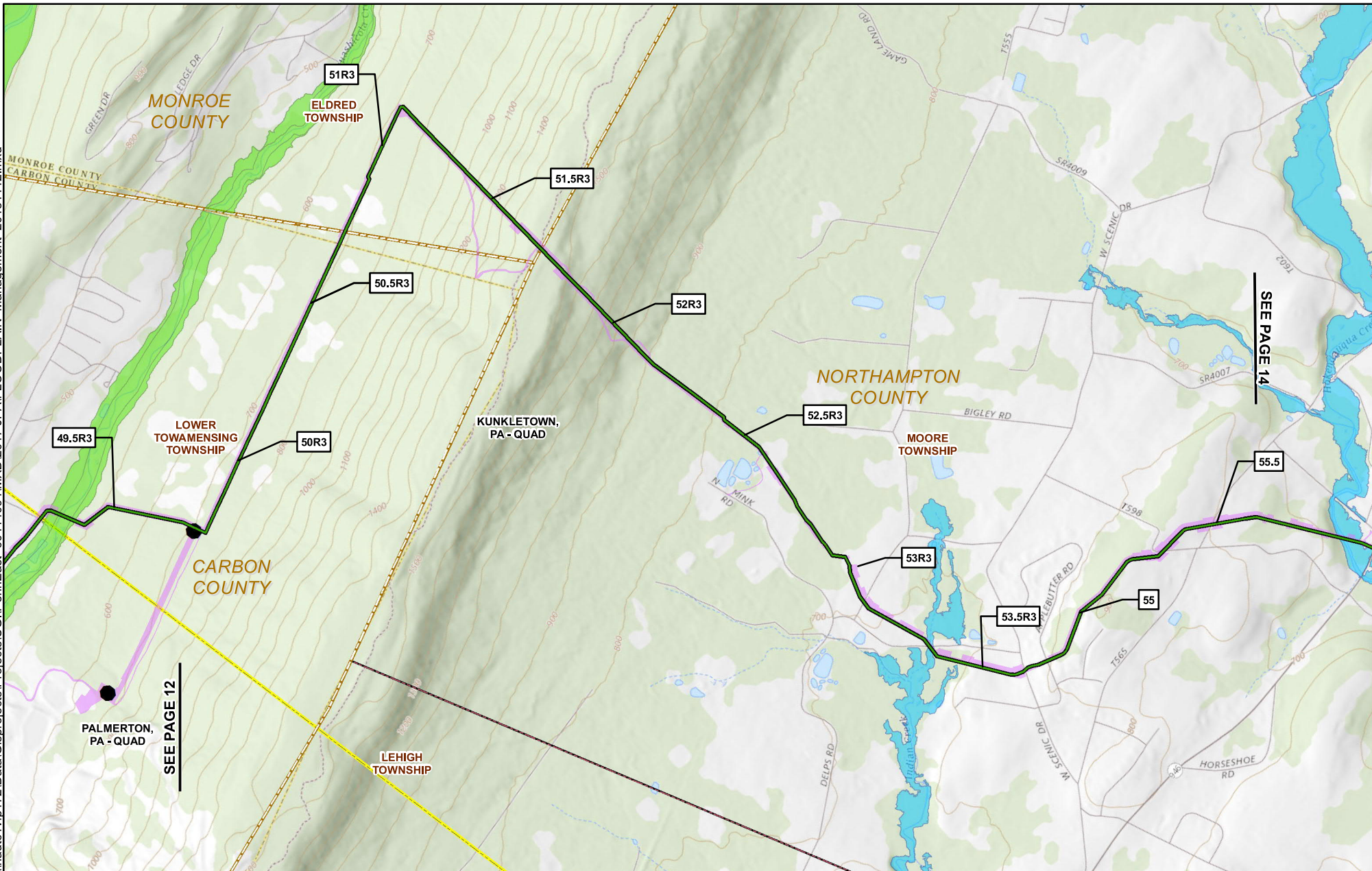
Sarah K. Binckley
Project Manager, AECOM

cc: Casey Monagan, UGI Energy Services
Amber Holly, UGI Energy Services

Attachment

PennEast Pipeline Project 100-Year Floodplain Map

\\nadc1vfp172\Data\GIS\projects\Projects\UG\PennEast_60414094\MXD\2017_JPA\FLOODPLAIN_Management_20181112.mxd



SEE PAGE 12

SEE PAGE 14

1	MILEPOST	FEMA 100-YEAR FLOOD ZONE
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)	A
	PROPOSED PERMANENT ABOVE GROUND FACILITY	AE
	PROPOSED HELLERTOWN LATERAL	AH
	PROPOSED PENNEAST PIPELINE CENTERLINE	AO
	PROPOSED CONSTRUCTION LIMIT	
	USGS QUADRANGLE BOUNDARY	

PENNEAST PIPELINE PROJECT 100-YEAR FLOODPLAIN MAP

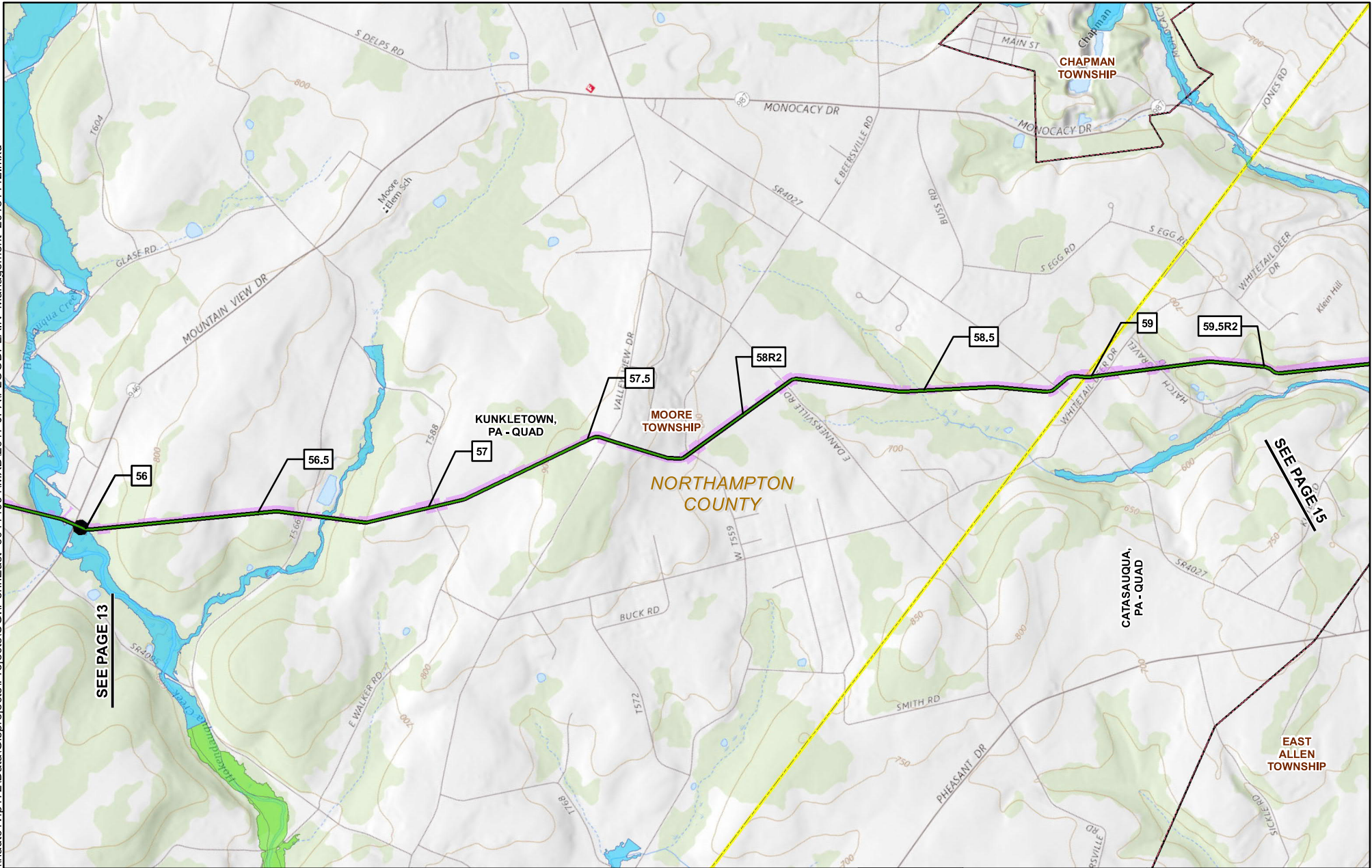
CARBON, MONROE, & NORTHAMPTON COUNTIES, PENNSYLVANIA



ABSOLUTE SCALE:
1:24,000

REFERENCE SCALE:
1 IN = 2,000 FT

DRAWN BY: KFS
CHECKED BY:
APPROVED BY:
REV. DATE: 11/19/2018
REVISION:
DESC: ISSUED FOR PERMITTING
PAGE: PAGE 13 OF 20



SEE PAGE 13

SEE PAGE 15

1	MILEPOST	FEMA 100-YEAR FLOOD ZONE
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)	A
	PROPOSED PERMANENT ABOVE GROUND FACILITY	AE
	PROPOSED HELLERTOWN LATERAL	AH
	PROPOSED PENNEAST PIPELINE CENTERLINE	AO
	PROPOSED CONSTRUCTION LIMIT	
	USGS QUADRANGLE BOUNDARY	

PENNEAST PIPELINE PROJECT 100-YEAR FLOODPLAIN MAP

NORTHAMPTON COUNTY,
PENNSYLVANIA

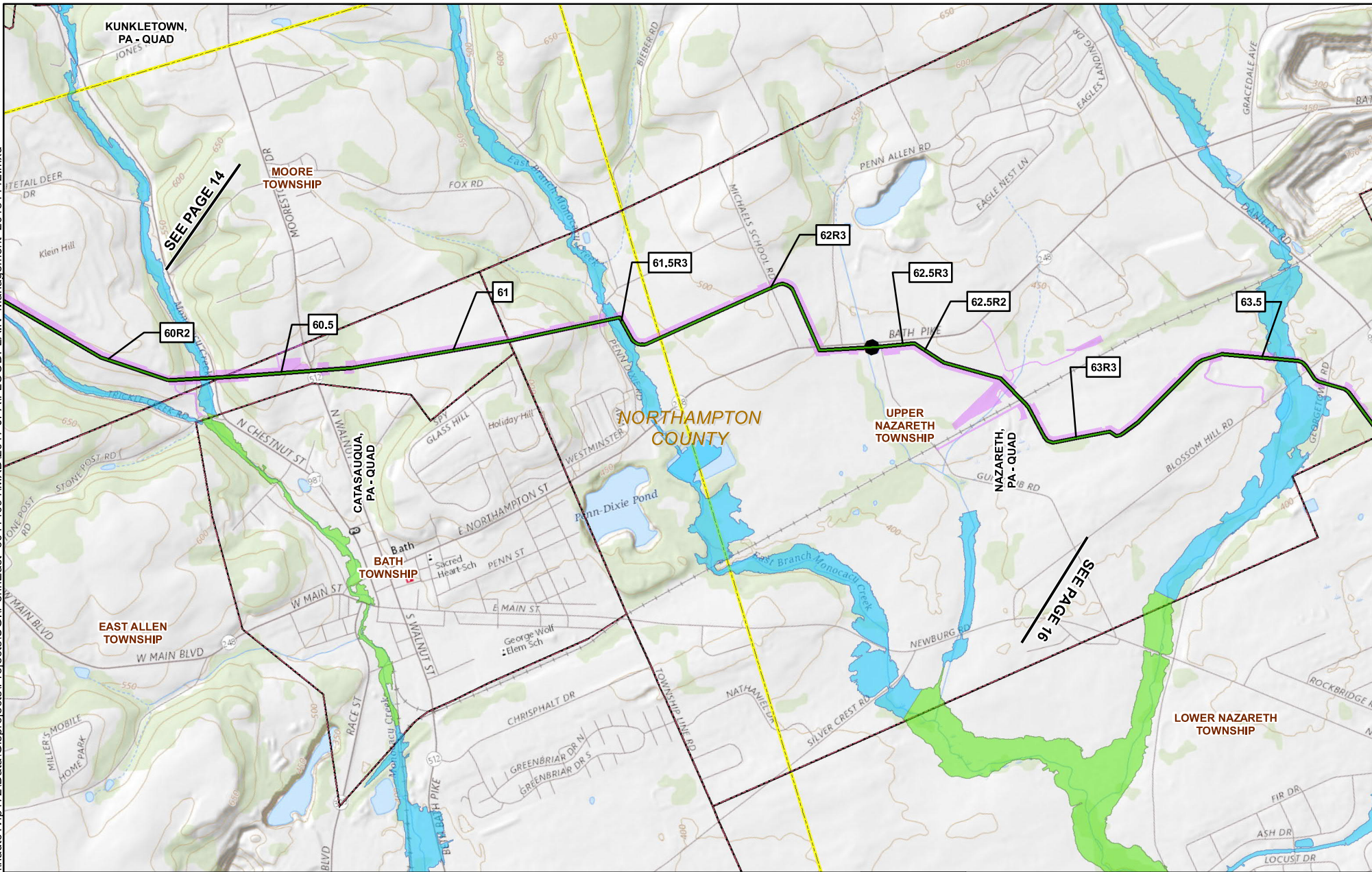


ABSOLUTE SCALE:
1:24,000

REFERENCE SCALE:
1 IN = 2,000 FT



DRAWN BY: KFS
CHECKED BY:
APPROVED BY:
REV. DATE: 11/19/2018
REVISION:
DESC: ISSUED FOR PERMITTING
PAGE: PAGE 14 OF 20



1	MILEPOST	FEMA 100-YEAR FLOOD ZONE
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)	A
	PROPOSED PERMANENT ABOVE GROUND FACILITY	AE
	PROPOSED HELLERTOWN LATERAL	AH
	PROPOSED PENNEAST PIPELINE CENTERLINE	AO
	PROPOSED CONSTRUCTION LIMIT	
	USGS QUADRANGLE BOUNDARY	
		TOWNSHIP BOUNDARY
		COUNTY BOUNDARY
		STATE BOUNDARY

PENNEAST PIPELINE PROJECT 100-YEAR FLOODPLAIN MAP

**NORTHAMPTON COUNTY,
PENNSYLVANIA**



ABSOLUTE SCALE:
1:24,000

REFERENCE SCALE:
1 IN = 2,000 FT



DRAWN BY: KFS
CHECKED BY:
APPROVED BY:
REV. DATE: 11/19/2018
REVISION:
DESC: ISSUED FOR PERMITTING
PAGE: PAGE 15 OF 20

Form



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

GENERAL INFORMATION FORM – AUTHORIZATION APPLICATION

Before completing this General Information Form (GIF), read the step-by-step instructions provided in this application package. This version of the General Information Form (GIF) must be completed and returned with any program-specific application being submitted to the Department.

Related ID#s (If Known)		DEP USE ONLY	
Client ID# _____	APS ID# _____	Date Received & General Notes	
Site ID# _____	Auth ID# _____		
Facility ID# _____			

CLIENT INFORMATION

DEP Client ID#	Client Type / Code			
	LLC			
Organization Name or Registered Fictitious Name		Employer ID# (EIN)	Dun & Bradstreet ID#	
PennEast Pipeline Company LLC		47-1573364		
Individual Last Name	First Name	MI	Suffix	SSN
Additional Individual Last Name	First Name	MI	Suffix	SSN
Mailing Address Line 1		Mailing Address Line 2		
1 Meridian Boulevard		Suite 2C01		
Address Last Line – City		State	ZIP+4	Country
Wyomissing		PA	19610	USA
Client Contact Last Name	First Name	MI	Suffix	
Holly	Amber			
Client Contact Title		Phone	Ext	
Environmental Project Manager		610-373-7999	1172	
Email Address		FAX		
aholly@ugies.com				

SITE INFORMATION

DEP Site ID#	Site Name				
	PennEast Pipeline Project				
EPA ID#	Estimated Number of Employees to be Present at Site				
Description of Site					
Proposed natural gas pipeline right-of-way and the associated temporary workspace, compressor station, appurtenant facilities, access roads, staging areas, and wareyards necessary to construct the Project. Additional site description information is provided in JPA Section J - Project Narrative.					
County Name	Municipality	City	Boro	Twp	State
Luzerne, Carbon, Monroe, Northampton, and Bucks	(Luzerne:) Bear Creek Twp, Dallas Twp, Jenkins Twp, Kingston Twp, Plains Twp, West Wyoming Borough, Wyoming Borough, (Carbon:) Kidder Twp, Lower Towamensing Twp, Penn Forest Twp, Towamensing Twp, (Monroe:) Eldred Twp, (Northampton:) Bethlehem Twp, East Allen Twp, Easton City, Lower Nazareth Twp, Lower Saucon Twp, Moore Twp, Upper Nazareth Twp, Williams Twp, (Bucks:) Durham Twp, Riegelsville Borough	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	PA
County Name	Municipality	City	Boro	Twp	State
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Site Location Line 1		Site Location Line 2			
The PA portion of the PennEast Mainline Pipeline begins in Dallas Twp, Luzerne County and extends to Durham		The Hellertown Lateral is located in Lower Saucon Twp, Northampton County. Additional site location information			

Twp, Bucks County. Additional site location information is provided in JPA Section J - Project Narrative.

Site Location Last Line – City State ZIP+4

Detailed Written Directions to Site

From Wilkes-Barre: head north on PA-309. At the intersection with State Route 415, bear right to continue on State Route 309/Tunkhannock Highway. After 1 mile, turn right on Upper Demunds Road. Immediately turn right on Hildebrandt Road. After 0.7 mile, turn right onto an unnamed road and follow 0.25 mile to the Wyoming Interconnect and the start of the PennEast Mainline. The entry and exit location for each county crossed by the Project is provided in JPA Section J - Project Narrative.

Site Contact Last Name Holly	First Name Amber	MI	Suffix
Site Contact Title Environmental Project Manager		Site Contact Firm UGI Energy Services, LLC	
Mailing Address Line 1 1 Meridian Boulevard		Mailing Address Line 2 Suite 2C01	
Mailing Address Last Line – City Wyomissing		State PA	ZIP+4 19610
Phone 610-373-7999	Ext 1172	FAX	Email Address aholly@ugies.com
NAICS Codes (Two- & Three-Digit Codes – List All That Apply) 22, 23, 48			6-Digit Code (Optional) 221210, 237120, 486210
Client to Site Relationship OWNOP			

FACILITY INFORMATION

Modification of Existing Facility	Yes	No
1. Will this project modify an existing facility, system, or activity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Will this project involve an addition to an existing facility, system, or activity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If "Yes", check all relevant facility types and provide DEP facility identification numbers below.

Facility Type	DEP Fac ID#	Facility Type	DEP Fac ID#
<input type="checkbox"/> Air Emission Plant	_____	<input type="checkbox"/> Industrial Minerals Mining Operation	_____
<input type="checkbox"/> Beneficial Use (water)	_____	<input type="checkbox"/> Laboratory Location	_____
<input type="checkbox"/> Blasting Operation	_____	<input type="checkbox"/> Land Recycling Cleanup Location	_____
<input type="checkbox"/> Captive Hazardous Waste Operation	_____	<input type="checkbox"/> Mine DrainagETrmt/LandRecyProjLocation	_____
<input type="checkbox"/> Coal Ash Beneficial Use Operation	_____	<input type="checkbox"/> Municipal Waste Operation	_____
<input type="checkbox"/> Coal Mining Operation	_____	<input type="checkbox"/> Oil & Gas Encroachment Location	_____
<input type="checkbox"/> Coal Pillar Location	_____	<input type="checkbox"/> Oil & Gas Location	_____
<input type="checkbox"/> Commercial Hazardous Waste Operation	_____	<input type="checkbox"/> Oil & Gas Water Poll Control Facility	_____
<input type="checkbox"/> Dam Location	_____	<input type="checkbox"/> Oil & Gas Wastewater Storage Impoundment	_____
<input type="checkbox"/> Deep Mine Safety Operation -Anthracite	_____	<input type="checkbox"/> Public Water Supply System	_____
<input type="checkbox"/> Deep Mine Safety Operation -Bituminous	_____	<input type="checkbox"/> Radiation Facility	_____
<input type="checkbox"/> Deep Mine Safety Operation -Ind Minerals	_____	<input type="checkbox"/> Residual Waste Operation	_____
<input type="checkbox"/> Encroachment Location (water, wetland)	_____	<input type="checkbox"/> Storage Tank Location	_____
<input type="checkbox"/> Erosion & Sediment Control Facility	_____	<input type="checkbox"/> Water Pollution Control Facility	_____
<input type="checkbox"/> Explosive Storage Location	_____	<input type="checkbox"/> Water Resource	_____
		<input type="checkbox"/> Other:	_____

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
Station 0+00	41	20	48	75	56	43
Horizontal Accuracy Measure	Feet			--or-- Meters		
Horizontal Reference Datum Code	<input type="checkbox"/> North American Datum of 1927 <input type="checkbox"/> North American Datum of 1983 <input checked="" type="checkbox"/> World Geodetic System of 1984					
Horizontal Collection Method Code	GISDR					
Reference Point Code	CENTER					
Altitude	Feet 1280			--or-- Meters		
Altitude Datum Name	<input type="checkbox"/> The National Geodetic Vertical Datum of 1929 <input checked="" type="checkbox"/> The North American Vertical Datum of 1988 (NAVD88)					

Altitude (Vertical) Location Datum Collection Method Code	TOPO	
Geometric Type Code	POINT	
Data Collection Date	12/08/2018	
Source Map Scale Number	1	Inch(es) = 2000 Feet
	--or--	Centimeter(s) = Meters

PROJECT INFORMATION

Project Name
PennEast Pipeline Project

Project Description
See Project Description in JPA Section J

Project Consultant Last Name	First Name	MI	Suffix
Binckley	Sarah	K	

Project Consultant Title
Project Manager

Consulting Firm
AECOM

Mailing Address Line 1	Mailing Address Line 2
625 West Ridge Pike	Suite E-100
Address Last Line - City	State
Conshohocken	PA
	ZIP+4
	19428

Phone	Ext	FAX	Email Address
610-832-2713		610-832-3501	sarah.binckley@aecom.com

Time Schedules	Project Milestone (Optional)
09/2015	PennEast submitted FERC Application for Certificate of Public Convenience and Necessity
02/2016 - 03/2016	PennEast submitted PADEP Joint Permit Applications and ESCGP-2 applications
01/2018	Received FERC Certificate of Public Convenience and Necessity
12/2018	PennEast submits revised Joint Permit Applications and ESCGP-3 applications

- Have you informed the surrounding community and addressed any concerns prior to submitting the application to the Department? Yes No
- Is your project funded by state or federal grants? Yes No
Note: If "Yes", specify what aspect of the project is related to the grant and provide the grant source, contact person and grant expiration date.
 Aspect of Project Related to Grant _____
 Grant Source: _____
 Grant Contact Person: _____
 Grant Expiration Date: _____
- Is this application for an authorization on Appendix A of the Land Use Policy? (For referenced list, see Appendix A of the Land Use Policy attached to GIF instructions) Yes No
Note: If "No" to Question 3, the application is not subject to the Land Use Policy.
 If "Yes" to Question 3, the application is subject to this policy and the Applicant should answer the additional questions in the Land Use Information section.

LAND USE INFORMATION

Note: Applicants are encouraged to submit copies of local land use approvals or other evidence of compliance with local comprehensive plans and zoning ordinances.

- Is there an adopted county or multi-county comprehensive plan? Yes No
- Is there an adopted municipal or multi-municipal comprehensive plan? Yes No
- Is there an adopted county-wide zoning ordinance, municipal zoning ordinance or joint municipal zoning ordinance? Yes No
Note: If the Applicant answers "No" to either Questions 1, 2 or 3, the provisions of the PA MPC are not applicable and the Applicant does not need to respond to questions 4 and 5 below.
 If the Applicant answers "Yes" to questions 1, 2 and 3, the Applicant should respond to questions 4 and 5 below.
- Does the proposed project meet the provisions of the zoning ordinance or does the proposed project have zoning approval? If zoning approval has been received, attach documentation. Yes No
- Have you attached Municipal and County Land Use Letters for the project? Yes No

COORDINATION INFORMATION

Note: The PA Historical and Museum Commission must be notified of proposed projects in accordance with DEP Technical Guidance Document 012-0700-001 and the accompanying Cultural Resource Notice Form.

If the activity will be a mining project (i.e., mining of coal or industrial minerals, coal refuse disposal and/or the operation of a coal or industrial minerals preparation/processing facility), respond to questions 1.0 through 2.5 below.

If the activity will not be a mining project, skip questions 1.0 through 2.5 and begin with question 3.0.

1.0	Is this a coal mining project? If "Yes", respond to 1.1-1.6. If "No", skip to Question 2.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
1.1	Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be equal to or greater than 200 tons/day?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.2	Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be greater than 50,000 tons/year?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.3	Will this coal mining project involve coal preparation/ processing activities in which thermal coal dryers or pneumatic coal cleaners will be used?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.4	For this coal mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.5	Will this coal mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.6	Will this coal mining project involve underground coal mining to be conducted within 500 feet of an oil or gas well?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.0	Is this a non-coal (industrial minerals) mining project? If "Yes", respond to 2.1-2.6. If "No", skip to Question 3.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
2.1	Will this non-coal (industrial minerals) mining project involve the crushing and screening of non-coal minerals other than sand and gravel?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.2	Will this non-coal (industrial minerals) mining project involve the crushing and/or screening of sand and gravel with the exception of wet sand and gravel operations (screening only) and dry sand and gravel operations with a capacity of less than 150 tons/hour of unconsolidated materials?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.3	Will this non-coal (industrial minerals) mining project involve the construction, operation and/or modification of a portable non-metallic (i.e., non-coal) minerals processing plant under the authority of the General Permit for Portable Non-metallic Mineral Processing Plants (i.e., BAQ-PGPA/GP-3)?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.4	For this non-coal (industrial minerals) mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.5	Will this non-coal (industrial minerals) mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No

3.0	Will your project, activity, or authorization have anything to do with a well related to oil or gas production, have construction within 200 feet of, affect an oil or gas well, involve the waste from such a well, or string power lines above an oil or gas well? If "Yes", respond to 3.1-3.3. If "No", skip to Question 4.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
3.1	Does the oil- or gas-related project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water (including wetlands)?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
3.2	Will the oil- or gas-related project involve discharge of industrial wastewater or stormwater to a dry swale, surface water, ground water or an existing sanitary sewer system or storm water system? If "Yes", discuss in <i>Project Description</i> .	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
3.3	Will the oil- or gas-related project involve the construction and operation of industrial waste treatment facilities?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
4.0	Will the project involve a construction activity that results in earth disturbance? If "Yes", specify the total disturbed acreage. 4.0.1 Total Disturbed Acreage 1289.4	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.0	Does the project involve any of the following? If "Yes", respond to 5.1-5.3. If "No", skip to Question 6.0.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.1	Water Obstruction and Encroachment Projects – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.2	Wetland Impacts – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a wetland?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.3	Floodplain Projects by the commonwealth, a Political Subdivision of the commonwealth or a Public Utility – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a floodplain?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
6.0	Will the project involve discharge of stormwater or wastewater from an industrial activity to a dry swale, surface water, ground water or an existing sanitary sewer system or separate storm water system?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
7.0	Will the project involve the construction and operation of industrial waste treatment facilities?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
8.0	Will the project involve construction of sewage treatment facilities, sanitary sewers, or sewage pumping stations? If "Yes", indicate estimated proposed flow (gal/day). Also, discuss the sanitary sewer pipe sizes and the number of pumping stations/treatment facilities/name of downstream sewage facilities in the <i>Project Description</i> , where applicable. 8.0.1 Estimated Proposed Flow (gal/day)	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
9.0	Will the project involve the subdivision of land, or the generation of 800 gpd or more of sewage on an existing parcel of land or the generation of an additional 400 gpd of sewage on an already-developed parcel, or the generation of 800 gpd or more of industrial wastewater that would be discharged to an existing sanitary sewer system? 9.0.1 Was Act 537 sewage facilities planning submitted and approved by DEP? If "Yes" attach the approval letter. Approval required prior to 105/NPDES approval.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
10.0	Is this project for the beneficial use of biosolids for land application within Pennsylvania? If "Yes" indicate how much (i.e. gallons or dry tons per year). 10.0.1 Gallons Per Year (residential septage) _____ 10.0.2 Dry Tons Per Year (biosolids) _____	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
11.0	Does the project involve construction, modification or removal of a dam? If "Yes", identify the dam. 11.0.1 Dam Name	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No

12.0	Will the project interfere with the flow from, or otherwise impact, a dam? If "Yes", identify the dam.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
12.0.1	Dam Name				
13.0	Will the project involve operations (excluding during the construction period) that produce air emissions (i.e., NOX, VOC, etc.)? If "Yes", identify each type of emission followed by the amount of that emission.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
13.0.1	Enter all types & amounts of emissions; separate each set with semicolons.	The Project operational total Potential to Emit (PTE) in tons per year includes: NOx – 141; CO – 141; SO2 – 5.8; PM10 – 28; PM2.5 – 28; VOC – 13; GHG – 260,800; CH2O – 3.9; Total HAPs – 5.1			
14.0	Does the project include the construction or modification of a drinking water supply to serve 15 or more connections or 25 or more people, at least 60 days out of the year? If "Yes", check all proposed sub-facilities.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
14.0.1	Number of Persons Served				
14.0.2	Number of Employee/Guests				
14.0.3	Number of Connections				
14.0.4	Sub-Fac: Distribution System	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.5	Sub-Fac: Water Treatment Plant	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.6	Sub-Fac: Source	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.7	Sub-Fac: Pump Station	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.8	Sub Fac: Transmission Main	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.9	Sub-Fac: Storage Facility	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
15.0	Will your project include infiltration of storm water or waste water to ground water within one-half mile of a public water supply well, spring or infiltration gallery?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
16.0	Is your project to be served by an existing public water supply? If "Yes", indicate name of supplier and attach letter from supplier stating that it will serve the project.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
16.0.1	Supplier's Name				
16.0.2	Letter of Approval from Supplier is Attached	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
17.0	Will this project involve a new or increased drinking water withdrawal from a stream or other water body? If "Yes", should reference both Water Supply and Watershed Management.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
17.0.1	Stream Name				
18.0	Will the construction or operation of this project involve treatment, storage, reuse, or disposal of waste? If "Yes", indicate what type (i.e., hazardous, municipal (including infectious & chemotherapeutic), residual) and the amount to be treated, stored, re-used or disposed.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
18.0.1	Type & Amount				
19.0	Will your project involve the removal of coal, minerals, etc. as part of any earth disturbance activities?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
20.0	Does your project involve installation of a field constructed underground storage tank? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
20.0.1	Enter all substances & capacity of each; separate each set with semicolons.				
21.0	Does your project involve installation of an aboveground storage tank greater than 21,000 gallons capacity at an existing facility? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
21.0.1	Enter all substances & capacity of each; separate each set with semicolons.				

22.0 Does your project involve installation of a tank greater than 1,100 gallons which will contain a highly hazardous substance as defined in DEP's Regulated Substances List, 2570-BK-DEP2724? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit. Yes No

22.0.1 Enter all substances & capacity of each; separate each set with semicolons.

23.0 Does your project involve installation of a storage tank at a new facility with a total AST capacity greater than 21,000 gallons? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit. Yes No

23.0.1 Enter all substances & capacity of each; separate each set with semicolons.

24.0 Will the intended activity involve the use of a radiation source? Yes No

CERTIFICATION

I certify that I have the authority to submit this application on behalf of the applicant named herein and that the information provided in this application is true and correct to the best of my knowledge and information.

Type or Print Name Amber L. Holly



Environmental Project Manager

Signature

Title

12/10/18

Date


Subject:

FW: FedEx Shipment 773980366579 Delivered



Your package has been delivered


Tracking # 773980366579

Ship date: Mon, 12/17/2018		Delivery date: Tue, 12/18/2018 12:09 pm
Sarah Binckley AECOM CONSHOHOCKEN, PA 19428 US	 Delivered	Jason Harhart Moore Township 2491 Community Drive BATH, PA 18014 US

Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	773980366579
Status:	Delivered: 12/18/2018 12:09 PM Signed for By: P.WERKEISER
Reference:	60414094. 20000363.00035.08.
Signed for by:	P.WERKEISER
Delivery location:	BATH, PA
Delivered to:	Receptionist/Front Desk
Service type:	FedEx Standard Overnight®
Packaging type:	FedEx® Envelope
Number of pieces:	1
Weight:	0.50 lb.
Special handling/Services:	Deliver Weekday
Standard transit:	12/18/2018 by 3:00 pm

 Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 11:11 AM CST on 12/18/2018.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

Standard transit is the date and time the package is scheduled to be delivered by, based on the selected service, destination and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

© 2018 Federal Express Corporation. The content of this message is protected by copyright and trademark laws under U.S. and international law. Review our [privacy policy](#). All rights reserved.

Thank you for your business.



625 West Ridge Pike
Suite E-100
Conshohocken, PA 19428
www.aecom.com
www.urs.com

610 832 3500 tel
610 832 3501 fax

December 17, 2018

Upper Nazareth Township Supervisors
John Soloe
100 Newport Ave
Nazareth, PA 18064

**Subject: Updated Floodplain Management Analysis
PennEast Pipeline
Northampton County, Pennsylvania**

Dear John Soloe,

On February 2, 2016, AECOM notified Upper Nazareth Township that PennEast Pipeline Company, LLC (PennEast) was submitting Pennsylvania Chapter 105 Joint Permit Applications (JPAs) for authorization of wetland and watercourse crossings for the PennEast Pipeline Project (Project). The initial JPAs were submitted in February 2016, and PennEast will be submitting updated JPAs to the Pennsylvania Department of Environmental Protection (PADEP) in December 2018. In accordance with 25 Pennsylvania Code §105.13(e)(I)(vi), PennEast is providing this floodplain management analysis for Project impacts within Upper Nazareth Township.

Project Description

PennEast proposes to construct, install and operate the Project facilities to provide approximately 1.1 million dekatherms per day (MMDth/d) of year-round natural gas transportation services from the Marcellus Shale producing region in northern Pennsylvania to markets in New Jersey, eastern and southeastern Pennsylvania and surrounding states. The Project will include a new pipeline and aboveground facilities that will provide a new source of low cost natural gas and enhance the region's supply diversity. The Project facilities include a 36-inch diameter, 115-mile mainline pipeline extending from Luzerne County, Pennsylvania, to Mercer County, New Jersey. The Project will extend from various receipt point interconnections in the eastern Marcellus region to various delivery point interconnections in the heart of major northeastern natural gas-consuming markets.

Floodplain Management Analysis

The Project will cross Federal Emergency Management Agency (FEMA) 100-year floodplains within Upper Nazareth Township as shown on the attached map. Pipeline construction across watercourses and their floodplains will be performed in accordance with applicable permit conditions, the Federal Energy Regulatory Commission's (FERC's) Wetland and Waterbody Construction and Mitigation Procedures, and PennEast's Erosion and Sediment Control Plan (E&SCP). PennEast proposes to construct the pipeline across watercourses using conventional open-cut, dry crossing methods and trenchless techniques including horizontal directional drilling and conventional bores. Pre-construction contours will be restored after construction is complete; therefore, impacts within floodplains will be temporary in nature. The Project is not anticipated to result in increased flood elevations or encroachment within floodplains. There are no aboveground facilities or proposed permanent access roads sited in FEMA Special Flood Hazard Areas.

PennEast will continue to coordinate with the PADEP and US Army Corps of Engineers to obtain the required federal and state permits for temporary impacts to watercourses. If you have any comments regarding floodplain impacts, please direct comments to the PADEP Northeast Regional Office,



Waterways and Wetlands Program at 2 Public Square, Wilkes-Barre, Pennsylvania 18701-1915 or call 570-826-2511.

Yours sincerely,

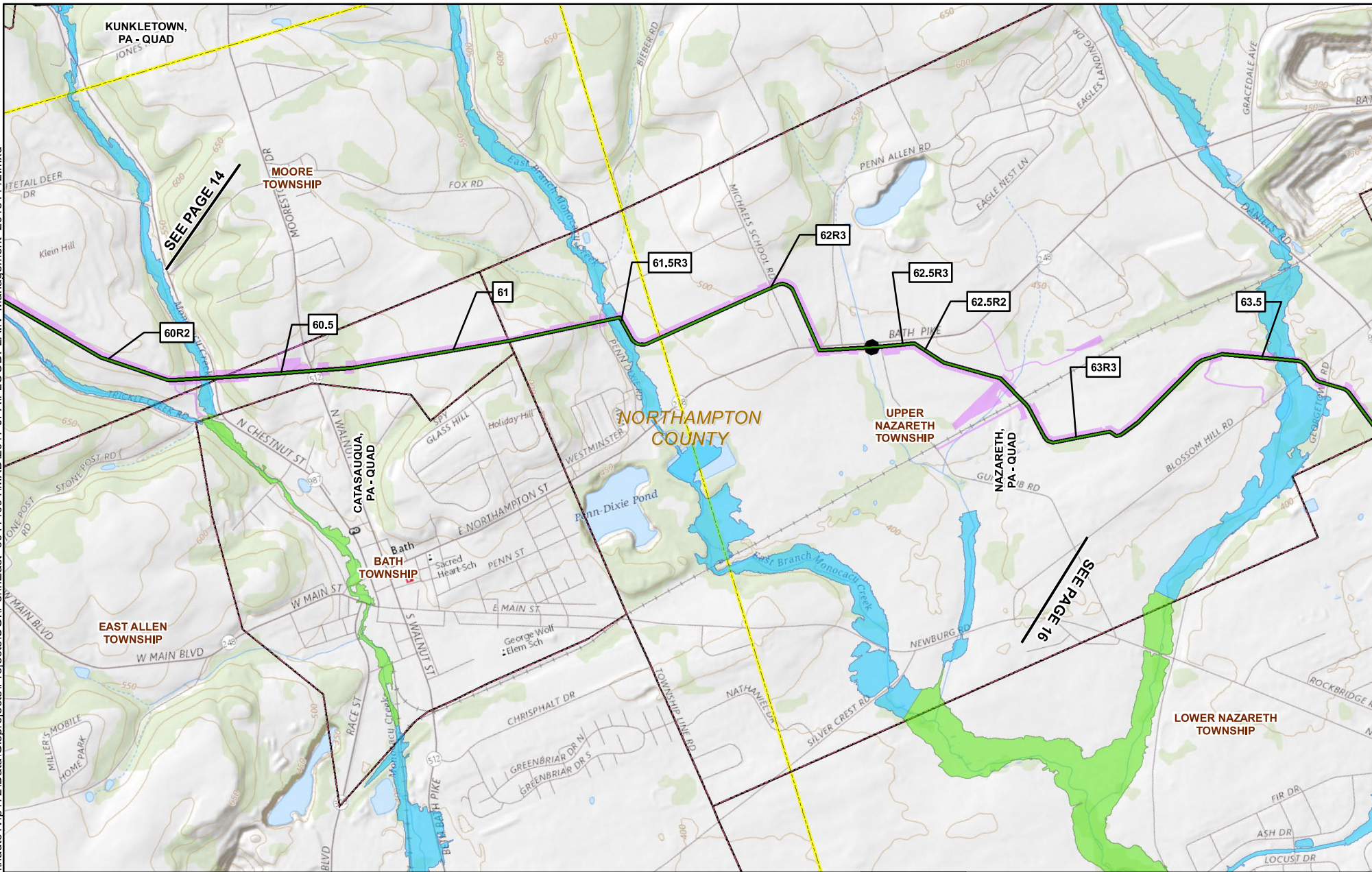
A handwritten signature in black ink that reads "Sarah K. Binckley". The signature is written in a cursive, flowing style.

Sarah K. Binckley
Project Manager, AECOM

cc: Casey Monagan, UGI Energy Services
Amber Holly, UGI Energy Services

Attachment

PennEast Pipeline Project 100-Year Floodplain Map



1	MILEPOST	FEMA 100-YEAR FLOOD ZONE
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)	A
	PROPOSED PERMANENT ABOVE GROUND FACILITY	AE
	PROPOSED HELLERTOWN LATERAL	AH
	PROPOSED PENNEAST PIPELINE CENTERLINE	AO
	PROPOSED CONSTRUCTION LIMIT	
	USGS QUADRANGLE BOUNDARY	
		TOWNSHIP BOUNDARY
		COUNTY BOUNDARY
		STATE BOUNDARY

PENNEAST PIPELINE PROJECT 100-YEAR FLOODPLAIN MAP

**NORTHAMPTON COUNTY,
PENNSYLVANIA**

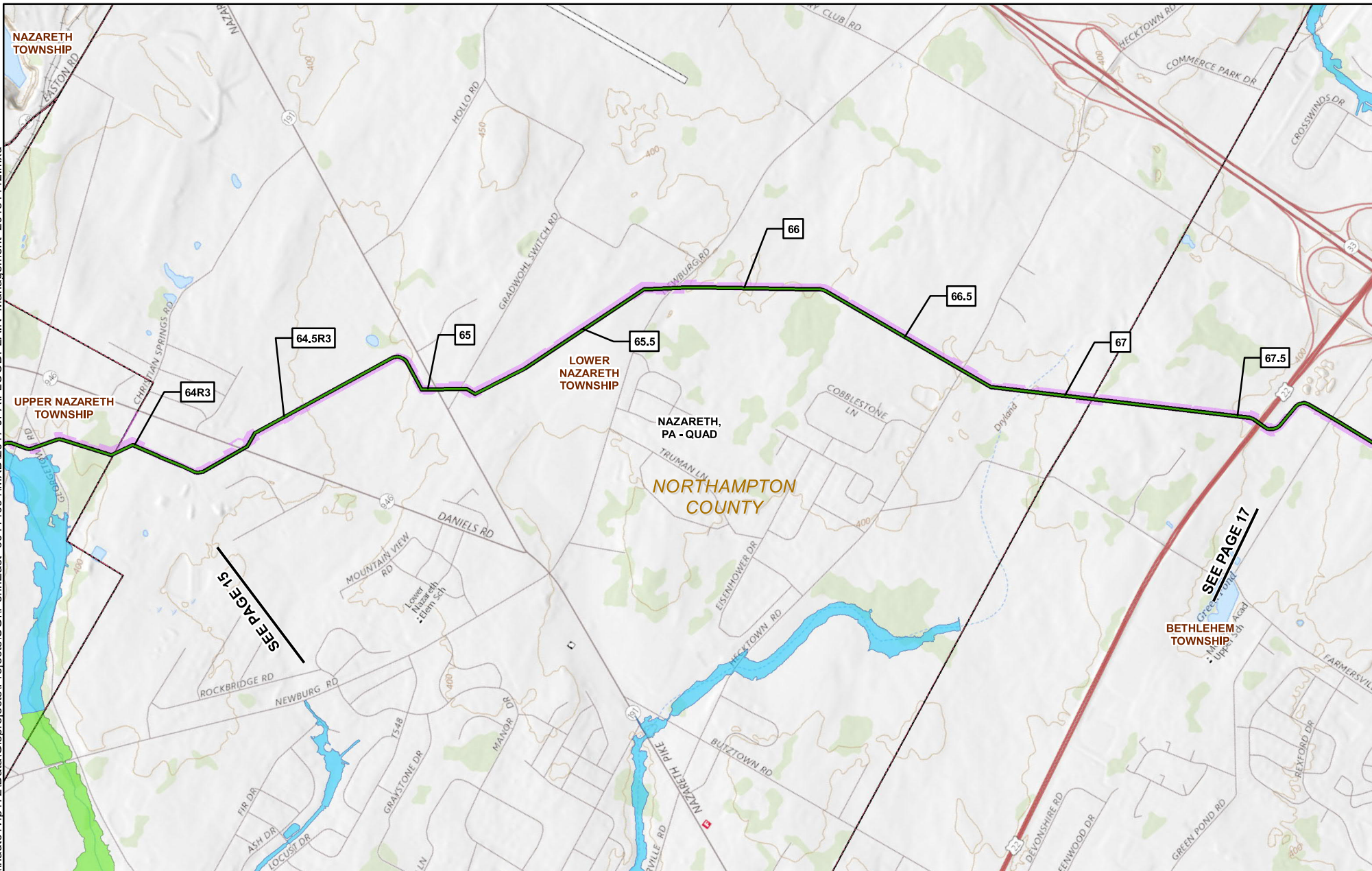


ABSOLUTE SCALE:
1:24,000

REFERENCE SCALE:
1 IN = 2,000 FT



DRAWN BY: KFS
CHECKED BY:
APPROVED BY:
REV. DATE: 11/19/2018
REVISION:
DESC: ISSUED FOR PERMITTING
PAGE: PAGE 15 OF 20



1	MILEPOST	FEMA 100-YEAR FLOOD ZONE
1R	MILEPOST (STATION EQUATION DUE TO REROUTE)	A
	PROPOSED PERMANENT ABOVE GROUND FACILITY	AE
	PROPOSED HELLERTOWN LATERAL	AH
	PROPOSED PENNEAST PIPELINE CENTERLINE	AO
	PROPOSED CONSTRUCTION LIMIT	
	USGS QUADRANGLE BOUNDARY	

PENNEAST PIPELINE PROJECT 100-YEAR FLOODPLAIN MAP

**NORTHAMPTON COUNTY,
PENNSYLVANIA**



ABSOLUTE SCALE:
1:24,000

REFERENCE SCALE:
1 IN = 2,000 FT



DRAWN BY: KFS
CHECKED BY:
APPROVED BY:
REV. DATE: 11/19/2018
REVISION:
DESC: ISSUED FOR PERMITTING
PAGE: PAGE 16 OF 20

Form



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

GENERAL INFORMATION FORM – AUTHORIZATION APPLICATION

Before completing this General Information Form (GIF), read the step-by-step instructions provided in this application package. This version of the General Information Form (GIF) must be completed and returned with any program-specific application being submitted to the Department.

<p style="text-align: center;">Related ID#s (If Known)</p> <p>Client ID# _____ APS ID# _____</p> <p>Site ID# _____ Auth ID# _____</p> <p>Facility ID# _____</p>	<p>DEP USE ONLY</p> <p>Date Received & General Notes</p>
--	---

CLIENT INFORMATION

DEP Client ID#	Client Type / Code LLC				
Organization Name or Registered Fictitious Name PennEast Pipeline Company LLC		Employer ID# (EIN) 47-1573364	Dun & Bradstreet ID#		
Individual Last Name	First Name	MI	Suffix	SSN	
Additional Individual Last Name	First Name	MI	Suffix	SSN	
Mailing Address Line 1 1 Meridian Boulevard		Mailing Address Line 2 Suite 2C01			
Address Last Line – City Wyomissing		State PA	ZIP+4 19610	Country USA	
Client Contact Last Name Holly	First Name Amber	MI	Suffix		
Client Contact Title Environmental Project Manager		Phone 610-373-7999		Ext 1172	
Email Address aholly@ugies.com		FAX			

SITE INFORMATION

DEP Site ID#	Site Name PennEast Pipeline Project				
EPA ID#	Estimated Number of Employees to be Present at Site				
Description of Site					
Proposed natural gas pipeline right-of-way and the associated temporary workspace, compressor station, appurtenant facilities, access roads, staging areas, and wareyards necessary to construct the Project. Additional site description information is provided in JPA Section J - Project Narrative.					
County Name	Municipality	City	Boro	Twp	State
Luzerne, Carbon, Monroe, Northampton, and Bucks	(Luzerne:) Bear Creek Twp, Dallas Twp, Jenkins Twp, Kingston Twp, Plains Twp, West Wyoming Borough, Wyoming Borough, (Carbon:) Kidder Twp, Lower Towamensing Twp, Penn Forest Twp, Towamensing Twp, (Monroe:) Eldred Twp, (Northampton:) Bethlehem Twp, East Allen Twp, Easton City, Lower Nazareth Twp, Lower Saucon Twp, Moore Twp, Upper Nazareth Twp, Williams Twp, (Bucks:) Durham Twp, Riegelsville Borough	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	PA
County Name	Municipality	City	Boro	Twp	State
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Site Location Line 1		Site Location Line 2			
The PA portion of the PennEast Mainline Pipeline begins in Dallas Twp, Luzerne County and extends to Durham		The Hellertown Lateral is located in Lower Saucon Twp, Northampton County. Additional site location information			

Twp, Bucks County. Additional site location information is provided in JPA Section J - Project Narrative.

Site Location Last Line – City State ZIP+4

Detailed Written Directions to Site

From Wilkes-Barre: head north on PA-309. At the intersection with State Route 415, bear right to continue on State Route 309/Tunkhannock Highway. After 1 mile, turn right on Upper Demunds Road. Immediately turn right on Hildebrandt Road. After 0.7 mile, turn right onto an unnamed road and follow 0.25 mile to the Wyoming Interconnect and the start of the PennEast Mainline. The entry and exit location for each county crossed by the Project is provided in JPA Section J - Project Narrative.

Site Contact Last Name Holly		First Name Amber	MI	Suffix
Site Contact Title Environmental Project Manager		Site Contact Firm UGI Energy Services, LLC		
Mailing Address Line 1 1 Meridian Boulevard		Mailing Address Line 2 Suite 2C01		
Mailing Address Last Line – City Wyomissing		State PA	ZIP+4 19610	
Phone 610-373-7999	Ext 1172	FAX	Email Address aholly@ugies.com	
NAICS Codes (Two- & Three-Digit Codes – List All That Apply) 22, 23, 48			6-Digit Code (Optional) 221210, 237120, 486210	
Client to Site Relationship OWNOP				

FACILITY INFORMATION

Modification of Existing Facility

1. Will this project modify an existing facility, system, or activity?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
2. Will this project involve an addition to an existing facility, system, or activity?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

If "Yes", check all relevant facility types and provide DEP facility identification numbers below.

Facility Type	DEP Fac ID#	Facility Type	DEP Fac ID#
<input type="checkbox"/> Air Emission Plant	_____	<input type="checkbox"/> Industrial Minerals Mining Operation	_____
<input type="checkbox"/> Beneficial Use (water)	_____	<input type="checkbox"/> Laboratory Location	_____
<input type="checkbox"/> Blasting Operation	_____	<input type="checkbox"/> Land Recycling Cleanup Location	_____
<input type="checkbox"/> Captive Hazardous Waste Operation	_____	<input type="checkbox"/> Mine DrainagETrmt/LandRecyProjLocation	_____
<input type="checkbox"/> Coal Ash Beneficial Use Operation	_____	<input type="checkbox"/> Municipal Waste Operation	_____
<input type="checkbox"/> Coal Mining Operation	_____	<input type="checkbox"/> Oil & Gas Encroachment Location	_____
<input type="checkbox"/> Coal Pillar Location	_____	<input type="checkbox"/> Oil & Gas Location	_____
<input type="checkbox"/> Commercial Hazardous Waste Operation	_____	<input type="checkbox"/> Oil & Gas Water Poll Control Facility	_____
<input type="checkbox"/> Dam Location	_____	<input type="checkbox"/> Oil & Gas Wastewater Storage Impoundment	_____
<input type="checkbox"/> Deep Mine Safety Operation -Anthracite	_____	<input type="checkbox"/> Public Water Supply System	_____
<input type="checkbox"/> Deep Mine Safety Operation -Bituminous	_____	<input type="checkbox"/> Radiation Facility	_____
<input type="checkbox"/> Deep Mine Safety Operation -Ind Minerals	_____	<input type="checkbox"/> Residual Waste Operation	_____
<input type="checkbox"/> Encroachment Location (water, wetland)	_____	<input type="checkbox"/> Storage Tank Location	_____
<input type="checkbox"/> Erosion & Sediment Control Facility	_____	<input type="checkbox"/> Water Pollution Control Facility	_____
<input type="checkbox"/> Explosive Storage Location	_____	<input type="checkbox"/> Water Resource	_____
		<input type="checkbox"/> Other:	_____

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
Station 0+00	41	20	48	75	56	43
Horizontal Accuracy Measure	Feet			--or-- Meters		
Horizontal Reference Datum Code	<input type="checkbox"/> North American Datum of 1927 <input type="checkbox"/> North American Datum of 1983 <input checked="" type="checkbox"/> World Geodetic System of 1984					
Horizontal Collection Method Code	GISDR					
Reference Point Code	CENTER					
Altitude	Feet 1280			--or-- Meters		
Altitude Datum Name	<input type="checkbox"/> The National Geodetic Vertical Datum of 1929 <input checked="" type="checkbox"/> The North American Vertical Datum of 1988 (NAVD88)					

Altitude (Vertical) Location Datum Collection Method Code	TOPO	
Geometric Type Code	POINT	
Data Collection Date	12/08/2018	
Source Map Scale Number	1	Inch(es) = 2000 Feet
	--or--	Centimeter(s) = Meters

PROJECT INFORMATION

Project Name
PennEast Pipeline Project

Project Description
See Project Description in JPA Section J

Project Consultant Last Name	First Name	MI	Suffix
Binckley	Sarah	K	

Project Consultant Title **Consulting Firm**
Project Manager AECOM

Mailing Address Line 1	Mailing Address Line 2
625 West Ridge Pike	Suite E-100
Address Last Line – City	State ZIP+4
Conshohocken	PA 19428

Phone	Ext	FAX	Email Address
610-832-2713		610-832-3501	sarah.binckley@aecom.com

Time Schedules	Project Milestone (Optional)
09/2015	PennEast submitted FERC Application for Certificate of Public Convenience and Necessity
02/2016 - 03/2016	PennEast submitted PADEP Joint Permit Applications and ESCGP-2 applications
01/2018	Received FERC Certificate of Public Convenience and Necessity
12/2018	PennEast submits revised Joint Permit Applications and ESCGP-3 applications

- Have you informed the surrounding community and addressed any concerns prior to submitting the application to the Department? Yes No
- Is your project funded by state or federal grants? Yes No
Note: If "Yes", specify what aspect of the project is related to the grant and provide the grant source, contact person and grant expiration date.
 Aspect of Project Related to Grant _____
 Grant Source: _____
 Grant Contact Person: _____
 Grant Expiration Date: _____
- Is this application for an authorization on Appendix A of the Land Use Policy? (For referenced list, see Appendix A of the Land Use Policy attached to GIF instructions) Yes No
Note: If "No" to Question 3, the application is not subject to the Land Use Policy.
 If "Yes" to Question 3, the application is subject to this policy and the Applicant should answer the additional questions in the Land Use Information section.

LAND USE INFORMATION

Note: Applicants are encouraged to submit copies of local land use approvals or other evidence of compliance with local comprehensive plans and zoning ordinances.

- Is there an adopted county or multi-county comprehensive plan? Yes No
- Is there an adopted municipal or multi-municipal comprehensive plan? Yes No
- Is there an adopted county-wide zoning ordinance, municipal zoning ordinance or joint municipal zoning ordinance? Yes No
Note: If the Applicant answers "No" to either Questions 1, 2 or 3, the provisions of the PA MPC are not applicable and the Applicant does not need to respond to questions 4 and 5 below.
 If the Applicant answers "Yes" to questions 1, 2 and 3, the Applicant should respond to questions 4 and 5 below.
- Does the proposed project meet the provisions of the zoning ordinance or does the proposed project have zoning approval? If zoning approval has been received, attach documentation. Yes No
- Have you attached Municipal and County Land Use Letters for the project? Yes No

COORDINATION INFORMATION

Note: The PA Historical and Museum Commission must be notified of proposed projects in accordance with DEP Technical Guidance Document 012-0700-001 and the accompanying Cultural Resource Notice Form.

If the activity will be a mining project (i.e., mining of coal or industrial minerals, coal refuse disposal and/or the operation of a coal or industrial minerals preparation/processing facility), respond to questions 1.0 through 2.5 below.

If the activity will not be a mining project, skip questions 1.0 through 2.5 and begin with question 3.0.

1.0	Is this a coal mining project? If "Yes", respond to 1.1-1.6. If "No", skip to Question 2.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
1.1	Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be equal to or greater than 200 tons/day?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.2	Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be greater than 50,000 tons/year?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.3	Will this coal mining project involve coal preparation/ processing activities in which thermal coal dryers or pneumatic coal cleaners will be used?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.4	For this coal mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.5	Will this coal mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
1.6	Will this coal mining project involve underground coal mining to be conducted within 500 feet of an oil or gas well?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.0	Is this a non-coal (industrial minerals) mining project? If "Yes", respond to 2.1-2.6. If "No", skip to Question 3.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
2.1	Will this non-coal (industrial minerals) mining project involve the crushing and screening of non-coal minerals other than sand and gravel?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.2	Will this non-coal (industrial minerals) mining project involve the crushing and/or screening of sand and gravel with the exception of wet sand and gravel operations (screening only) and dry sand and gravel operations with a capacity of less than 150 tons/hour of unconsolidated materials?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.3	Will this non-coal (industrial minerals) mining project involve the construction, operation and/or modification of a portable non-metallic (i.e., non-coal) minerals processing plant under the authority of the General Permit for Portable Non-metallic Mineral Processing Plants (i.e., BAQ-PGPA/GP-3)?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.4	For this non-coal (industrial minerals) mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
2.5	Will this non-coal (industrial minerals) mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No

3.0	Will your project, activity, or authorization have anything to do with a well related to oil or gas production, have construction within 200 feet of, affect an oil or gas well, involve the waste from such a well, or string power lines above an oil or gas well? If "Yes", respond to 3.1-3.3. If "No", skip to Question 4.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
3.1	Does the oil- or gas-related project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water (including wetlands)?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
3.2	Will the oil- or gas-related project involve discharge of industrial wastewater or stormwater to a dry swale, surface water, ground water or an existing sanitary sewer system or storm water system? If "Yes", discuss in <i>Project Description</i> .	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
3.3	Will the oil- or gas-related project involve the construction and operation of industrial waste treatment facilities?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
4.0	Will the project involve a construction activity that results in earth disturbance? If "Yes", specify the total disturbed acreage. 4.0.1 Total Disturbed Acreage 1289.4	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.0	Does the project involve any of the following? If "Yes", respond to 5.1-5.3. If "No", skip to Question 6.0.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.1	Water Obstruction and Encroachment Projects – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.2	Wetland Impacts – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a wetland?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.3	Floodplain Projects by the commonwealth, a Political Subdivision of the commonwealth or a Public Utility – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a floodplain?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
6.0	Will the project involve discharge of stormwater or wastewater from an industrial activity to a dry swale, surface water, ground water or an existing sanitary sewer system or separate storm water system?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
7.0	Will the project involve the construction and operation of industrial waste treatment facilities?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
8.0	Will the project involve construction of sewage treatment facilities, sanitary sewers, or sewage pumping stations? If "Yes", indicate estimated proposed flow (gal/day). Also, discuss the sanitary sewer pipe sizes and the number of pumping stations/treatment facilities/name of downstream sewage facilities in the <i>Project Description</i> , where applicable. 8.0.1 Estimated Proposed Flow (gal/day)	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
9.0	Will the project involve the subdivision of land, or the generation of 800 gpd or more of sewage on an existing parcel of land or the generation of an additional 400 gpd of sewage on an already-developed parcel, or the generation of 800 gpd or more of industrial wastewater that would be discharged to an existing sanitary sewer system? 9.0.1 Was Act 537 sewage facilities planning submitted and approved by DEP? If "Yes" attach the approval letter. Approval required prior to 105/NPDES approval.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
10.0	Is this project for the beneficial use of biosolids for land application within Pennsylvania? If "Yes" indicate how much (i.e. gallons or dry tons per year). 10.0.1 Gallons Per Year (residential septage) _____ 10.0.2 Dry Tons Per Year (biosolids) _____	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
11.0	Does the project involve construction, modification or removal of a dam? If "Yes", identify the dam. 11.0.1 Dam Name	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No

12.0	Will the project interfere with the flow from, or otherwise impact, a dam? If "Yes", identify the dam.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
12.0.1	Dam Name				
13.0	Will the project involve operations (excluding during the construction period) that produce air emissions (i.e., NOX, VOC, etc.)? If "Yes", identify each type of emission followed by the amount of that emission.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
13.0.1	Enter all types & amounts of emissions; separate each set with semicolons.	The Project operational total Potential to Emit (PTE) in tons per year includes: NOx – 141; CO – 141; SO2 – 5.8; PM10 – 28; PM2.5 – 28; VOC – 13; GHG – 260,800; CH2O – 3.9; Total HAPs – 5.1			
14.0	Does the project include the construction or modification of a drinking water supply to serve 15 or more connections or 25 or more people, at least 60 days out of the year? If "Yes", check all proposed sub-facilities.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
14.0.1	Number of Persons Served				
14.0.2	Number of Employee/Guests				
14.0.3	Number of Connections				
14.0.4	Sub-Fac: Distribution System	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.5	Sub-Fac: Water Treatment Plant	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.6	Sub-Fac: Source	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.7	Sub-Fac: Pump Station	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.8	Sub Fac: Transmission Main	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.9	Sub-Fac: Storage Facility	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
15.0	Will your project include infiltration of storm water or waste water to ground water within one-half mile of a public water supply well, spring or infiltration gallery?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
16.0	Is your project to be served by an existing public water supply? If "Yes", indicate name of supplier and attach letter from supplier stating that it will serve the project.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
16.0.1	Supplier's Name				
16.0.2	Letter of Approval from Supplier is Attached	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
17.0	Will this project involve a new or increased drinking water withdrawal from a stream or other water body? If "Yes", should reference both Water Supply and Watershed Management.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
17.0.1	Stream Name				
18.0	Will the construction or operation of this project involve treatment, storage, reuse, or disposal of waste? If "Yes", indicate what type (i.e., hazardous, municipal (including infectious & chemotherapeutic), residual) and the amount to be treated, stored, re-used or disposed.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
18.0.1	Type & Amount				
19.0	Will your project involve the removal of coal, minerals, etc. as part of any earth disturbance activities?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
20.0	Does your project involve installation of a field constructed underground storage tank? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
20.0.1	Enter all substances & capacity of each; separate each set with semicolons.				
21.0	Does your project involve installation of an aboveground storage tank greater than 21,000 gallons capacity at an existing facility? If "Yes", list each Substance & its Capacity. Note: Applicant may need a Storage Tank Site Specific Installation Permit.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
21.0.1	Enter all substances & capacity of each; separate each set with semicolons.				

22.0 Does your project involve installation of a tank greater than 1,100 gallons which will contain a highly hazardous substance as defined in DEP's Regulated Substances List, 2570-BK-DEP2724? If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. Yes No

22.0.1 Enter all substances & capacity of each; separate each set with semicolons.

23.0 Does your project involve installation of a storage tank at a new facility with a total AST capacity greater than 21,000 gallons? If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. Yes No

23.0.1 Enter all substances & capacity of each; separate each set with semicolons.

24.0 Will the intended activity involve the use of a radiation source? Yes No

CERTIFICATION

I certify that I have the authority to submit this application on behalf of the applicant named herein and that the information provided in this application is true and correct to the best of my knowledge and information.

Type or Print Name Amber L. Holly



Environmental Project Manager

Signature

Title

12/10/18

Date


Subject:

FW: FedEx Shipment 773980550358 Delivered



Your package has been delivered


Tracking # 773980550358

Ship date: Mon, 12/17/2018		Delivery date: Tue, 12/18/2018 10:33 am
Sarah Binckley AECOM CONSHOHOCKEN, PA 19428 US	 Delivered	John Soloe Upper Nazareth Township 100 Newport Avenue NAZARETH, PA 18064 US

Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	773980550358
Status:	Delivered: 12/18/2018 10:33 AM Signed for By: K.MATARELLI
Reference:	60414094. 20000363.00035.08.
Signed for by:	K.MATARELLI
Delivery location:	NAZARETH, PA
Delivered to:	Receptionist/Front Desk
Service type:	FedEx Standard Overnight®
Packaging type:	FedEx® Envelope
Number of pieces:	1
Weight:	0.50 lb.
Special handling/Services:	Deliver Weekday
Standard transit:	12/18/2018 by 3:00 pm

 Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 9:36 AM CST on 12/18/2018.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

Standard transit is the date and time the package is scheduled to be delivered by, based on the selected service, destination and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

© 2018 Federal Express Corporation. The content of this message is protected by copyright and trademark laws under U.S. and international law. Review our [privacy policy](#). All rights reserved.

Thank you for your business.

JPA Section Q - Northampton County
Risk Assessment

Q – Risk Assessment

This section is not applicable to the Project. The stormwater management analysis and floodplain management analysis did not indicate any increases in peak runoff rates or flood elevations.

JPA Section R - Northampton County

Professional Engineer Seal and Certification

Phase 1 of the PennEast Pipeline Project

Joint Permit Application – Northampton County

I, Michael DeNichilo, do hereby certify pursuant to the penalties of 18 Pa. C.S.A., Section 4904 to the best of my knowledge, information and belief, that the information contained in the accompanying plans, specifications and reports has been prepared in accordance with accepted engineering practice, is true and correct, and is in conformance with Chapter 105 of the rules and regulations of the Department of Environmental Protection.



Applicable Drawings / Reports:

- Soil Erosion & Sediment Control for Pipeline & Facilities - Drawings / Narrative
- Site Restoration for Pipeline - Drawings / Narrative
- Site-Specific Wetland and Watercourse Crossing Plans

Phase 1 of the PennEast Pipeline Project

Joint Permit Application – Northampton County

I, W. Michael Clark, do hereby certify pursuant to the penalties of 18 Pa. C.S.A., Section 4904 to the best of my knowledge, information and belief, that the information contained in the accompanying plans, specifications and reports has been prepared in accordance with accepted engineering practice, is true and correct, and is in conformance with Chapter 105 of the rules and regulations of the Department of Environmental Protection.



Applicable Drawings / Reports:

Post Construction Stormwater Management Report / Drawings
Offsite Discharge Analysis Reports / Drawings

For the following Facilities:

Church Road Interconnects
Mainline Block Valve (MLV) 6
Mainline Block Valve (MLV) 7

JPA Section S - Northampton County
Alternatives Analysis



PennEast Pipeline Company, LLC

PHASE 1 OF THE PENNEAST PIPELINE PROJECT

**S – ALTERNATIVES ANALYSIS
NORTHAMPTON COUNTY**

REVISED SEPTEMBER 2020

Submitted by:

PennEast Pipeline Company, LLC



TABLE OF CONTENTS

1.0	Introduction	6
2.0	Purpose and Need	6
3.0	Facility Description and Locations	7
3.1	Pipeline Facilities	7
3.2	Aboveground Facilities	7
4.0	Applicable Regulations	7
5.0	No-Action Alternative.....	8
6.0	Energy Conservation.....	8
7.0	Energy Alternatives	9
8.0	System Alternatives	10
8.1	Transco Leidy Line Loop	10
8.2	Columbia Gas	11
8.3	Texas Eastern.....	12
8.4	Adelphia	12
8.5	Other System Alternatives.....	12
9.0	Key Route Alternatives and Pipeline Deviations.....	12
9.1	Key Route Alternatives	13
9.1.1	Original Route.....	14
9.1.2	Alternative 1 to Original Route with Elizabethtown Gas (ETG) Spur	14
9.1.3	Alternative 2 to Original Route with NJ Loop (Initial Preferred Route)	15
9.1.4	November 2014 Preferred Route.....	15
9.1.5	January 2015 Preferred Route.....	16
9.1.6	March 2015 Preferred Route.....	16
9.1.7	September 2015 Preferred Route	16
9.1.8	September 2016 Preferred Route	17
9.1.9	Revised PA Route	17
9.1.10	Phase 1 Route.....	18
9.2	Pipeline Deviations	18
9.3	Aboveground Facilities – Alternative Sites	20
9.3.1	Mainline Valves	20
9.3.2	Church Road Interconnects	20
10.0	Avoidance Measures	20
11.0	Minimization Measures.....	21
11.1	Construction Methods	21
11.1.1	Trenchless Construction Methods	21
11.1.2	Conventional Open-Cut Construction Methods	24
11.2	Best Management Practices	28
11.2.1	Wetland Crossing BMPs.....	28
11.2.2	Wetland Restoration	29
11.2.3	Watercourse Crossing BMPs	29
11.2.4	Watercourse Restoration.....	30
11.2.5	Wetland and Riparian Buffer Reforestation.....	31
11.2.6	Operation and Maintenance	31
12.0	Trenchless Feasibility Analyses	31



12.1	Blue Mountain Wetland Complex (MP 52.7R3 – 52.9R3)	32
12.2	Hokendauqua Creek (MP 55.9)	33
13.0	Alternatives Summary	33
14.0	References	35

TABLES

Table NO-S-1	Data Resources for Desktop Analysis	13
Table NO-S-2	Summary of Pipeline Deviations in Northampton County, PA	19
Table NO-S-3	Wetlands and Watercourses Avoided Through Workspace Changes in Northampton County	21
Table NO-S-4	Summary of Primary Crossing Methods for Select Sensitive Areas in Northampton County	32

APPENDICES

NO-S-1	Key Route Alternative Figures
NO-S-2	Route Deviation Figures
NO-S-3	Aboveground Facility Alternative Figures
NO-S-4	Site-Specific Alternatives Analysis Tables
NO-S-5	<i>Susquehanna River Crossing Alternatives Analysis (Not Applicable to Northampton County)</i>
NO-S-6	<i>HDD Design and GDR Reports (Not Applicable to Northampton County)</i>

Acronyms and Abbreviations

°F	degrees Fahrenheit
Adelphia	Adelphia Gateway, LLC
ATWS	additional temporary workspace
BMPs	Best Management Practices
BWA	Bethlehem Water Authority
Columbia	Columbia Gas Transmission, LLC
Dth/day	dekatherms per day
EA	Environmental Assessment
EI	Environmental Inspector
EPA	U.S. Environmental Protection Agency
E&SCP	Erosion and Sediment Control Plan
ETG	Elizabethtown Gas
EV	Exceptional Value
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FERC's Plan	Upland Erosion Control, Revegetation, and Maintenance Plan
FERC's Procedures	Wetland and Waterbody Construction and Mitigation Procedures
GHG	Greenhouse Gas
GIS	geographic information system
GNIS	Geographic Names Information System
HDD	horizontal directional drilling
hp	horsepower
HQ	High-Quality
ISO	International Standards Organization
JPA	Joint Permit Application
LNG	Liquefied Natural Gas
MLV	mainline valve
MP	milepost
N/A	not applicable
NJ	New Jersey
NHD	National Hydrography Dataset
NPS	National Park Service
NRHP	National Register of Historic Places
NRIS	National Register Information System
NWI	National Wetland Inventory
PA	Pennsylvania
PADCNR	Pennsylvania Department of Conservation and Natural Resources
PADEP	Pennsylvania Department of Environmental Protection
PaGS	Bureau of Topographic and Geologic Survey
PaGWIS	Pennsylvania Groundwater Information System
PEM	palustrine emergent
PennEast	PennEast Pipeline Company, LLC
PFBC	Pennsylvania Fish and Boat Commission
PFO	palustrine forested
PGC	Pennsylvania Game Commission



PNHP	Pennsylvania Natural Heritage Program
Project	Phase 1 of the PennEast Pipeline Project
PSS	palustrine scrub-shrub
PSU	Pennsylvania State University
ROW	right-of-way
RQD	rock quality designation
SGL	State Game Land
SR	State Route
Texas Eastern	Texas Eastern Transmission, LP
TGD	Technical Guidance Document
Transco	Transcontinental Gas Pipe Line Company, LLC
UGIES	UGI Energy Services, LLC
U.S.	United States
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WPC	Western Pennsylvania Conservancy

1.0 Introduction

In accordance with the requirements contained within the Pennsylvania Department of Environmental Protection's (PADEP) Comprehensive Environmental Assessment of Proposed Project Impacts for Chapter 105 Water Obstruction and Encroachment Permit Applications Technical Guidance Document (TGD) (Document No. 310-2137-006, 12/16/2017) and the assessment criteria detailed in Module 3 of the Environmental Assessment (EA) Form (EA Form) Instructions (Document No. 3150-PM-BWEW0017, Revised 6/2017), PennEast Pipeline Company, LLC (PennEast) has prepared this Alternatives Analysis to support its Joint Permit Application (JPA) for Phase 1 of the PennEast Pipeline Project (Project). PennEast analyzed practicable alternatives to the proposed Project, including route and aboveground site alternatives that avoid and minimize adverse environmental effects while still satisfying customer needs. Where temporary impacts are unavoidable, PennEast will implement the specialized mitigation measures and best management practices (BMPs) discussed in this analysis. Permanent impacts will be mitigated through the implementation of an off-site compensatory mitigation plan that is provided in JPA Appendix L-4B.

2.0 Purpose and Need

PennEast proposes to construct, install, and operate the Project facilities to provide approximately 650,000 dekatherms per day (Dth/Day) of year-round transportation service from northern Pennsylvania to markets directly in eastern and southeastern Pennsylvania, and indirectly in surrounding states via existing downstream pipeline networks.

The Project facilities include a 36-inch diameter, 68-mile mainline pipeline, extending from Luzerne County to Northampton County, Pennsylvania. The Project will extend from various receipt point interconnections in the eastern Marcellus region including interconnections with: Transcontinental Gas Pipe Line Company, LLC (Transco) and gathering systems operated by Williams Partners L.P., Energy Transfer Partners, L.P. (formerly Regency Energy Partners, LP), and UGI Energy Services, LLC (UGIES), all in Luzerne County, Pennsylvania, to various delivery point interconnections in the heart of major northeastern natural gas-consuming markets, including interconnections with UGI Central Penn Gas, Inc. in Carbon County, Pennsylvania and Columbia Gas Transmission, LLC (Columbia) and Adelphia Gateway, LLC (Adelphia) in Northampton County, Pennsylvania.

The Project was developed in response to market demands in New Jersey and Pennsylvania, and interest from shippers that require transportation capacity to accommodate increased demand and greater reliability of natural gas in the region. The Project will include a new pipeline and aboveground facilities that will provide a new source of natural gas supply from the Marcellus Shale producing region to Pennsylvania and surrounding states, enhancing the region's supply diversity. The Project is designed to serve markets in the region with firm, reliable access to the Marcellus supplies versus the traditional, more costly Gulf Coast regional supplies and pipeline pathways. An additional supply of natural gas to the region will provide a benefit to consumers, utilities, and electric generators by providing enhanced competition among suppliers and pipeline transportation providers. The Project will satisfy the needs of shippers seeking (i) additional supply flexibility, diversity and reliability; (ii) liquid points for trading in locally produced gas from the Marcellus Shale and the Utica Shale; (iii) direct access to premium markets in the northeast and mid-Atlantic regions; (iv) the ability to capture pricing differentials between the various interconnected market pipelines; (iv) enhanced natural gas transportation system reliability to the region with modern, state-of-the-art facilities and (v) firm access to currently the most affordable long-lived dry gas reserves. The Project

will provide shippers additional opportunities to buy and sell supplies and to transport natural gas to where it is needed and valued most. The Project also offers shippers a reliable, short-haul transportation option for direct access to Marcellus Shale natural gas supplies absent several risks associated with long-haul pipelines originating and traversing other regions of the country. A more detailed Purpose and Need for the Project is provided in JPA Section J.

3.0 Facility Description and Locations

3.1 Pipeline Facilities

The Project's facilities include approximately 68 miles of 36-inch diameter new mainline pipeline and the 4-inch diameter Blue Mountain Lateral (Project Location Map provided in JPA Section I). The Project mainline route pipeline will be an approximately 68-mile long new pipeline starting in Luzerne County and extending to Northampton County, Pennsylvania. Counties traversed include Luzerne, Carbon, Monroe, and Northampton. Approximately 28 miles of the mainline pipeline, from milepost (MP) 23.0 to 50.7R3, is proposed in Carbon County, Pennsylvania. The 4-inch diameter Blue Mountain Lateral will be approximately 0.5 mile of new pipeline in Carbon County.

3.2 Aboveground Facilities

The proposed Project includes construction of a new compressor station facility identified as the Kidder Compressor Station, which is located on approximately 74-acres of an undeveloped forested site (of which approximately 20 acres will actually be developed) south of MP 26.8R2 in Kidder Township, Carbon County, Pennsylvania. The proposed Kidder Compressor Station will serve the entire Project, providing sufficient throughput with an aggregate of approximately 31,800 International Standards Organization (ISO) horsepower (hp) of compression. The proposed facility components at the Kidder Compressor Station include two gas turbine-driven Solar Mars 100 units rated at 15,900 hp each under ISO conditions (31,800 total ISO hp).

The construction of various associated aboveground facilities including interconnects, launchers, receivers, and mainline valves (MLVs) are proposed to support the pipeline system. Within Northampton County, PennEast proposes to construct the Church Road Interconnects and two MLVs. The locations of these aboveground facilities are shown on the Project Location Map in JPA Section I.

4.0 Applicable Regulations

This Alternatives Analysis specifically discusses the measures undertaken to avoid and minimize the overall project's impact on waters of the Commonwealth to the maximum extent practicable in accordance with 25 Pa. Code §105.18(a) and (b), depending upon whether the wetland is classified as an exceptional value wetland or an "other" wetland, respectively. Where avoidance was not practicable, compensatory mitigation for permanent and temporal wetland impacts will be completed at approved off-site locations.

5.0 No-Action Alternative

The no-action alternative would involve not constructing the Project, which would not meet the Project shippers' need for the firm transportation capacity as reflected in their commitments in precedent agreements. Accordingly, this option would have adverse consequences on the markets they serve.

The no-action alternative would completely avoid temporary and permanent environmental impacts associated with the Project. However, the Project shippers and local distribution companies would likely pursue alternate natural gas transportation projects that could potentially result in similar environmental impacts. Potential examples of these impacts include the construction of additional or greenfield natural gas pipeline facilities in other locations; dependence on alternate higher emission fuel sources, such as coal or oil; and increased demand for already limited electrical resources.

Given the Project shippers' need for additional pipeline capacity, the potential benefit to regional economic growth from the proposed Project, and the potential for significant increase in regional air emissions or similar or greater environmental impacts resulting from an alternate natural gas transportation project if the Project was not constructed, no further analysis of this alternative was conducted. Therefore, the no-action alternative is not considered a viable alternative to the proposed Project, because it would not accomplish the stated Project purpose and need to provide the volumes of natural gas transportation services to the expanding mid-Atlantic market in an efficient, safe, reliable, and environmentally sound manner.

6.0 Energy Conservation

The energy conservation alternative discussed in this section will not meet the needs of the Project shippers and, therefore, is not preferable to the proposed action. However, together with an increased supply of natural gas, energy conservation will continue to contribute to meeting the overall future energy needs of the marketplace.

The use of the energy conservation alternative for meeting the demands of PennEast's customers includes the following potential results:

- Potential for improvements in energy conservation in the residential, commercial, and industrial sectors beyond the current energy conservation measures already being practiced; and
- Potential for increasing the efficiency of the existing natural gas transmission systems through system optimization, which includes the use of load management techniques at both the end-use consumer and utility level, and the identification and elimination of bottlenecks in the existing gas transmission system that decrease the effective capacity of the system.

Energy conservation continues to be encouraged in the residential, commercial, and industrial sectors. However, natural gas continues to be considered the preferred non-renewable fuel because of its inherent clean-burning properties and, because it is produced and abundant in North America, it reduces the Country's reliance on foreign-produced oil. The implementation of air quality legislation enhances fuel conservation in numerous energy use sectors. In many cases, legislation encourages the use of natural gas over other more environmentally taxing fuels, such as oil and coal. Increases in population, and commercial and industrial uses of natural gas have contributed to the increased demand for natural gas.

The Project will help to increase the efficiency of the current natural gas transmission system by reducing bottlenecks in the system. Furthermore, this is primarily a market-driven project that is designed to provide a pipeline transportation solution to Marcellus Shale production. Programs designed to encourage fuel conservation are unlikely to eliminate the need to construct a new pipeline infrastructure to serve this emerging production area.

In summary, natural gas demand in the marketplace is continuing to grow despite programs designed to encourage fuel conservation. Conservation alone will not address the growing demand for natural gas in the relevant markets in the Project timeframe. Fuel conservation should continue to be an ongoing alternative used in concert with the development of additional, more efficient natural gas transportation and distribution systems. The modifications proposed by the Project can be considered steps to accomplishing this part of the energy conservation alternative.

7.0 Energy Alternatives

The alternative energy sources discussed in this section would not meet the Project needs and, therefore, would not be preferable to the proposed action. Alternative energy sources used together with natural gas could contribute to meeting the overall future energy needs of the marketplace.

Potential alternative energy sources include coal, oil, nuclear energy, liquefied natural gas (LNG), and electricity generated from these sources, as well as electricity generated from renewable sources such as solar, wind, and geothermal energy. Coal, although an available option, does not burn as cleanly as natural gas, and its use may contribute to the formation/pollution associated with acid rain unless costly air pollution controls are applied to coal-burning power plants. Area states have stringent air quality regulations and thresholds for stack emissions, fugitive emissions, and particulate handling that likely preclude coal as a viable option.

A large amount of oil consumed in the United States is produced and purchased from overseas sources. Therefore, the use of additional foreign oil supplies to meet future energy demands in the expanding mid-Atlantic markets could further increase the reliance on overseas crude petroleum and petroleum products. This could subsequently increase the potential economic and national security risks in the event of an emergency or a supply curtailment. Moreover, if new or expanded refineries were required to process the crude oil, various additional environmental problems could result (e.g., air pollution, visual intrusion, and noise). Much of the region's oil supply is transported by rail, which is statistically not as safe as natural gas transported by pipeline.

Although nuclear power is seen by some as a means of reducing greenhouse gas (GHG) emissions, other stakeholders are concerned with the environmental and regulatory challenges concerning safety and security, the disposal of toxic materials, and alterations to the natural hydrological and biological systems would need to be addressed before any new nuclear power generation facilities could be constructed. As a result, proposals and any subsequent plans to construct new, or expand existing plants in the northeast would likely involve prolonged review periods that would not meet the objectives of the projects. For these reasons, nuclear power is not currently a practicable alternative to the Project and was eliminated from further review.

LNG is a developing energy alternative in the northeast. Several LNG facilities are being proposed as a means of addressing some of the energy needs in New England, New Jersey, and New York. However, many of these projects are still in the developmental stages, and the timing for these projects to receive approvals and be constructed does not address the current purpose and need of the Project. An LNG system alternative would not only require the construction of a liquefaction and vaporization facility, but also transportation of the necessary volume of LNG to the delivery point by pipeline, truck, or train. Given the requirement for the construction of liquefaction and vaporization facilities as well as pipelines and/or the number of truck and train trips that would be required on a continuous basis, the transportation of the required amount of natural gas is not preferable to the proposed Project.

Wind, geothermal, and solar power have not been developed in the eastern U.S. for large-scale application, partly because the energy sources associated with these forms of power are reliable in only certain parts of the country or are not generally available. These forms of energy, which are typically converted to electricity, may not substitute easily for natural gas in equipment and processes designed for using natural gas. In addition, once converted, the electricity must be transported to the consumer, which could require construction of new power lines. Moreover, land requirements for wind and solar power generation is considerable; once converted, the land cannot be restored to its prior use in the same way that land used for natural gas pipelines can be restored. Given the pace of development for these resources in the eastern U.S., they will not meet the future demand for energy in the Project timeframe. Therefore, these particular alternative energy sources do not represent viable options for replacing the natural gas that will be supplied by the Project.

8.0 System Alternatives

System alternatives would make use of other existing, modified, or proposed facilities while meeting the objective of the proposed action. PennEast investigated a number of system alternatives to constructing and operating the Project which are discussed below. The existing systems that were evaluated include Transco's Leidy Line, Columbia, Texas Eastern Transmission, LP (Texas Eastern), and Adelphia pipeline systems. These existing systems lack the capability to receive gas in the production region in which PennEast's receipt points would be located.

8.1 Transco Leidy Line Loop

Transco's Leidy Line is fully, or almost fully, subscribed on a firm basis, and cannot accommodate the 650,000 Dth/d of firm transportation on the Phase 1 path without the construction of significant facilities. In this regard, a Transco alternative would require a looping of the entire Transco Leidy line all the way to the delivery points for the Adelphia pipeline and the Columbia pipeline.

A nearly identical alternative was considered and rejected in the Federal Energy Regulatory Commission's (FERC's) Final Environmental Impact Statement (FEIS) within the context of the project as a whole, and FERC determined that the "Transco Leidy Line as an alternative would not be feasible due to densely populated areas along that line would prevent looping. Expansion of the Transco Leidy Line would also not provide access to the delivery points proposed by PennEast." Although a loop of Transco's Leidy Line pipeline system could access the same production region that the Project facilities would access, the Transco Leidy Line does not offer the same access to specific delivery point locations provided by the Project facilities and would not permit the phasing of the PennEast Project. In addition to not being able to meet

the purpose and need, the Transco system alternative is not a viable alternative in light of the densely populated areas surrounding portions of the existing Transco Leidy Line and greenfield environmental impacts that would be associated avoiding developed areas.

Similar to FERC's analysis in the FEIS with respect to the project as a whole, the Leidy Line Loop alternative would not meet the purpose and need of the Project facilities because the alternative would not provide access to the Project delivery points. PennEast will offer direct delivery to UGI Utilities, Inc. (f/k/a UGI Central Penn Gas, Inc.) that cannot be made by utilizing the Transco system. In addition, the location of the Church Road Interconnects and the design of the Project facilities will access the downstream pipelines at different locations than Transco, providing access in closer proximity to certain demand centers on these pipelines. For example, the Church Road Interconnects is located in a different rate zone on the Adelpia System, and is located closer to the industrial market near downtown Philadelphia. Transco currently interconnects to Adelpia at the most northern end of the system designed to serve a dedicated rate zone which is not accessible to Adelpia's southern market area where the Project's market is located. PennEast's system is also designed to operate at a higher pressure than Transco currently operates in this area. The Church Road Interconnects location and the operating pressure would provide greater downstream takeaway and flexibility that would allow PennEast to deliver more gas into the downstream pipelines. Because the Transco Leidy Line does not make these direct deliveries to UGI Utilities, Inc., or connect to Adelpia and Columbia Gas in the same location as PennEast, any Transco system alternative would not satisfy the purpose and need of the Project without the addition of greenfield pipeline facilities.

Additionally, if Transco were to loop its Leidy Line pipeline system as an alternative to the Project, there would not be an additional new pipeline in the region to deliver production from the nearby production region to the markets to be served by the Project.

Transco has stated that the existing line cannot be expanded: "The existing Transco pipeline system is extremely capacity constrained in New Jersey and Southern Pennsylvania, operating in very densely populated areas. Because of encroachment of residential and commercial structures along the Transco system, certain areas would be nearly impossible to loop and would require other greenfield portions to be constructed, further increasing the overall impact of the project." (Transco Atlantic Sunrise FAQ at <http://atlanticsunriseexpansion.com/get-the-facts/get-the-facts>). Encroachment is severe in Pennsylvania, which would result in a considerable amount of greenfield construction.

In summary, Transco's Leidy Line pipeline system is not a viable system alternative because it does not meet the purpose and need of the Project. Moreover, given the lack of capacity on the Transco system, it would require significant greenfield construction to loop its system around densely populated areas and to reach the required delivery points. A figure that shows the Transco Leidy Line Route in relation to the proposed Phase 1 Route (introduced in Section 9.1.10 below) is presented as Figure 1 in Appendix NO-S-1.

8.2 Columbia Gas

The existing Columbia Gas facilities lack the capability to receive gas in the production region in which PennEast's receipt points will be located. In order to access the same production region that the Project will access and to deliver the production at all the same delivery points that PennEast proposes for the Project,

Columbia Gas would be required to construct greenfield pipeline facilities nearly identical to the facilities that comprise the Project. Accordingly, Columbia Gas does not provide an alternative to the Project.

8.3 Texas Eastern

The existing Texas Eastern facilities lack the capability to receive gas in the production region in which PennEast's receipt points will be located. In order to access the same production region that the Project will access and to deliver the production at all the same delivery points that PennEast proposes for the Project, Texas Eastern would be required to construct greenfield pipeline facilities nearly identical to the facilities that comprise the Project. Accordingly, Texas Eastern does not provide an alternative to the Project.

8.4 Adelphia

The existing Adelphia facilities lack the capability to receive gas in the production region in which PennEast's receipt points will be located. In order to access the same production region that the Phase 1 facilities will access and to deliver the projection at all the same delivery points that PennEast proposes for Phase 1, Adelphia would be required to construct greenfield pipeline facilities nearly identical to the facilities that compose the Project. Adelphia's route does not mirror the Project's, and further, extends north beyond the Project's route. Accordingly, Adelphia does not provide an alternative to the Project.

8.5 Other System Alternatives

The purpose and need of the Project includes satisfying the service that was subscribed to by the Project shippers under long-term firm contracts, which include multiple, unique receipt and delivery point combinations located along the proposed PennEast system. PennEast is not aware of any other pipeline alternative that could satisfy the unique receipt and delivery point combinations subscribed under its agreements with the project shippers.

9.0 Key Route Alternatives and Pipeline Deviations

Initially, PennEast estimated that the proposed Project would be approximately 100 miles in length with a 400-foot wide study corridor. For the initial Critical Issues Analysis, PennEast performed a desktop analysis across an area of consideration approximately one half-mile in width along the length. This allowed PennEast to obtain a clear understanding of potential engineering and environmental constraints within the Project area, and the expanded geography encompassed the necessary area for access roads and staging areas.

For desktop analysis of the Project, PennEast used resources such as the Pennsylvania Spatial Data Access, Pennsylvania Geographic Information System (GIS) and Mapping Directory, and the Pennsylvania Department of Conservation and Natural Resources (PADCNR) Map Viewer. Table NO-S-1 provides an overview of the data sources that were used for desktop analysis.

Table NO-S-1
Data Resources for Desktop Analysis

Desktop Category	Data Source ¹
Bridges - Structurally Deficient or Functionally Obsolete	FHA NBI
Cemeteries	USGS GNIS
Churches	USGS GNIS
Coal Mines	PADEP
Commercial Hazardous Waste Operations	PADEP
Core Habitat	WPC PNHP
County Boundaries	PennDOT
Exceptional Value or High-Quality Waters	PADEP, PSU
Explore PA Trails	PADCNR
Farmland Preservation - Agricultural Security Areas	PSU
FEMA 100-yr Flood Zone	FEMA
Historic Buildings and Structures	NRIS - NRHP
Karst/Sinkholes	PADCNR PaGS
Slopes > 30%	LiDAR
Existing transmission, gas, and product utility lines	Platts POWERmap®
National Wetlands Inventory (NWI) Wetlands	USFWS, NWI
Parcels	Assessor Office within each county
Provisional species of concern sites	WPC PNHP
Railroads	PADCNR
Schools	USGS GNIS
State Forests	PADCNR
State Gamelands	PADCNR
State Parks	PADCNR
Streams Chapter 93 Designated Use Warm Water Fishes Waters	PADEP, PSU
Supporting Landscape	WPC PNHP
Watercourses	NHD
Wells	PaGWIS

¹ See Acronyms and Abbreviations Table at beginning of document

9.1 Key Route Alternatives

PennEast carefully examined existing utility corridors (natural gas, liquid pipeline, electric transmission, water, and sewer) to identify potential areas where the proposed pipeline could parallel or be co-located within existing maintained rights-of-way (ROW). This assessment found that residential and commercial development had encroached upon some of these ROW, resulting in inadequate area for the staging and construction of an additional pipeline between the existing facilities and the neighboring developments. In locations where environmental impacts would not increase, PennEast aligned the Project with as many existing utility corridors as possible, while providing adequate workspace to safely construct and operate the Project.

Since the Project's inception in the spring of 2014, ten key alternative routes in Pennsylvania and New Jersey, including the current Project route, have been reviewed and evaluated using a combination of desktop and field survey data. The majority of key route alternatives incorporated route deviations at the

request of regulatory agencies, stakeholders, and/or landowners. The route deviations specific to Northampton County are discussed in Section 9.2. If a requested route change was constructible and resulted in comparable or fewer environmental impacts, the deviation was accepted and incorporated in the Project design.

The ten key alternatives include:

1. Original Route
2. Alternative 1 to Original Route with Elizabethtown Gas (ETG) Spur
3. Alternative 2 to Original Route with NJ Loop (Initial Preferred Route)
4. November 2014 Preferred Route
5. January 2015 Preferred Route
6. March 2015 Preferred Route
7. September 2015 Preferred Route
8. September 2016 Preferred Route
9. Proposed Revised PA Route
10. Proposed Phase 1 Route (Current Route)

9.1.1 Original Route

The Original Route was designed to bring locally produced Marcellus Shale gas from UGI's supply point in northeastern Pennsylvania, through 29 municipalities, to its Transco Trenton-Woodbury interconnect in Mercer County, New Jersey, allowing it to serve customers in metropolitan East Coast markets. PennEast considered multiple factors when evaluating potential alignments. The Original Route was aligned to avoid standing structures, densely populated areas and planned development projects, thereby minimizing the potential cumulative impacts of the pipeline. In Pennsylvania, the Original Route had a centerline of 84.7 miles and crossed 106 publicly mapped streams. One hundred thirty-nine acres of National Wetland Inventory (NWI) wetlands fell within 200 feet of the line, which equated to 3.4 percent of the total 400-foot wide corridor within Pennsylvania being mapped as wetland. A figure that shows the Original Route in relation to the proposed Phase 1 Route (introduced below) is presented as Figure 2 in Appendix NO-S-1.

9.1.2 Alternative 1 to Original Route with Elizabethtown Gas (ETG) Spur

PennEast's Original Route was reviewed to assess potential critical (environmental) issues, permitting requirements, and risks. A desktop analysis, as described in Section 9.0, evaluated areas of potential impact. PennEast also conducted an aerial reconnaissance of the study corridor on May 20, 2014 to identify additional, potentially critical issues and risks that were not identified through desktop review, including wetland and watercourse crossings. The aerial reconnaissance allowed for a clearer understanding of possible engineering and environmental constraints along the Original Route. Following the aerial reconnaissance surveys, site visits were performed at publicly accessible potential road and watercourse crossings as well as other critical areas along the proposed alignment. Both the aerial and ground reconnaissance highlighted areas of potential concern and allowed for further investigation into solutions such as reroutes. The areas that were focused on in the reconnaissance included:

- Private and public roads, railroads, bridges, and trail crossings;
- Wetland and watercourse crossings;
- Clearing requirements;
- Land use (including agricultural lands);
- Socio-economic issues;
- Commercial and industrial areas; and
- Existing infrastructure.

The findings of the aerial and ground reconnaissance were integrated and used to propose modifications that were incorporated into Alternative 1 to the Original Route with ETG Spur.

Alternative 1 to the Original Route with ETG Spur was preferred to the Original Route because it would result in fewer environmental impacts. Specifically, Alternative 1 Route reduced the total acreage of Pennsylvania State Game Lands (SGL) that were located within 200 feet of the centerline by 45 acres. The route also avoided 58 acres of NWI-mapped wetlands within 200 feet of the centerline that would have been affected by the Original Route. A figure that shows the Alternative 1 to the Original Route with ETG Spur in relation to the proposed Phase 1 Route (introduced below) is presented as Figure 3 in Appendix NO-S-1.

9.1.3 Alternative 2 to Original Route with NJ Loop (Initial Preferred Route)

PennEast conducted further analysis of environmental constraints, resulting in Alternative 2 to Original Route with NJ Loop (Initial Preferred Route). To reduce potential environmental impacts related to the ETG Spur, PennEast eliminated the Alternative 1 to Original Route with ETG Spur. Along with exclusion of the ETG Spur, which would have resulted in two Delaware River crossings, the Initial Preferred Route also shifted the alignment between MP 70 and MP 90 from Bucks County, Pennsylvania to Hunterdon County, New Jersey. The Initial Preferred Route was preferred to the previous route because it crossed less densely populated areas and fewer wetlands and watercourses. A figure that shows the Initial Preferred Route in relation to the proposed Phase 1 Route (introduced below) is presented as Figure 4 in Appendix NO-S-1.

9.1.4 November 2014 Preferred Route

Along the Initial Preferred Route, reroutes were considered that incorporated co-location opportunities. The centerline was shifted to co-locate with various utility ROWs, including gas pipeline and electric transmission. Co-location reduces the amount of vegetation clearing and environmental impacts and concentrates them into a smaller area. Between MP 10 and MP 20, an area where the pipeline crossed SGLs, the alignment was moved to co-locate with Transco's existing pipeline ROW. This route change decreased the new permanent ROW requirements and reduced cumulative land use impacts. The November 2014 Preferred Route incorporated other significant co-location segments between MP 20 and MP 40 in Luzerne and Carbon Counties. The route was further refined to incorporate landowner input and environmental survey results. The November 2014 Preferred Route also included the addition of the Hellertown Lateral in Northampton County. A figure that shows the November 2014 Preferred Route in relation to the proposed Phase 1 Route (introduced below) is presented as Figure 5 in Appendix NO-S-1.

9.1.5 January 2015 Preferred Route

After PennEast filed its initial draft Resource Reports 1 and 10 with the FERC in November 2014, PennEast considered a number of route alternatives based on input from local, county, and township officials. PennEast also considered comments and concerns from individual landowners and members of the general public that were raised during Open Houses held in November 2014. PennEast also made necessary adjustments to the route to account for engineering, environmental, and land use constraints that were identified during the initial environmental survey process. As a result of this process, a route modification in Pennsylvania was implemented to include a shift in the proposed route for approximately 2.5 miles to the north side of State Route (SR) 33 near the city of Bethlehem in Northampton County, Pennsylvania to accommodate future expansion plans of the St. Luke's Hospital complex. A figure that shows the January 2015 Preferred Route in relation to the proposed Phase 1 Route (introduced below) is presented as Figure 6 in Appendix NO-S-1.

9.1.6 March 2015 Preferred Route

Following feedback from FERC's scoping meetings held in February 2015 and conversations with landowners, state and local agencies, and other stakeholders, PennEast revised and refined portions of the Preferred Route in March 2015. The most significant variations to the route were incorporated to improve upon the design crossings of the Bethlehem Water Authority (BWA) water supply mainline (between MP 44 and MP 45) in Carbon County and the Appalachian Trail (between MP 46 and MP 55) in Carbon and Northampton Counties, and to accommodate future subdivision and housing development plans in Luzerne County. Smaller adjustments were also incorporated in the Project design to address engineering constraints, reduce environmental impacts, and respond to individual landowner requests. A figure that shows the March 2015 Preferred Route in relation to the proposed Phase 1 Route (introduced below) is presented as Figure 7 in Appendix NO-S-1.

9.1.7 September 2015 Preferred Route

Following PennEast's filing of the remaining draft Resource Reports in April 2015, PennEast continued to evaluate potential alternatives to the proposed pipeline alignment based on comments received during the formal scoping process, ongoing dialogue with federal, state, regional and local agencies, landowners, and the results of continued field surveys and engineering analyses.

For the Preferred Route filed in its September 2015 FERC Application, PennEast made a significant effort to refine the alignment within the 400-foot survey corridor. In Pennsylvania, two major reroutes and more than 40 minor reroutes were evaluated. The resulting alignment adjustments were incorporated in the Project design to avoid and/or minimize impacts to wetlands and watercourses, cultural resources, preserved agricultural lands, and sensitive habitats.

The major reroutes included an alternative route for crossing the Appalachian Trail and Pennsylvania SGL No. 168 in Carbon and Northampton Counties, and a realignment to avoid active quarrying operations near Wilkes-Barre, Luzerne County. The reroute associated with the Appalachian Trail included a new delivery interconnection with UGI Central Penn Gas, Inc. These new alternatives and reroutes went through the same detailed assessment as the previous routes. A figure that shows the September 2015 Preferred Route

in relation to the proposed Phase 1 Route (introduced below) is presented as Figure 8 in Appendix NO-S-1.

9.1.8 September 2016 Preferred Route

After filing the September 2015 FERC Application, PennEast continued to evaluate potential alternatives to the proposed pipeline alignment based on comments received during ongoing dialogue with federal, state, regional and local agencies, landowners, and the results of continued field surveys and engineering analyses.

In Pennsylvania, more than 26 minor deviations were evaluated and adopted since the September 2015 Preferred Route. The minor deviations included an additional adjustment to the crossing of the Appalachian Trail in Carbon and Northampton Counties, several realignments to avoid potential habitat to sensitive species, avoidance of geotechnical hazards, and realignments to avoid future land use impacts. These new minor reroutes were subjected to the same detailed assessment as those assessed in the FERC Application. A figure that shows the September 2016 Preferred Route in relation to the proposed Phase 1 Route (introduced below) is presented as Figure 9 in Appendix NO-S-1.

9.1.9 Revised PA Route

PennEast incorporated several route and workspace modifications to avoid and minimize impacts to sensitive resources, respond to landowner requests, and address constructability concerns to the September 2016 Preferred Route. The Revised PA Route incorporated these adjustments and included a deviation of approximately 5-miles from MP 48.6R3 to MP 53.6R3 that crosses Lower Towamensing Township in Carbon County, Eldred Township in Monroe County, and Moore Township in Northampton County. This modification was implemented to address concerns from several agencies, specifically the BWA, the National Park Service (NPS), and the Pennsylvania Game Commission (PGC). This route would be co-located with two existing power line ROWs, including the existing high voltage power line ROW (approximately 100-foot wide) that crosses the Appalachian Trail. This co-location resulted in reduced visual impacts to trail users.

The majority of the Project changes since the September 2016 Preferred Route involved workspace reductions, resulting in a Project footprint reduction of 336 acres or 20 percent in Pennsylvania. The Revised PA Route was approximately 1 mile shorter in length than September 2016 Preferred Route. Implementation of the Revised PA Route increased co-location and reduced impacts to wetlands, watercourses, and forest habitats. Approximately 31 miles, or approximately 39 percent, of the total length of the Revised PA Route was proposed to be co-located with existing utility ROWs, in comparison to approximately 28 miles, or approximately 35 percent, of the September 2016 Preferred Route. The Revised PA Route impacted 37 fewer wetlands, resulting in a 4.6-acre (15 percent) reduction in wetland impacts. The route impacted 23 fewer watercourses. There was a 39-acre reduction in forest impacts, including a 40-acre reduction of impacts within Important Bird Areas. A figure that shows the Revised PA Route in relation to the proposed Phase 1 Route (introduced below) is presented as Figure 10 in Appendix NO-S-1.

9.1.10 Phase 1 Route

In February 2020, PennEast filed an Amendment Application with FERC to phase construction of the project that FERC approved in its January 19, 2018 Certificate Order, as amended in its March 19, 2020 Certificate Order (the Revised PA Route). This approved project route included a 115-mile long, 36-inch diameter mainline pipeline, three lateral pipelines, one compressor station, and various associated facilities. PennEast has worked in good faith and has used its best efforts to obtain all of the approvals required for construction of the FERC-approved project; however, PennEast has encountered unforeseen delays in acquiring certain governmental authorizations and real property rights in New Jersey (New Jersey Authorizations), which in turn stands to delay construction and operation of the entire FERC-approved project, including the Pennsylvania portion that is otherwise not affected by and is independent of the New Jersey Authorizations. Accordingly, PennEast is seeking FERC's authorization to construct and operate the Project in two phases, to allow PennEast to meet the requirements of its firm shippers who will utilize the Phase 1 Project facilities, while allowing PennEast to continue to work towards acquiring the New Jersey Authorizations. The Project that is the subject of this JPA includes only the Phase 1 facilities, which are described in Section 3 above. The Phase 1 Route is the currently proposed route for which environmental impacts are quantified and assessed in this JPA.

The Phase 1 Route has no additional route modification or deviations from the Revised PA Route except for the termination location at the Church Road Interconnects in Bethlehem Township, Northampton County.

9.2 Pipeline Deviations

Throughout the routing process, PennEast completed field surveys to assess potential impacts to wetlands, watercourses, cultural resources, and threatened and endangered species. The survey results were incorporated into the Project design. Throughout the planning process, PennEast staff continually evaluated how to minimize overall Project impacts and altered the pipeline route or workspace limits to avoid wetlands and watercourses wherever practicable. In addition, PennEast has continued to work with individual landowners to avoid sensitive features on properties and address their concerns. Deviations that were considered for Northampton County are outlined and further detailed in Table NO-S-2 below, with figures corresponding to each Route Deviation Number provided in Appendix NO-S-2.

Table NO-S-2
Summary of Pipeline Deviations in Northampton County, PA

Route Deviation No.	Begin MP	End MP	Associated Key Alternative ¹	Reason for Deviation
NO-1	47.1	57.5	All	Multiple route deviations were evaluated as alternatives to address stakeholder comments and reduce impacts in the area of the Appalachian Trail Crossing. The addition of the interconnect at Blue Mountain also provided a need to be able to accommodate this delivery point in the routing of the PennEast Mainline. These deviations were developed by considering stakeholder comments, working collaboratively with affected property owners in the immediate vicinity of the Appalachian Trail, evaluating regulatory and timing constraints with regard to deed restrictions and easements, and evaluating overall environmental and landowner impacts. The intent of these deviations was to focus on co-location in to minimize impacts to the Appalachian Trail viewshed. In this effort, multiple alternatives were considered incorporating co-location with existing utility easements, State Road ROW, and also utilizing the previously disturbed area of the Blue Mountain Ski Resort.
NO-2	57.5	57.8R2	Revised PA Route	The pipeline was realigned, and the workspace adjusted to avoid the landowner's newly constructed barn within the workspace. By continuing the alignment offset through the adjacent parcels, the route now avoids a driveway at the next road crossing.
NO-3	57.5	58.5	September 2016 Preferred Route	This deviation is to accommodate a landowner request. This deviation modifies the route based on landowner feedback requesting that PennEast minimize workspace impacts. Although the overall Project route will be longer, the deviation reduces the number of parcels crossed and impacts one (1) less residence within 100 feet of the pipeline center line. In addition, although this deviation will increase the overall land requirements, it will reduce the acreage of impacts to forested areas. The deviation does not result in additional wetland impacts. Watercourse impacts are comparable on both routes; however, the Revised PA Route crosses watercourses perpendicularly rather than at an obtuse angle, thereby reducing impacts.
NO-4	59.5R2	60.0R2	September 2016 Preferred Route	This deviation is a minor route modification based on a landowner request and modifies the route by moving it away from the golf course and minimizing impacts to the treeline perimeter. The deviation will not impact wetlands or watercourses.
NO-5	61.5R3	65	All	Several deviations were evaluated between MP 61.5R3 and 65 to respond to landowner requests, avoid conflicts with future development plans/subdivisions, minimize impacts to commercially-zoned properties, and minimize impacts to culturally sensitive sites. These deviations are sited primarily through agricultural fields. Wetland and watercourse impacts are comparable along each deviation.

¹The route deviation was considered for implementation into the corresponding "Associated Key Alternative". If implemented, the deviation was included in all subsequent routes.

9.3 Aboveground Facilities – Alternative Sites

A total of 13 new aboveground facilities have been proposed, including interconnect meter stations, mainline block valves, internal inspection facilities, and a compressor station. These facilities are necessary to provide interconnects with existing pipelines, compression to move natural gas through the pipeline system, and infrastructure to safely operate the pipelines in accordance with the safety standards established by the U.S. Department of Transportation in 49 CFR Part 192. The aboveground facilities are described further in the Project Description in JPA Section J. Within Northampton County, the following two MLV sites and one interconnect site are proposed:

- MLV-6 at MP 57
- MLV-7 at MP 62.4R3
- Church Road Interconnects

9.3.1 Mainline Valves

The mainline valves were sited within upland areas within the permanent easement for the proposed pipeline. Initially, MLV-6 was proposed at MP 56 near SR 946. Wetland delineations were completed on the property in June 2018, and the MLV would have resulted in permanent aboveground impacts within a wetland. PennEast therefore relocated the MLV to the currently proposed location at MP 57. A figure that shows the alternative MLV site is provided in Appendix NO-S-3.

9.3.2 Church Road Interconnects

The proposed Church Road Interconnects is the location at which the Project's mainline pipeline would tie into existing infrastructure at delivery points. There is space to construct the facility on either the northern or southern side of the Project's mainline pipeline. However, the Church Road Interconnects location is proposed to be constructed to the south of the ROW because that layout would increase the distance between the proposed facility and neighboring houses, use the previously developed footprint of the existing residence and utility ROWs, and avoid impacts to open land designated as prime farmland.

10.0 Avoidance Measures

After determining that the proposed Phase 1 Route was the most constructible corridor, PennEast further assessed potential impacts to wetlands and watercourses within the 400-foot wide study area. Within the designated corridor, the centerline alignment and workspace limits were altered to avoid wetlands and watercourses to the extent practicable. Within Northampton County, PennEast was able to avoid impacts to 3 wetlands through the implementation of these modifications. These avoided features are listed in Table NO-S-3 below. The workspace reductions are shown on the Alignment Sheets in JPA Section H.

Table NO-S- 3
Wetlands and Watercourses Avoided Through Workspace Changes in Northampton County

Feature ID	MP	Description
110217_WA_001_PSS	52.8R3	Limit of disturbance has been reduced to avoid impacts to this wetland.
060618_WA_001_PEM	55.9	Temporary workspace has been reduced to avoid impacts to this wetland.
111214_JC_003_PEM	61.5R3	Temporary workspace has been removed to avoid impacts to this wetland.

11.0 Minimization Measures

Where impacts to wetland and watercourses could not be avoided, PennEast designed the Project to minimize the impacts through route and workspace changes. PennEast aligned the Phase 1 Route to collocate with existing utility ROWs wherever practicable, thereby crossing wetlands and watercourses at or near locations that have been disturbed through construction of a previous utility project. PennEast also sited the pipeline to cross resources at their narrowest locations when practicable. Wherever site conditions would allow, PennEast reduced the construction ROW to 75 feet through wetlands, watercourses, floodways, and forested riparian buffers. In some areas, the workspace could not be reduced without jeopardizing safety. These include areas of steep terrain, areas adjacent to road crossings and other existing infrastructure, and/or where specialized construction techniques require expanded workspace for safe construction. The tables in Appendix NO-S-4 present minimization measures that have been implemented to minimize impacts, including site-specific considerations for each wetland and watercourse crossed by the Project in Northampton County.

11.1 Construction Methods

PennEast evaluated each wetland and watercourse crossing location to determine whether conventional open-cut or trenchless construction techniques would be the most suitable crossing method. Several criteria were considered in determining the most appropriate crossing method:

- Geologic conditions;
- Topographic conditions;
- Available workspace; and
- Practicality.

For each feature crossed within Luzerne County, the table in Appendix NO-S-4 presents the proposed crossing method and a trenchless feasibility analysis based on the constraints listed above. If the trenchless feasibility of a crossing location was limited by one of these four factors, additional information regarding the specific crossing location is provided in the “Justification” column.

11.1.1 Trenchless Construction Methods

PennEast evaluated using trenchless construction technology to cross sensitive resources, including horizontal directional drill (HDD), Direct Pipe[®], microtunneling, and conventional bore. These trenchless construction methods would eliminate surface impacts to wetlands and watercourses.

Horizontal Directional Drill (HDD)

The HDD method is a trenchless installation technique used to install pipelines beneath the ground surface in areas where neither traditional open-cut excavations nor conventional bores are feasible due to sensitive resource areas or logistical reasons. This technique involves drilling a pilot bore, reaming the bore (with multiple passes) to a certain diameter, swabbing the bore to gauge the condition of the drilled bore, and pulling in a product pipe to complete the installation. Drilling fluids (consisting of water and bentonite) are pumped downhole during all phases of the installation process.

Controlling and managing the drilling fluid pressures is the key to a successful HDD installation. When the soils encountered by an HDD installation provide sufficient strength to resist the required drilling fluid pressures, flow of drilling fluids occurs within the HDD bore created with the drilling tools. However, if the soils encountered by the HDD bore are not capable of providing sufficient strength to resist the required drilling fluid pressures, flow of drilling fluids within the HDD bore cannot be controlled or maintained, resulting in drilling fluid migration into the surrounding soils. Design of an HDD installation must consider the depth of cover beneath the critical feature, the entry and exit locations, the allowable bend radius, the anticipated geotechnical materials, and the setback distance from the critical feature. As such, HDD installations typically require longer installation lengths than other trenchless methods. This longer length increases the setback distance from the critical feature.

HDD installations are typically completed with entry angles between 10 and 15 degrees and exit angles between 8 and 12 degrees. The bending radius is typically 1200 times the outer diameter (feet) of the product pipe. For a typical 36-inch pipeline, the bending radius would be 3,600 feet. Vertical curves are inherent to all HDD installations.

Workspace requirements include a launch/entry area of approximately 200 feet wide by 200 feet long to stage the necessary equipment. The exit area requires an approximate workspace area of 150 feet by 150 feet, unless a drill and intersect approach is used. In this case, a similar entry workspace is required at the exit location. The pipe string is staged on the opposite side of the HDD rig. A pipe staging area of 50 feet wide with a length equal to the HDD installation length is typically required to fully fabricate a preferred single pipe string. Where insufficient work space exists, multiple pipe strings can be used as opposed to fabricating a single string. For these installations, the width of the pipe staging area typically needs to be increased by an additional 25 feet for each pipe string. Multiple pipe strings increase installation risks associated with prolonged stoppages to perform intermediate welds. For this reason, the number of pipe strings should be kept to a minimum.

Direct Pipe®

The Direct Pipe® installation method is a trenchless installation technique used to install pipelines beneath the ground surface in areas where neither traditional open-cut excavations nor other trenchless methods (HDD or conventional bore) are feasible, due to sensitive resource areas or for logistical reasons.

Direct Pipe® installation method involves using a pipe thruster to push a steel product pipeline with a microtunnel machine attached to the lead pipe from the entry location through to the exit location. The thruster is set up within a shallow shaft or on the ground surface at the entry location. As the microtunnel machine is pushed through the ground, the encountered geotechnical materials are consumed through the cutterhead of the machine and removed through the installed pipe using a closed-loop slurry system.

Water is pumped to the front of the machine where it entrains the produced cuttings to create a slurry that is then pumped back up to the ground surface for processing and removal. Bentonite is often added to the slurry system to help with processing and removal of the cuttings within the machine. The cutterhead at the front of the microtunnel machine excavates a larger bore diameter than that of the product pipe. Lubrication is pumped into this annular space to help reduce frictional forces acting on the pipe string. Water jets directed within the crushing chamber of the machine and cutterhead are often used to help process the encountered geotechnical materials within the crushing chamber, especially within cohesive soils.

Cutterheads, used to excavate the encountered geotechnical conditions, must be matched for the anticipated ground conditions along an alignment. Cutterheads used to excavate soils are not capable of excavating bedrock materials. Similarly, bedrock machines are not capable of excavating soil materials without great difficulty and high jacking forces. Mixed-face cutterheads, used to excavate soils containing some cobbles and/or boulders, do not work well within clayey soils or bedrock materials.

Direct Pipe® allows for the direct installation of the product pipeline along an alignment that resembles an HDD installation. Curves are routinely completed for these installations, with a curve radius similar or slightly tighter to that used for HDD installations. Direct Pipe® installations are conducted from a launch pit with entry angles typically between 5 and 15 degrees. Alignments are typically designed similar to the requirements for an HDD installation but at a much shallower depth, as no drilling fluid is used to convey the excavated material outside of the pipe string. Unlike HDD installations, a return line slurry pump, located within the microtunnel boring machine, pumps the cuttings out of the machine and to the ground surface. As a result, the overlying soils are not required to resist high drilling fluid pressures as they are for an HDD installation. This allows for shallower installation depths with this construction method.

Workspace requirements include a launch/entry area of approximately 150 feet wide by 200 feet long, to stage the necessary equipment and to allow for construction of a shallow launch pit. The exit area requires a workspace area of approximately 50 feet by 100 feet and a large crane to retrieve the microtunnel boring machine. The pipe string is staged on the same side as the thruster/launch pit. A pipe staging area of at least 75 feet wide by at least half of the installation length is typically required to fabricate the pipe strings and to stage the required slurry and lubrication and pipe handling equipment. This length is in addition to the staging area required for the launch pit. The width of the pipe staging area must be increased if multiple pipe strings are used for an installation.

Microtunneling

Microtunneling is similar to the Direct Pipe® method with the following exceptions: deep shafts are used to launch and retrieve the microtunneling bore machine; curved alignments are not typically completed; lubrication is pumped through ports/holes drilled through the jacking pipe; and a two-pass installation strategy is required. The lubrication ports/holes within the jacking pipe do not allow for the direct install of the product pipe (hence the jacking pipe must serve as a casing pipe to house the product pipe). The introduction of shafts further complicates construction as the product pipe must be fabricated within the shaft and pushed into the casing pipe one joint at a time and inclined risers may be required to avoid vertical pipelines within each shaft. Pressure testing of the product pipe within the microtunnel installation cannot occur until after it is constructed, significantly complicating construction if issues were to arise. Because of these challenges associated with microtunneling, this method is not a preferred method of construction for natural gas pipelines.

Conventional Bore

Auger boring, often referred to as “jack and bore” or “conventional boring,” involves jacking a casing pipe housing auger flights from a launch pit to a retrieval pit. A hydraulic unit located within the jacking pit thrusts the casing pipe forward as the auger flight is rotated to convey the encountered geotechnical material at the leading edge of the casing pipe back to launch pit. The leading auger flight is typically one to two pipe diameters inside the casing pipe. Operating the auger flights in this manner reduces risks associated with excessive excavation/flow of soil into the auger flight during advancement. Once brought back to the launch pit, a muck bucket/excavator is used to remove the spoil. When groundwater is present and highly permeable soils are anticipated, dewatering is often used to lower the water table to allow excavation under dry conditions and to reduce installation risks associated with unabated free-flowing water through the auger flights. In low permeable soils, the installation is typically completed with little to no dewatering. In bedrock installations, a special rock cutting head is attached to the casing pipe. Referred to as small boring units, these units are only capable of mining through very soft/weak bedrock materials.

The guided bore installation technique is a slight modification to the auger bore installation technique. It is identical to the auger bore installation methodology, with the addition of a new first step that involves pushing short five-foot sections of drill rods from the launch pit through the ground surface to the retrieval pit. The auger equipment is then attached to the installed drill rods and pushed through the ground to completion. The benefit of the guided bore method is that it eliminates the line and grade inaccuracy associated with an auger bore installation. In addition, no material is removed during this phase of the work. Instead, the soil is displaced outwards as the drill rods are advanced.

Auger and guided bore installations are typically limited to installation lengths of 300 to 400 feet in soil; bedrock installations are typically shorter.

11.1.2 Conventional Open-Cut Construction Methods

In the absence of environmental or construction concerns requiring the use of other crossing methods, the conventional open-cut method is the most efficient and practical decision for crossing wetlands and watercourses.

11.1.2.1 Conventional Wetland Construction Methods

Wetland construction methods will be conducted in accordance with the FERC Upland Erosion Control, Revegetation, and Maintenance Plan (Plan) (FERC, 2013a) and the FERC Wetland and Waterbody Construction and Mitigation Procedures (Procedures) (FERC, 2013b). Construction methods across wetlands will differ depending upon site conditions, as described below.

.Standard Wetland Construction (Non-Saturated)

The Standard Pipeline Construction method is used where soils are non-saturated and able to support construction equipment at the time of crossing. This method requires segregation of topsoil from subsoil along the trenchline. Where present, a maximum of 12 inches of topsoil will be segregated from the area disturbed by trenching, except where soils are frozen, standing water is present or soils are saturated, or where shallow depth to bedrock exists. These exceptions will be identified in the field. Topsoil segregation

is followed by trench excavation, pipe laying, backfilling, and grade restoration. Immediately after backfilling is complete, the segregated topsoil is restored to its original location. Erosion control measures, including site-specific contouring, silt fence, hay-bale barriers, permanent slope breakers, mulching, and reseeding or sodding with soil-holding vegetation, will be implemented. Contouring will be accomplished using acceptable excess soils from construction. Where this method is implemented for construction, the environmental inspector (EI) will measure the pre- and post-construction soil density using a penetrometer to determine if the soil has been inadvertently compacted during construction or site access. If necessary, the soil will be loosened using a harrow, paraplow, paratill, or other equipment. Deep subsoil shattering, if necessary, will be performed with a subsoiler tool having angled legs.

Conventional Wetland Construction (Saturated)

The Conventional Wetland Construction method is used for crossing wetlands with saturated soils or soils unable to support construction equipment without considerable soils disturbance. Prior to crossing and movement of construction equipment through these wetlands, the ROW will be stabilized using equipment mats to allow for stable, safe working conditions. Unless soils are inundated or saturated, a maximum of 12 inches of topsoil will be segregated from the area disturbed by trenching. Trench spoil will be stockpiled temporarily in a ridge along the pipeline trench. Gaps in the spoil pile will be left at appropriate intervals to maintain circulation or drainage of water.

The pipeline will be assembled in a staging area located in an upland area. In accordance with the FERC Procedures, the pipeline will be assembled prior to commencing trenching activities (FERC, 2013b). The pipe will then be moved from the assembly area to the ROW. After the pipeline is lowered into the trench, wide track bulldozers or backhoes supported on equipment mats will be used for backfilling, final cleanup, and grading. The method will minimize the amount of equipment and travel in wetland areas.

Push-Pull Technique/Float Technique

Construction in saturated/inundated wetland areas may involve the Push-Pull also known as the Float Technique. The Push-Pull Technique is used in large wetland areas (greater than 300 feet crossing length) where sufficient water is present for floating the pipeline in the trench, and grade elevation over the length of the push-pull area will not require damming to maintain adequate water levels for flotation of the pipe. If dry conditions prevail, the push-pull method is not viable. This method involves pushing the prefabricated pipe from the edge of the wetland or pulling the pipe with a winch from the opposite bank of the wetland into the trench. For implementation of this technique, initial clearing within the wetland is minimized; the width of the ROW cleared is limited to only that necessary to install the pipeline. Grading in inundated wetlands is generally unnecessary due to the typically level topography and the absence of rock outcrops in such areas; if required, grading will be held to a minimum.

Equipment mats may be placed over existing vegetation where grading is not required. Trees and brush will be cut to ground level by hand, with low ground pressure equipment, or with equipment supported by equipment mats.

The trench will be excavated using amphibious excavators (pontoon mounted backhoes) or tracked backhoes (supported by fabricated equipment mats or floats). The excavated material will be stored adjacent to the trench, if possible. If storage of excavated material next to the trench is not possible (i.e. workspace limitations, safety concerns), the material will be stored temporarily in one of the following locations: (1)

in upland areas of the ROW as near to the trench as possible, (2) in construction vehicles, or (3) at an approved off-site staging location until needed for backfilling. The pipe will be stored and joined at staging areas (push and pull sites) located outside of the wetland. Floats may be attached temporarily to give the pipe positive buoyancy. After floating the pipe, these floats will be cut, and the negative buoyant pipe will settle to the bottom of the ditch. This operation (pipe sections fabricated, welded together, and pushed into place) is repeated until the wetland crossing is complete. The excavated material will then be placed over the pipe to backfill the trench.

11.1.2.2 Conventional Watercourse Construction Methods

Various methods are available to install the pipeline across watercourses, depending on watercourse classification and flow conditions at the time of crossing. PennEast anticipates that most watercourse crossings will be completed within 24 to 48 hours.

Dam and Pump

The dam and pump crossing method involves constructing temporary sand or pea gravel bag dams upstream and downstream of the proposed crossing site while using a high capacity pump to divert water from the upstream side of the construction area to the downstream side. Energy dissipation devices, such as steel plates, placed on the downstream side at the discharge point will prevent streambed scour.

After installing the dams and commencing pumping, a portable pump (separate from that pumping the stream flow around the construction area) may be used to pump standing water from between the dams into a dewatering structure consisting of straw bales/silt fence or into a filter bag located away from the stream banks, thereby creating a dry construction area.

Once the area between the dams is stable, backhoes located on one or both banks would excavate a trench across the stream. Spoil excavated from the trench may be stored in the dry streambed adjacent to the trench if the stream crossing is major or in a straw bale/silt fence containment area located a minimum of 10 feet from the edge of the stream banks. Leakage from the dam, or subsurface flow from below the streambed, may cause water to accumulate in the trench. As water accumulates in the trench, it will be periodically pumped out and discharged into a dewatering structure located away from the stream banks.

After trenching across the streambed is completed, a prefabricated segment of pipe is installed in the trench. The streambed portion of the trench is immediately backfilled with streambed spoil. Once restoration of the streambed is complete, the dams are removed, and normal flow is re-established in the stream.

Flume Crossing

The flume crossing method involves diverting the flow of the stream across the construction site through one or more flume pipes placed in the stream. The first step in the flume crossing method involves placing a sufficient number of adequately sized flume pipes in the stream to accommodate the highest anticipated flow during construction. After placing the pipes in the stream, sand or pea gravel bags would be placed in the stream upstream and downstream of the proposed trench. The bags serve to dam the stream and divert the stream flow through the flume pipes, thereby isolating the stream flow from the construction area.

Backhoes located on one or both banks of the stream would excavate a trench under the flume pipe in the isolated streambed. Spoil excavated from the stream trench would be placed or stored a minimum of 10 feet from the edge of the watercourse or in additional temporary workspace (ATWS) as necessary. Once the trench is excavated, a pre-fabricated segment of pipe would be installed beneath the flume pipes. The trench is then backfilled with native spoil from the streambed. Clean gravel or native cobbles would be used to backfill the top 12 inches of the trench in coldwater fisheries.

If trench dewatering is necessary near watercourses, the trench water would be discharged into an energy dissipation/sediment filtration device, such as geotextile filter bag or straw bale structure, away from the water's edge, preferably in a well-vegetated upland area to prevent heavily silt-laden water from flowing into the watercourse.

Cofferdam

A cofferdam is a temporary structure built into a watercourse to contain or divert movement of water and to provide a reasonably dry waterbody crossing construction area. Cofferdams are commonly made of steel sheet pile, rock, gabions, concrete jersey barriers, vinyl tubes filled with water, or wood and may be lined with geotextile, plastic sheeting, or other materials to prevent water from entering the construction area. The advantages of the use of cofferdams include, maintain flow of the watercourse with phased construction approaches, minimal subsurface impacts, and short installation and breakdown times.

A typical cofferdam crossing will have two phases. Each of the phases will be conducted from opposite stream banks. Each phase will consist of placing sand bags or other equivalent cofferdam materials such that a portion of the watercourse to be crossed can be blocked from upstream and downstream water flow while at least one third of the total crossing width remains open to water flow. The area within the cofferdam area will be dewatered and pipeline work construction will be carried out in the dry. After completion of one bank (phase) the same configuration will be used from the other bank to complete a continuous pipeline crossing through the watercourse.

- 1) Cofferdams shall be constructed with materials that prevent sediment and other pollutants from entering the watercourse (e.g. sandbags or clean gravel with plastic liner);
- 2) Cofferdam and dewatering pumps shall be monitored to ensure proper operation throughout the watercourse crossing.

Dry Open-Cut Crossing

The open-cut construction method involves the excavation of the pipeline trench across the watercourse, installation of a prefabricated pipeline segment, and backfilling of the trench with excavated material. The work is performed under dry conditions; either during periods of no flow or when the watercourse is frozen. Depending upon the width of the crossing and the reach of the excavating equipment, excavation and backfilling of the trench would generally be accomplished using backhoes or other excavation equipment operating from one or both banks of the watercourse. Excavated material from the trench would be placed on the bank above the ordinary high-water mark for use as backfill. The pipe segment can be weighted, as necessary to provide negative buoyancy and placed below scour depth. Typical backfill cover requirements would be met, contours would be restored within the watercourse, and the banks would be stabilized via seeding and/or the installation of erosion control matting or approved alternative, per applicable agency

approvals. One of the goals of dry open-cut crossings is to complete all in-stream construction (trenching, pipe installation, backfill, and streambed restoration) within 48 hours.

11.2 Best Management Practices

In areas where trenchless construction methods are not feasible or practicable, a variety of best management practices (BMPs) will be implemented to minimize impacts. These BMPs include: reducing the construction ROW width from 100 feet to 75 feet; minimizing construction durations; adhering to construction timing windows; implementing erosion and sediment controls; replanting PFO wetlands, PSS wetlands, and forested riparian buffers; maintaining only a 30-foot ROW easement during operation; and mitigating impacts. BMPs that are specific to wetland and watercourse crossings are described below.

11.2.1 Wetland Crossing BMPs

Pipeline construction access in wetlands will be performed in accordance with state and federal permit conditions and the FERC Procedures (FERC, 2013b). PennEast will use one of the following methods for installing the pipeline via conventional open-cut construction techniques within wetlands:

- Standard Pipeline Construction (non-saturated wetland)
- Conventional Wetland Construction (saturated wetland)
- Push-Pull Technique (inundated wetland)

To minimize the potential for adverse effects to wetlands, PennEast will implement the following BMPs outlined in the Erosion and Sediment Control Plan (E&SCP) (JPA Section M) when conducting pipeline installation activities:

- PennEast will minimize vegetation clearing where feasible and stumps that do not interfere with travel or installation of the pipeline will be left in place to allow for re-sprouting following construction and restoration;
- PennEast will use construction mats in all wetlands to minimize impacts to the soil profile and reduce compaction in the travel lane;
- The excavation procedures used to cross unsaturated wetlands will be similar to those used in uplands;
- PennEast will segregate topsoil from the area disturbed by trenching, except in areas where standing water is present or soils are saturated;
- PennEast will install temporary trench plugs at the edges of wetlands, as necessary, to prevent the flow of upland sediments or other potential pollutants into wetlands during construction;
- PennEast will install permanent trench plugs at the edges of wetlands before the trench is backfilled to restore hydrology to preconstruction conditions;
- PennEast will install compost filter socks across and along the edge of the construction ROW, where indicated on the approved E&SCP (JPA Section M) and wherever necessary, to minimize the flow of sediment into wetlands; and
- PennEast will maintain a minimum 100-foot buffer from wetlands to refuel vehicles, store or transfer liquid hazardous materials, and field coat pipeline segments with concrete, unless otherwise approved by the EI and secondary containment is implemented.

11.2.2 Wetland Restoration

Restoration of the natural hydrology, soil profiles, and topography is critical to promote natural regeneration and to maintain a successful wetland ecological community. Where the original contours are reestablished within a ROW and no other impediments to the natural hydrology occur, natural revegetation of a ROW that is adjacent to an unaffected wetland plant community will usually occur within one or two growing seasons in palustrine emergent (PEM) and palustrine scrub-shrub (PSS) wetlands. Restoration activities in wetlands will be conducted in accordance with PennEast's approved E&SCP (JPA Section M), unless federal or state agencies require an alternative method. PennEast will use the following criteria to restore disturbed wetland areas to as close to their pre-construction condition as practical:

- All equipment mats, temporary timber bridges, and other construction debris shall be removed during the final grading of the ROW. Once backfilling is complete, segregated topsoil will be returned to affected locations, and the original surface contours and flow regimes will be restored;
- During final grading, wetlands (including areas within 100 feet of wetlands) will be restored to their pre-construction contours and the buffer areas seeded and mulched as soon after backfilling as practicable with the exception of the travel portion of the ROW, which will also be restored using these procedures after the travel way is no longer required;
- For each wetland crossed, trench breakers will be installed at the base of slopes near the boundary between the wetland and adjacent upland areas and the trench bottom will be sealed as necessary to maintain the original wetland hydrology in areas where the pipeline trench may affect the groundwater hydrology;
- Permanent slope breakers will be installed across the construction ROW at the base of slopes in accordance with the E&SCP (JPA Section M) to prevent sediment transport into the wetland.
- Sediment barriers will be installed as outlined in the E&SCP (JPA Section M) and as approved or specified by the EI;
- Wetlands will be seeded with a wetland conservation seed mix, unless standing water is present, in accordance with the procedures outlined in the E&SCP (JPA Section M);
- No fertilizers, lime or mulch will be used in wetland areas unless required in writing by applicable regulatory agencies;
- Within the temporary workspace and outside of the 30-foot maintained ROW, PFO and PSS wetlands will be planted with native woody plants that are adapted to wetland conditions; and
- After construction, disturbed wetlands and adjacent uplands will be monitored as required by state and federal permit conditions (annually for at least five years) to document long-term stabilization. Regular inspection and maintenance of erosion control measures will expedite successful restoration of the wetlands.

11.2.3 Watercourse Crossing BMPs

Pipeline construction across watercourses will be performed in accordance with state and federal permit conditions and the FERC Procedures (FERC, 2013b). PennEast will use one of the following dry crossing methods for installing the pipeline via conventional open-cut construction techniques within watercourses during construction:

- Flume crossing
- Dam and pump

- Cofferdam
- Dry Open-Cut (conventional trenching watercourses that are dry/during periods of no flow or frozen at the time of crossing)

To minimize the potential for adverse effects to watercourses, PennEast will implement the following BMPs outlined in the E&SCP (JPA Section M) when conducting pipeline installation activities:

- PennEast proposes to cross all watercourses with discernible flow at the time of construction with a dry-crossing technique, except where specific conditions render a dry crossing infeasible;
- PennEast will install compost filter socks across and along the edge of the construction ROW, where indicated on the approved E&SCP (JPA Section M) and wherever necessary, to minimize the flow of sediment into watercourses;
- PennEast will construct a temporary equipment bridge over each stream to minimize direct impacts from equipment travel;
- PennEast will minimize watercourse impacts using the bypass and flumed crossing techniques, which will prevent stream flow over an open trench;
- Stream flow will be restored after the banks have been stabilized;
- Across minor watercourses, or those less than 10 feet wide from TOB to TOB, PennEast will install the pipe and restore the stream banks within 24 hours of trenching;
- For intermediate watercourses (those streams between 10 feet and 100 feet wide from TOB to TOB), PennEast will construct the crossing and restore the stream banks within 48 hours;
- PennEast will install temporary trench plugs at the edges of watercourses to prevent the flow of upland sediments or other potential pollutants into watercourses during construction;
- To protect trout populations, PennEast will complete in-stream construction activities outside of the March 1 to June 15 window for trout stocked streams, outside of the October 1 to December 31 window for wild (naturally reproducing) trout streams, and outside of the October 1 to April 1 window for Class A wild trout streams, unless otherwise approved by the Pennsylvania Fish and Boat Commission (PFBC);
- PennEast will install temporary trench plugs at the edges of watercourses, as necessary, to prevent the flow of upland sediments or other potential pollutants into the watercourses during construction;
- PennEast will install permanent trench plugs at the edges of watercourses before the trench is backfilled to restore the hydrology to preconstruction conditions;
- Erosion control fabric will be installed within 50 feet of each watercourse, and within 100 feet of high quality (HQ) or EV watercourses to help stabilize the soil until permanent vegetative cover is achieved; and
- PennEast will maintain a minimum 100-foot buffer from watercourses to refuel vehicles, store or transfer liquid hazardous materials, and field coat pipeline segments with concrete, unless otherwise approved by the EI and secondary containment is implemented.

11.2.4 Watercourse Restoration

PennEast will use the following criteria to restore disturbed watercourses to as close to their pre-construction condition as practical:

- Clean stone or native cobbles will be used for the upper 1-foot of trench backfill in watercourses that contain coldwater fisheries.
- Watercourse banks will be returned to pre-construction contours or to a stable angle of repose as approved by the applicable regulatory agencies;
- Use of alternative materials for bank stabilization will comply with applicable regulatory agency approvals. In general, PennEast, to the extent practical, will employ natural stream bank restoration techniques detailed in the E&SCP (JPA Section M) before using approved alternative stabilization. The use of approved alternatives will generally be limited to areas where flow conditions preclude effective vegetative stabilization techniques such as seeding and erosion control fabric;
- Disturbed riparian areas will be revegetated in accordance with the Wetland and Riparian Reforestation Plan (JPA Section L4-A).
- Permanent slope breakers will be installed across the construction ROW at the base of slopes as described in the E&SCP (JPA Section M), or as needed to prevent sediment transport into the watercourse; and
- Sediment barriers will be installed as outlined in the E&SCP (JPA Section M) and as approved or specified by the EI.

11.2.5 Wetland and Riparian Buffer Reforestation

PennEast proposes to enhance restoration in PFO and PSS wetlands and within forested riparian buffers. As stated in the Wetland and Riparian Reforestation Plan (JPA Appendix L-4A), Ernst FACW Meadow Mix (ERNMX-122), or an alternative conservation wetland seed mix that contains similar species, will be used to stabilize impacted wetlands. The Ernst Riparian Buffer Mix (ERNMX-178), or an alternative conservation riparian seed mix that contains similar species, will be used in riparian areas. Additionally, impacted PSS wetlands will be replanted with wetland shrub species, and PFO wetlands and forested riparian buffers will be replanted with tree and shrub species that are adapted to the local hydrologic conditions. Planting will occur within the impacted wetland or riparian buffers, but outside of the 30-foot maintained ROW. Within EV watersheds, PennEast proposes to plant shrubs within the 30-foot wide ROW, excluding a 10-foot wide corridor centered on the pipeline. No plantings will occur within 5 feet of the pipeline.

11.2.6 Operation and Maintenance

The proposed facilities would be operated and maintained in a manner to provide a safe, continuous supply of natural gas reaches each of the delivery points. PennEast would maintain a 30-foot wide permanent ROW in upland, wetland, and riparian areas as herbaceous and scrub shrub cover. Within the 30-foot maintained ROW in wetlands, trees within 15 feet of the pipeline that could compromise the integrity of the pipeline may be selectively cut and removed from the ROW. A permanent 10-foot wide cleared corridor would be maintained as herbaceous cover through wetlands in accordance with FERC's Plan and Procedures (FERC 2013a, 2013b). No herbicides or pesticides would be used for the clearing or maintenance of the temporary or permanent ROW or within 100-feet of a watercourse.

12.0 Trenchless Feasibility Analyses

As described in Section 11.1, PennEast evaluated site-specific conditions, and determined the most appropriate crossing method for each wetland and watercourse. The results of the overall evaluation are

presented in Appendix NO-S-4. Due to the sensitivity of specific resources, including wetlands, watercourses, interstates, and railroads that could not be avoided by the Project, and the complexity of the site-specific challenges that these crossings presented in the Project design, PennEast completed more extensive evaluations in several locations. In Northampton County, these crossings included a Blue Mountain Wetland Complex and Hokendauqua Creek crossings, which are summarized in Table NO-S-4.

Table NO-S-4
Summary of Primary Crossing Methods for Select Sensitive Areas in Northampton County

Location/Feature	MP	Approximate Length (feet)	Proposed Primary Construction Method
Blue Mountain Wetland Complex	52.7 R3– 52.9 R3	900 ¹	Open Cut
Hokendauqua Creek	55.9	51	Open Cut

¹ Combined length of wetlands and uplands through multiple wetland and watercourse crossings.

12.1 Blue Mountain Wetland Complex (MP 52.7R3 – 52.9R3)

PennEast proposes to use a conventional open cut crossing method to construct the pipeline under the Blue Mountain Wetland Complex near the toe of slope on the south side of Blue Mountain (specifically 080917_WA_003_PEM, 080917_WA_002_PEM, and 080917_WA_002_PEM, 080917_WA_002_PSS and 110217_WA_001_PSS).

PennEast evaluated alternative trenchless construction methods to cross the wetland-watercourse complex using the HDD method. Due to site topography, this trenchless method was determined to be infeasible. The required workspace for an HDD option would include an approximately 200-foot-wide by 200-foot-long relatively flat workspace at the HDD entry point and an approximately 150-foot by 150-foot workspace at the HDD exit point. A pipe staging area of 50 feet wide along the installation length would be required to fully fabricate the pipe string. To install the pipeline using the HDD method under the wetlands, their upland buffers, and adjacent wetlands and streams, one bore pit would need to be sited north of the wetlands on the steep slope of Blue Mountain in SGL No. 168, with the other bore pit south of the wetlands. The topographic limitations at this location would make an HDD infeasible due to the vertical elevation difference between entry and exit points is a high-risk factor in HDD success. The vertical elevation difference at this location would be substantial, resulting in potential hole collapse, bore instability/raveling, hole flushing events with drilling fluids, and dry hole conditions, and significant potential for scarring/damage to the product pipe. The northern bore pit would be sited on a steep slope. A relatively flat entry or exit HDD pad is needed. For this option, a significant excavation would be needed to carve out a flat area for the construction pad and access roads to the pad. This would result in significant movement of earth for such an option. Because the site constraints and topographic limitations of an HDD at this location alone make this drill infeasible, PennEast did not complete a geotechnical analysis of this trenchless crossing method.

Auger and guided bore installations were evaluated. PennEast could use four conventional bores to avoid trenching within the wetland complexes. However, PennEast determined that conventional bores are not practicable in these locations since using conventional bores to construct the pipeline below the wetlands would result in unnecessary earth disturbance in the adjacent uplands. Each pit (total of 8) would require a

bell hole of approximately 20 feet by 80 feet long and 7 feet deep for a standard crossing. Additional workspace would be required to temporarily store the spoil from each pit. Spoil piles pose additional sources for sedimentation within the adjacent wetlands and streams, a risk that would be substantially reduced using conventional open cut construction methods. The conventional bore would eliminate trenching within the wetlands, but it would not eliminate the need for temporary equipment crossings. PennEast would not be able to access some of the bore pits without crossing the streams and wetlands. Therefore, direct impacts to the wetlands could not be avoided. Each of the eight bore pits would be located adjacent wetlands. Based on the spring fed hydrology of these wetlands, substantial dewatering may be required to construct the bores. Installing the pipeline using conventional bores would take substantially longer than using conventional open cut construction techniques. Each bore would likely take at least one week to construct, which could be extended based on terrain, length of bore, and if substantial dewatering is necessary. After completing the bore, PennEast would still need to complete the tie-in to the mainline, which may require construction crews to continue working in the area beyond the period of the bore itself.

To minimize impacts to the wetland-watercourse complex, the workspace has been reduced to 50 feet wide through this area.

12.2 Hokendauqua Creek (MP 55.9)

PennEast proposes to use a dry open-cut crossing to construct the pipeline under Hokendauqua Creek (051215_JC_1002_P_IN). A conventional watercourse construction method was selected for this crossing due to several site challenges. There are steep slopes to the north of the crossing. These slopes are in excess of 29 degrees and would require extremely deep bore pits to accommodate a conventional bored crossing. In addition, bends in the alignment to the north and south of this crossing, as well as elevation differences that exceed 300 feet, would result in an extremely long drill with associated workspace impact for pullback and staging. To minimize impacts associated with this stream crossing, the workspace has been reduced to 75 feet through the watercourse channel and floodway.

13.0 Alternatives Summary

If the proposed Project is not constructed (i.e., the no-action alternative), PennEast will not have the ability to satisfy the service that has been subscribed by the Project shippers under long-term firm contracts, which include multiple, unique receipt and delivery point combinations located along the PennEast system. Furthermore, PennEast is not aware of any other pipeline alternative that could satisfy the unique receipt and delivery point combinations subscribed under its agreements with the Project shippers.

The use of alternative fuels to supply the energy needs of natural gas customers is not the best practicable alternative when compared to the use of cleaner-burning natural gas and may not conform to the immediate specific needs of specific customers (e.g., customers configured to burn natural gas cannot quickly switch to alternative fuels and cannot switch without considerable expense). In addition, although energy conservation is a valuable part of an overall energy supply plan, energy conservation alone will not meet the immediate energy demand for the market to be served by the Project.

PennEast evaluated route and construction method alternatives and incorporated the most practicable alternative into the Project design. Publicly available data, field reconnaissance observations, agency and public comments, and wetland and watercourse delineation results were used in the analysis. Wherever



possible, PennEast avoided wetland and watercourse impacts by routing the pipeline around and siting the workspace outside of protected resources. If avoidance was not possible, PennEast minimized impacts by reducing the construction ROW width across wetlands and watercourses and crossing wetlands and watercourses at perpendicular angles and narrow locations. PennEast will use specialized open-cut crossing techniques as well as trenchless crossing methods to construct across wetlands and watercourses to reduce the duration and extent of earth disturbance associated with the Project.

To minimize impacts further, PennEast will implement BMPs outlined in the Project E&SCP (JPA Section M) and FERC Plan and Procedures (FERC 2013a, 2013b), as well as additional recommendations provided by federal and state agencies. After the pipeline is constructed, wetlands and watercourses will be restored to pre-construction contours to the greatest extent practicable, and restored locations will be monitored annually for five years, or until wetland revegetation is successful as defined by the FERC Procedures (FERC 2013b) and anticipated state and federal permit conditions, to ensure proper restoration and revegetation efforts are achieved.

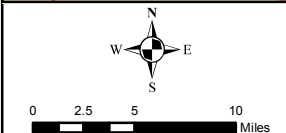
14.0 References

Federal Energy Regulatory Commission (FERC). 2017. PennEast Pipeline Project. Final Environmental Impact Statement – Volume 1. FERC EIS 0271F. April. Available online at: <https://www.ferc.gov/industries/gas/enviro/eis/2017/04-07-17-FEIS.asp>.

FERC. 2013a. Upland Erosion Control, Revegetation, and Maintenance Plan, May 2013 Version. Available at: www.ferc.gov/industries/gas/enviro/plan.pdf. Accessed April 17, 2018.

FERC. 2013b. Wetland and Waterbody Construction and Mitigation Procedures, May 2013 Version. Available at: <https://www.ferc.gov/industries/gas/enviro/procedures.pdf>. Accessed April 17, 2018.

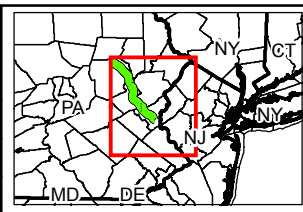
JPA Section S-1 - Northampton County
Key Route Alternative Figures



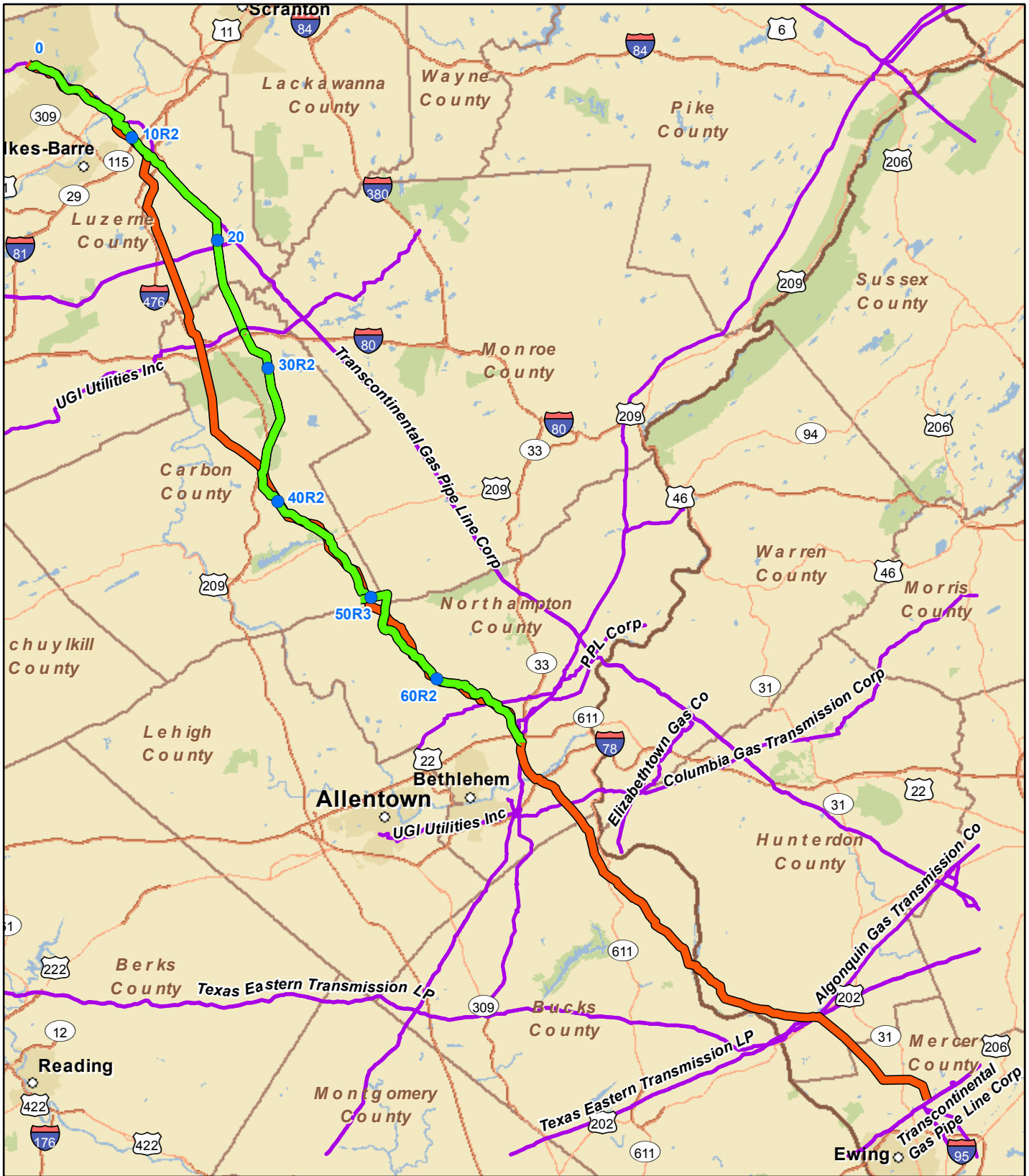
- Legend**
- Mile Post
 - Phase 1 Route
 - Transco Leidy Pipeline
 - Existing Gas Pipeline

Reference:
esri Streets

TITLE:		Figure 1 Phase 1 of PennEast Pipeline Project Transco Leidy Line	
<small>LOC: Y:\GIS\Projects\UGI\PennEast\MXD\2017 JPA\Module3\AlternativesAnalysis_Nov2016\Updated Fig #s 1122018\Figure 1 PennEast Pipeline Project Alternative Routes Map - Transco Leidy Line.mxd</small>		REV.:	
CKD. BY: BH	ENG.:	Date: 9/22/2020	W.O.:
DRN. BY: KFS	SCALE: SEE GRAPHIC SCALE	DWG. NO.:	SHEET:



PennEast Pipeline Company, LLC



Reference:
esri Streets



0 2.5 5 10 Miles

Legend

- Mile Post
- PennEast Original Route
- Phase 1 Route
- Existing Gas Pipeline

TITLE: **Figure 2**
Phase 1 of PennEast Pipeline Project
Original Route

LOC: Y:\GIS\Projects\UGI\PennEast\MXD\2017_JPA\Module3\AlternativesAnalysis_Nov2016\Updated Fig #s
11122018\Figure 3 PennEast Pipeline Project Alternative Routes Map - Original Route.mxd

CKD. BY: BH

ENG.:

Date: 9/22/2020

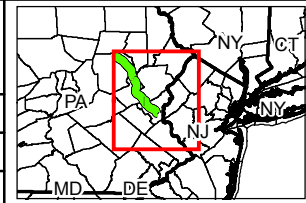
W.O.:

DRN. BY: KFS

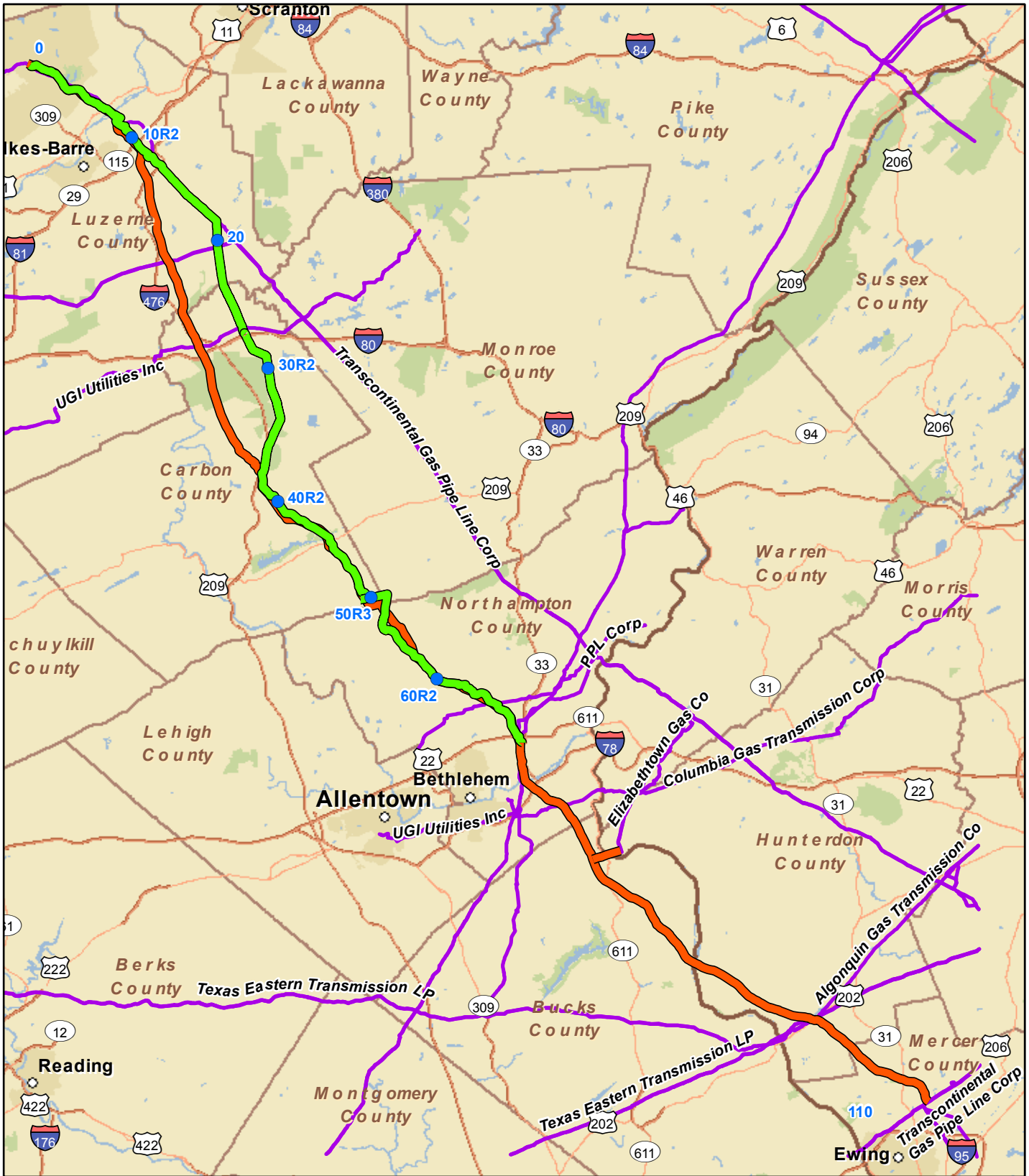
SCALE: SEE GRAPHIC SCALE

DWG. NO.:

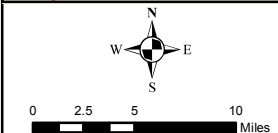
SHEET:



PennEast Pipeline Company, LLC

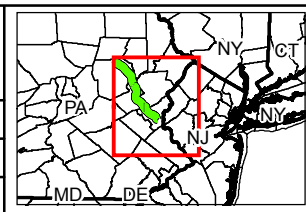


Reference:
esri Streets

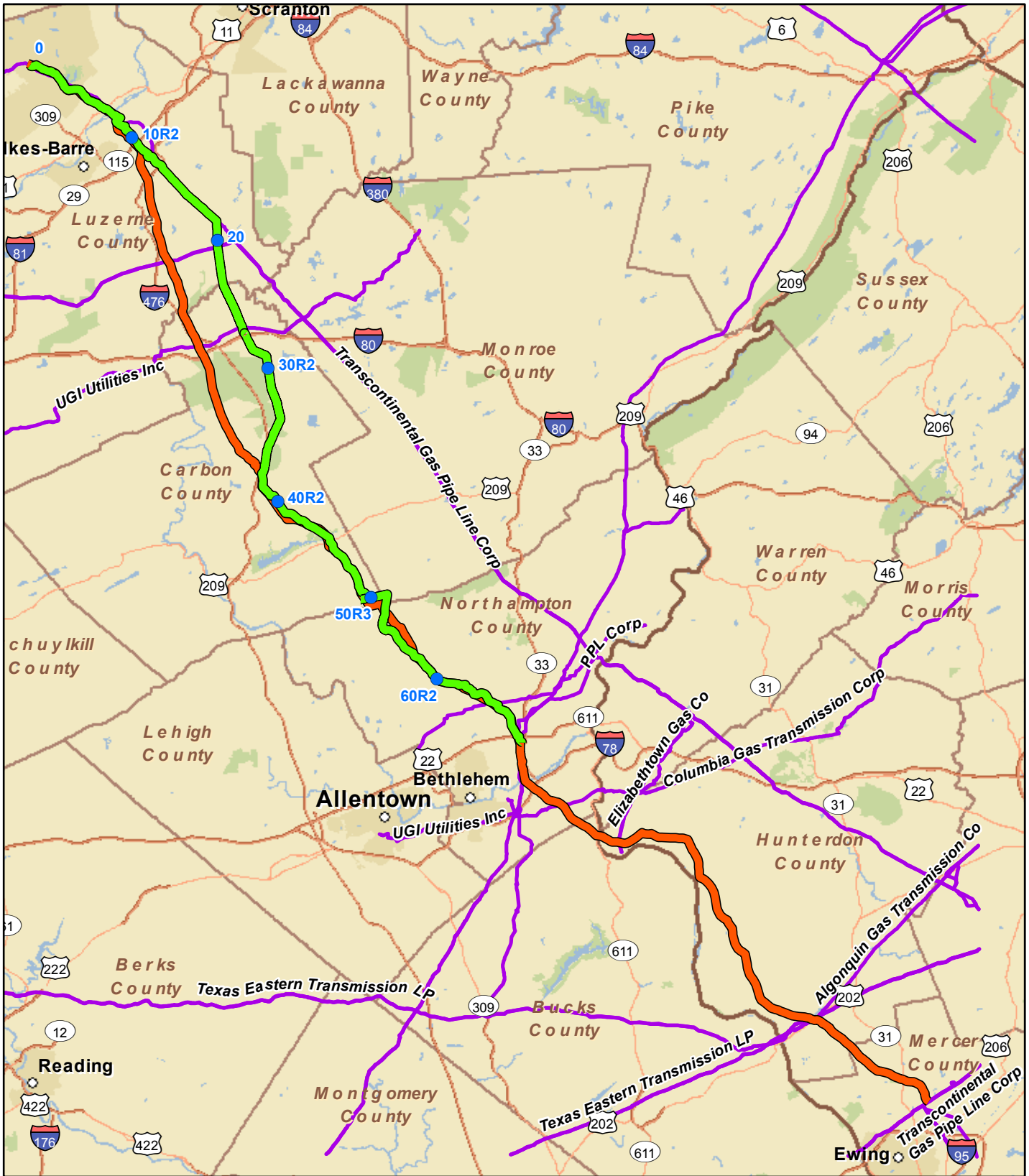


Legend	
● Mile Post	— PennEast Alternative 1 to Original Route with ETG Spur
— Phase 1 Route	— Existing Gas Pipeline

TITLE: Figure 3 Phase 1 of PennEast Pipeline Project Alternative 1 to Original Route with ETG Spur			
LOCCY:\GIS\Projects\UGI\PennEast\IMXD\2017 JPA\Module3\AlternativesAnalysis_Nov2016\Updated Fig #s 11122018\Figure 4 PennEast Pipeline Project Alternative Routes Map - Alternative 1 to Original Route with ETG Spur.mxd		REV.:	
CKD. BY: BH	ENG.:	Date: 9/22/2020	W.O.:
DRN. BY: BSF/KFS	SCALE: SEE GRAPHIC SCALE	DWG. NO.:	SHEET:



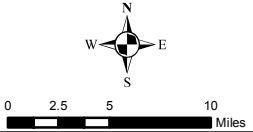
PennEast Pipeline Company, LLC



Reference:
esri Streets

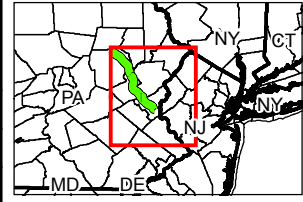
Legend

- MP**
- █ Phase 1 Route
 - █ PennEast Alternative 2 to Original Route with NJ Loop (Initial Preferred Route)
 - Mile Post
 - █ Existing Gas Pipeline

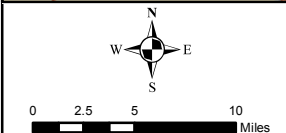


TITLE: **Figure 4**
Phase 1 of PennEast Pipeline Project
Alternative 2 to Original Route

<small>LOC: Y:\GIS\Projects\UGI\PennEast\MXDs\2017_JPA\Module3\AlternativesAnalysis_Nov2016\Updated Fig #s 11122018\</small> <small>Figure 5 PennEast Pipeline Project Alternative Routes Map - Alternative 2 to Original Route with NJ Loop (Init. Preferred).mxd</small>		REV.:
CKD. BY: BH	ENG.:	Date: 9/22/2020
DRN. BY: BSF/KFS	SCALE: SEE GRAPHIC SCALE	DWG. NO.:
		SHEET:



PennEast Pipeline Company, LLC

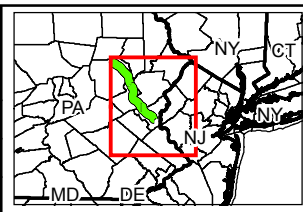


Legend	
● Mile Post	— PennEast November 2014 Preferred Route
— Phase 1 Route	— Existing Gas Pipeline

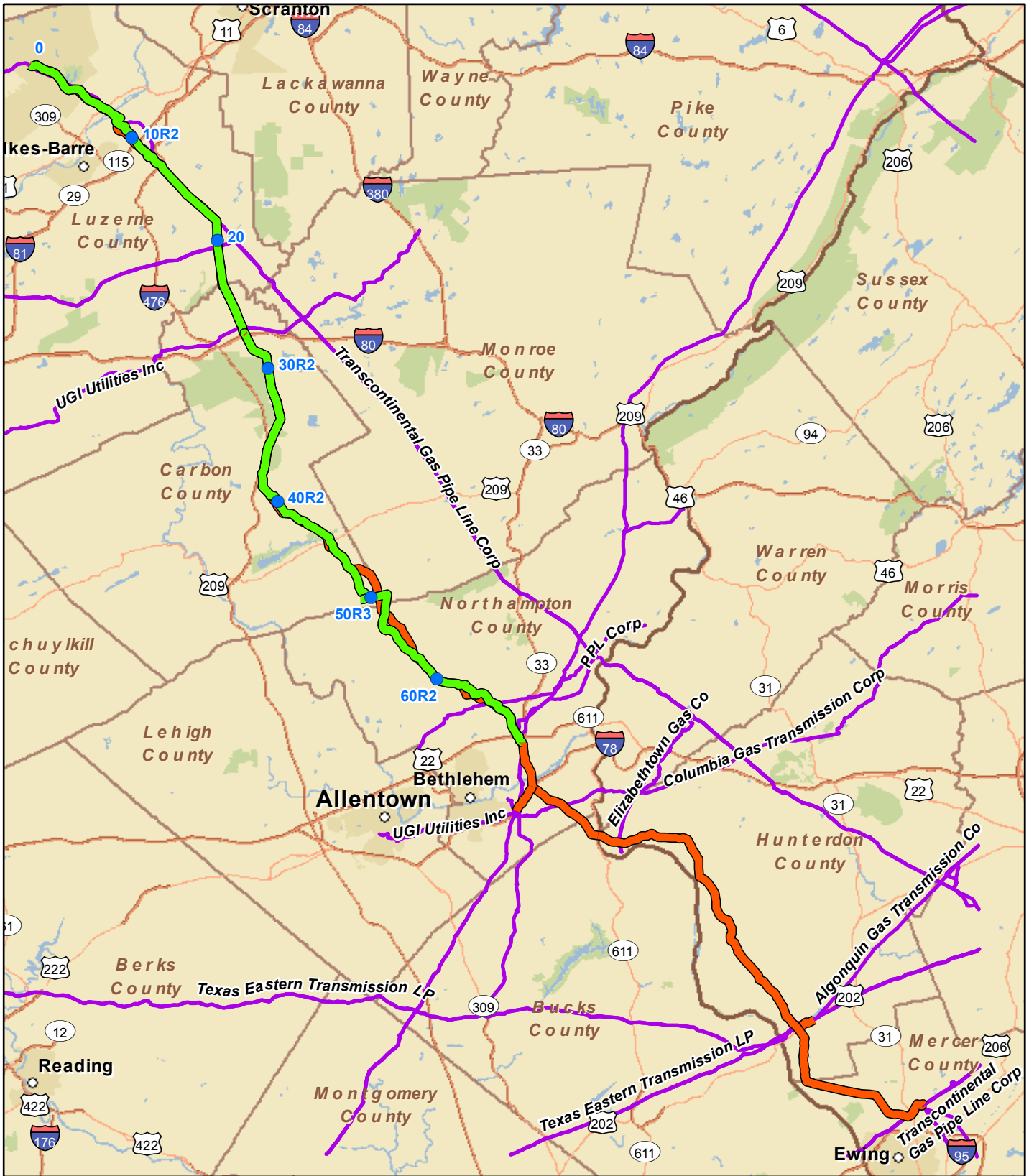
Reference:
esri Streets

TITLE: **Figure 5**
Phase 1 of PennEast Pipeline Project
November 2014 Preferred Route -

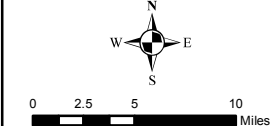
LOC: Y:\GIS\Projects\UGI\PennEast\MXD\2017 JPA\Module3\AlternativesAnalysis_Nov2016\Updated Fig #s 11122018\Figure 6 PennEast Pipeline Project Alternative Routes Map - Preferred Route - November 2014.mxd		REV.:
CKD. BY: BH	ENG.:	Date: 9/22/2020
DRN. BY: BSF/KFS	SCALE: SEE GRAPHIC SCALE	DWG. NO.:
		SHEET:



PennEast Pipeline Company, LLC



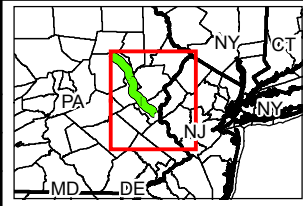
Reference:
esri Streets

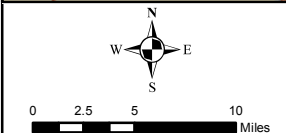
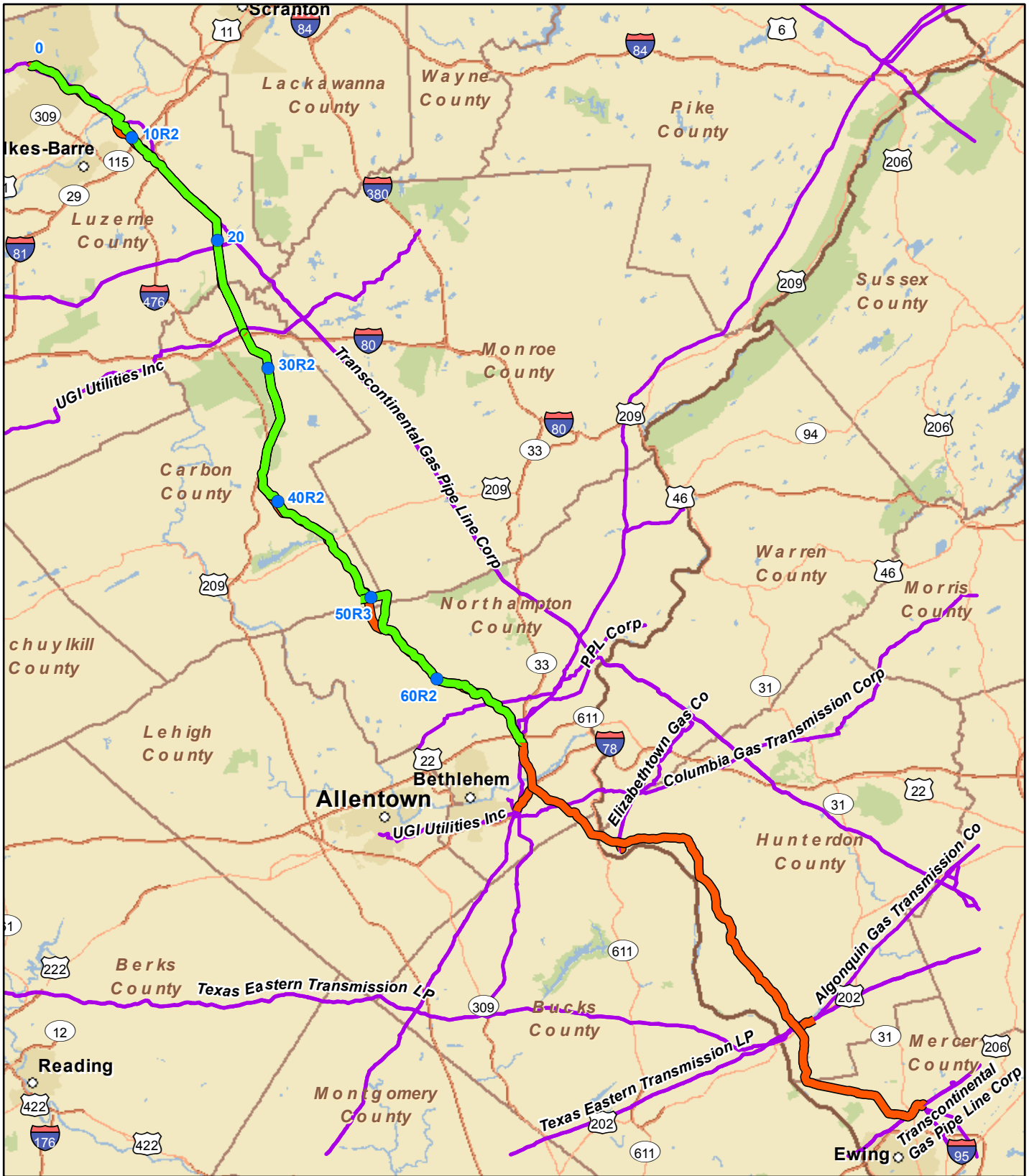


Legend	
● Mile Post	— PennEast January 2015 Preferred Route
— Phase 1 Route	— Existing Gas Pipeline

TITLE: **Figure 6**
Phase 1 of PennEast Pipeline Project
January 2015 Preferred Route

LOC: Y:\GIS\Projects\UGI\PennEast\MXD\2017 JPA\Module3\AlternativesAnalysis_Nov2016\Updated Fig #s 11122018\Figure 7 PennEast Pipeline Project Alternative Routes Map - Preferred Route - January 2015.mxd		REV.:
CKD. BY: BH	ENG.:	Date: 9/22/2020
DRN. BY: BSF/KFS	SCALE: SEE GRAPHIC SCALE	DWG. NO.:
		SHEET:



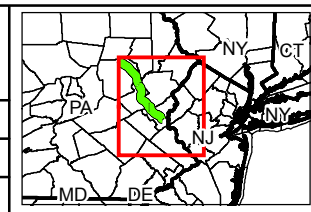


Legend	
● Mile Post	— PennEast March 2015 Preferred Route
— Phase 1 Route	— Existing Gas Pipeline

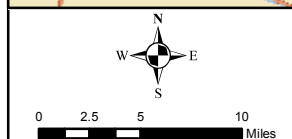
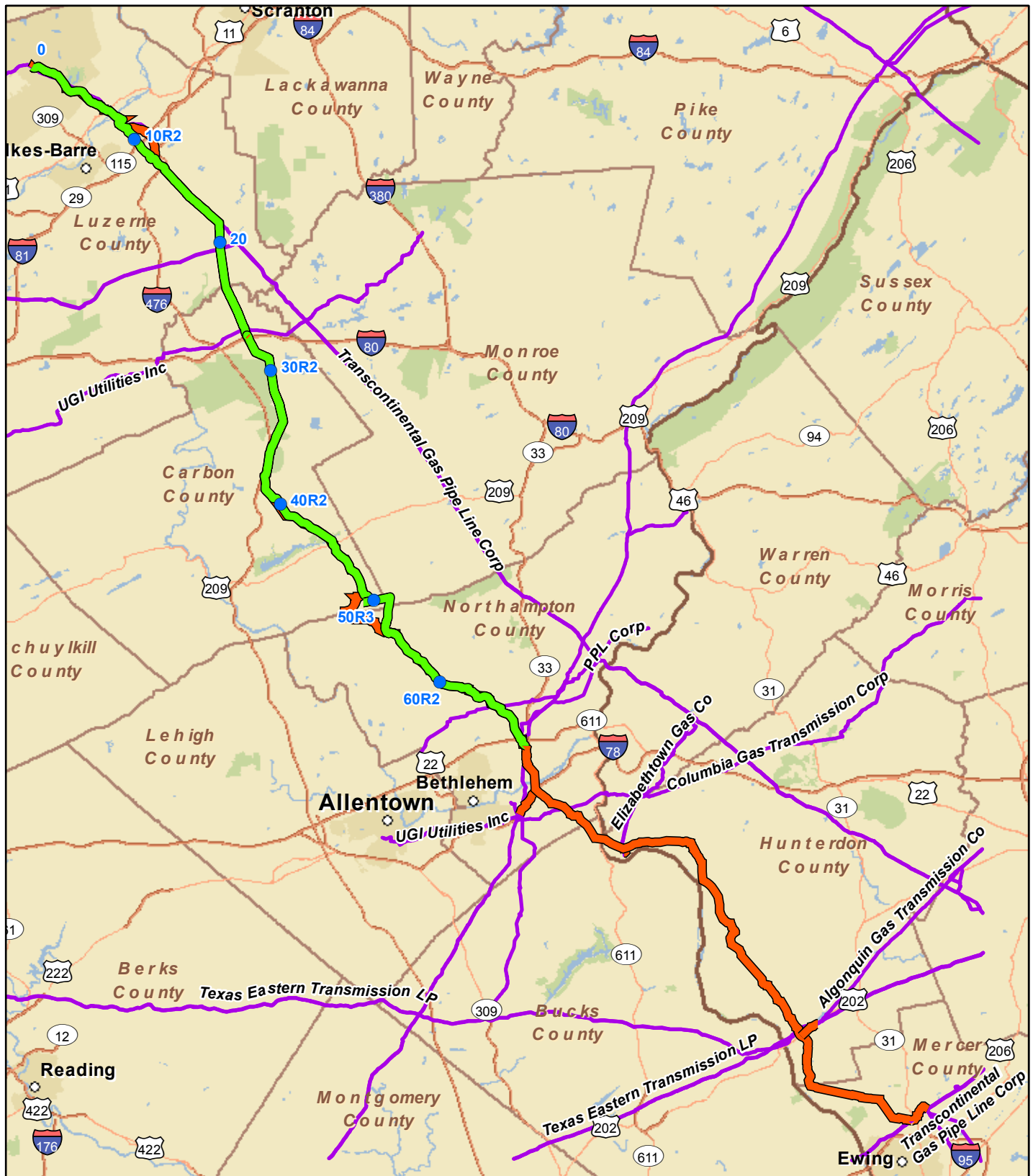
Reference:
esri Streets

TITLE: **Figure 7**
Phase 1 of PennEast Pipeline Project
March 2015 Preferred Route

LOC: Y:\GIS\Projects\UGI\PennEast\MXD\2017 JPA\Module3\AlternativesAnalysis_Nov2016\Updated Fig #s 11122018\Figure 8 PennEast Pipeline Project Alternative Routes Map - Preferred Route - March 2015.mxd		REV.:
CKD. BY: BH	ENG.:	Date: 9/22/2020
DRN. BY: BSF	SCALE: SEE GRAPHIC SCALE	DWG. NO.:
		SHEET:



PennEast Pipeline Company, LLC

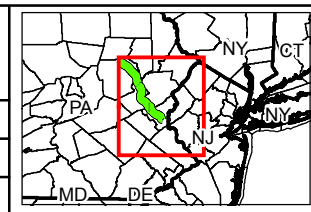


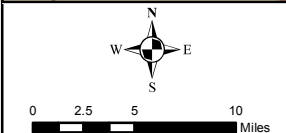
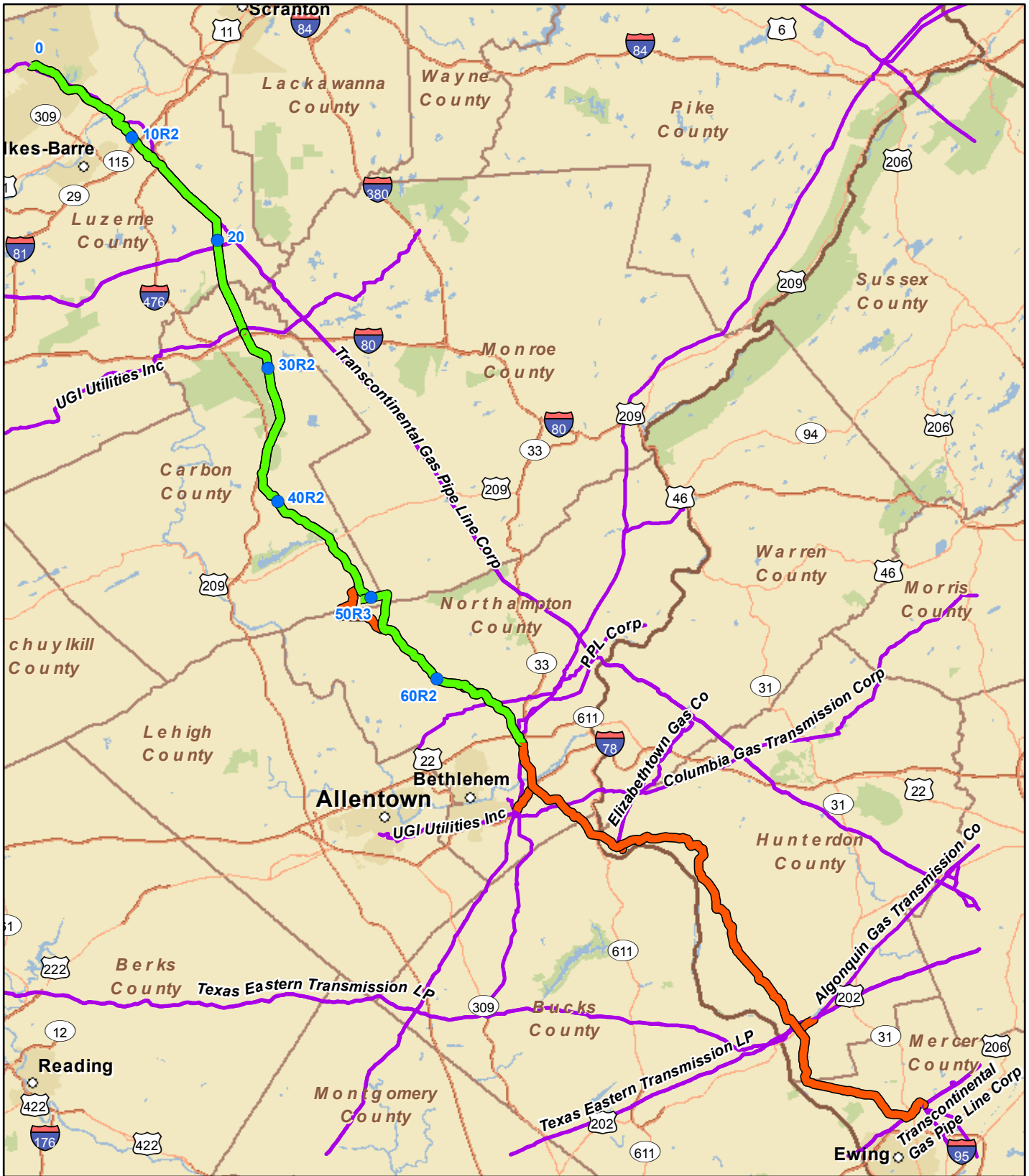
Legend	
● Mile Post	— PennEast September 2015 Preferred Route
— Phase 1 Route	— Existing Gas Pipeline

Reference:
esri Streets

TITLE: **Figure 8**
Phase 1 of PennEast Pipeline Project
September 2015 Preferred Route

LOC: Y:\GIS\Projects\UGI\PennEast\MXD\9\2017 JPA\Module3\AlternativesAnalysis_Nov2016\Updated Fig #s 11122018\Figure 9 PennEast Pipeline Project Alternative Routes Map - Preferred Route - September 2015.mxd		REV.:
CKD. BY: BH	ENG.:	Date: 9/22/2020
DRN. BY: BSF/KFS	SCALE: SEE GRAPHIC SCALE	DWG. NO.:
		SHEET:



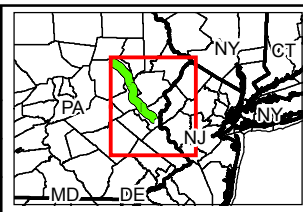


Legend	
● Mile Post	— PennEast September 2016 Proposed Route
— Revised PA Route	— Existing Gas Pipeline

Reference:
esri Streets

TITLE: **Figure 9**
Phase 1 of PennEast Pipeline Project
September 2016 Preferred Route

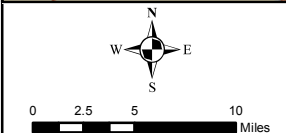
LOC: Y:\GIS\Projects\UGI\PennEast\MXD\2017 JPA\Module3\AlternativesAnalysis_Nov2016\Updated Fig #s 11122018\Figure 10 PennEast Pipeline Project Alternative Routes Map - Preferred Route - September 2016.mxd		REV.:
CKD. BY: BH	ENG.:	Date: 9/22/2020
DRN. BY: BSF/KFS	SCALE: SEE GRAPHIC SCALE	DWG. NO.:
		SHEET:



PennEast Pipeline Company, LLC



Reference:
esri Streets

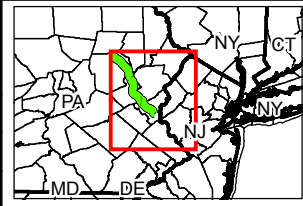


Legend	
● Mile Post	— Revised PA Route
— Phase 1 Route	— Existing Gas Pipeline

TITLE: **Figure 10
Phase 1 of PennEast Pipeline Project
Revised PA Route**

LOC: Y:\GIS\Projects\UGI\PennEast\MXD\2017 JPA\Module3\AlternativesAnalysis_NoV2016\Updated Fig #'s 11122018\Figure 10 PennEast Pipeline Project Alternative Routes Map - Preferred Route - September 2016.mxd

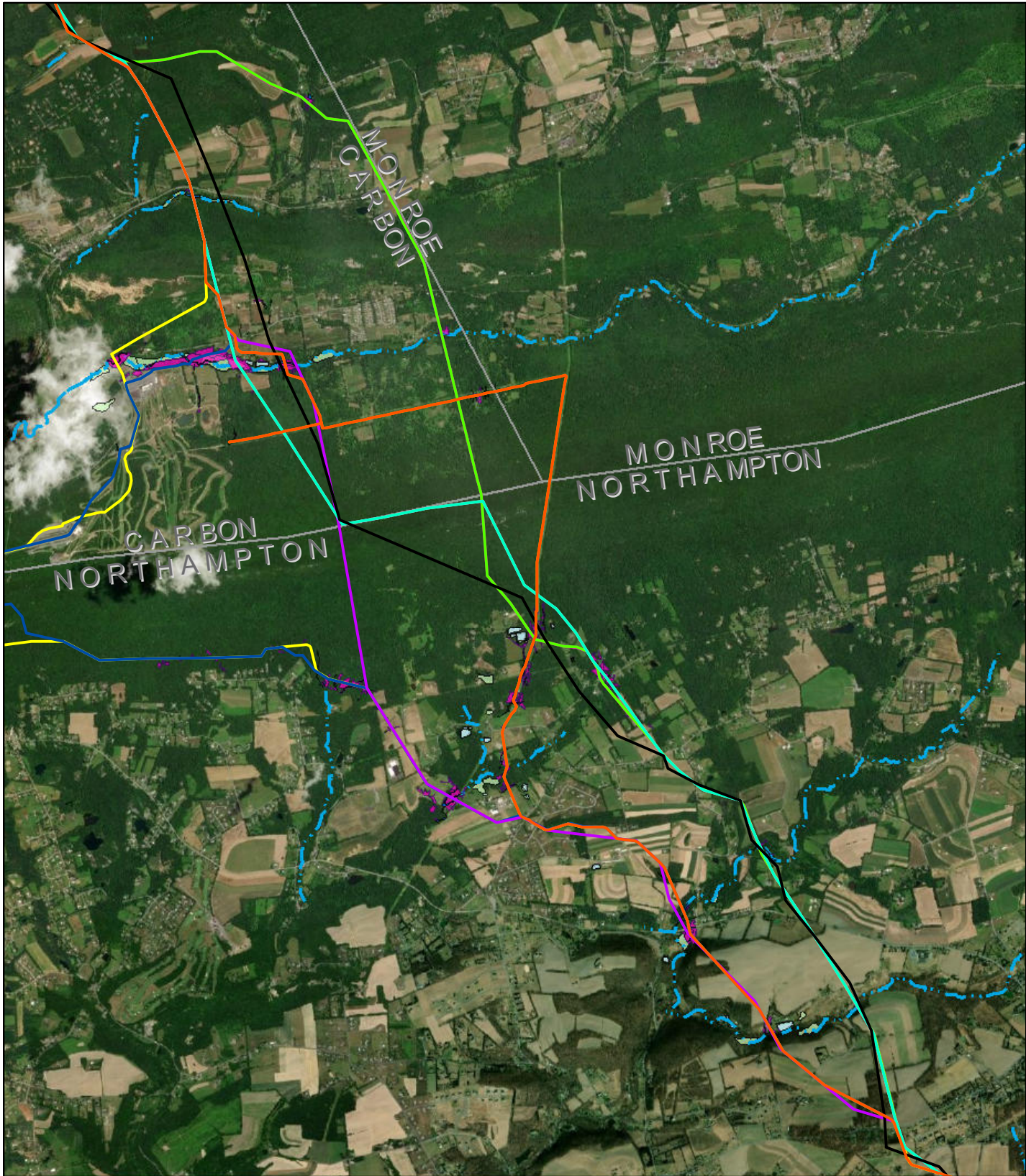
CKD. BY: BH	ENG.:	Date: 9/22/2020	REV.:
DRN. BY: BSF/KFS	SCALE: SEE GRAPHIC SCALE	DWG. NO.:	SHEET:



PennEast Pipeline Company, LLC

JPA Section S-2 - Northampton County

Route Deviation Figures



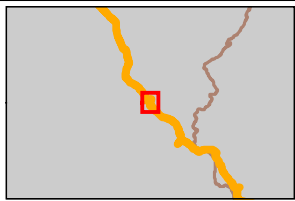
0 0.1875 0.375 0.75 Miles

Legend

- Phase 1 Route
- Revised PA Route
- Original Route
- Alternative to Original Route with ETG Spur
- Alternative 2 to Original Route with NJ Loop
- November 2014 Preferred Route
- January 2015 Preferred Route
- March 2015 Preferred Route
- September 2015 Preferred Route
- September 2016 Preferred Route
- Delineated Waterbody
- Delineated Wetland
- Public Stream
- Public Water
- Public Wetland
- County Boundary

TITLE: Route Deviation NO-1 Figure
Phase 1 of PennEast Pipeline Project

Reference: ESRI World Imagery 2016



PennEast Pipeline Company, LLC

LOC: NORTHAMPTON COUNTY		REV.:	
CKD. BY:	ENG.:	Date: 9/25/2020	W.O.:
DRN. BY: NAB	SCALE: SEE GRAPHIC SCALE	DWG. NO.:	SHEET: 1 of 1



0 62.5 125 250 Feet

Legend

- Revised PA Route
- September 2016 Preferred Route
- Delineated Waterbody*
- Delineated Wetland*
- Public Stream*
- Public Water*
- Public Wetland*
- County Boundary

*none within current extent

TITLE:
Route Deviation NO-2 Figure
Phase 1 of PennEast Pipeline Project

Reference:
ESRI World Imagery 2016



PennEast Pipeline Company, LLC

LOC: NORTHAMPTON COUNTY		REV.:	
CKD. BY:	ENG.:	Date: 9/25/2020	W.O.:
DRN. BY: NAB	SCALE: SEE GRAPHIC SCALE	DWG. NO.:	SHEET: 1 of 1



0 150 300 600 Feet

Legend

- September 2015 Preferred Route
- September 2016 Preferred Route
- Delineated Waterbody
- Delineated Wetland
- Public Stream
- Public Water*
- Public Wetland
- County Boundary

*none within current extent

TITLE: Route Deviation NO-3 Figure
Phase 1 of PennEast Pipeline Project

Reference: ESRI World Imagery 2016



PennEast Pipeline Company, LLC

LOC: NORTHAMPTON COUNTY		REV.:	
CKD. BY:	ENG.:	Date: 9/24/2020	W.O.:
DRN. BY: NAB	SCALE: SEE GRAPHIC SCALE	DWG. NO.:	SHEET: 1 of 1



0 100 200 400 Feet

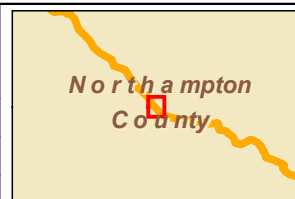
Legend

- September 2015 Preferred Route
- September 2016 Preferred Route
- Delineated Waterbody
- Delineated Wetland
- Public Stream
- Public Water*
- Public Wetland*
- County Boundary

*none within current extent

TITLE: Route Deviation NO-4 Figure
Phase 1 of PennEast Pipeline Project

Reference:
ESRI World Imagery 2016



PennEast Pipeline Company, LLC

LOC: NORTHAMPTON COUNTY		REV.:	
CKD. BY:	ENG.:	Date: 9/24/2020	W.O.:
DRN. BY: NAB	SCALE: SEE GRAPHIC SCALE	DWG. NO.:	SHEET: 1 of 1



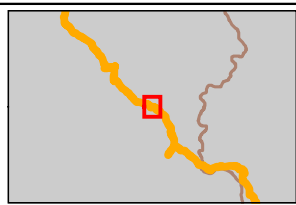
0 500 1,000 2,000 Feet

Legend

- Phase 1 Route
- Revised PA Route
- Original Route
- Alternative to Original Route with ETG Spur
- Alternative 2 to Original Route with NJ Loop
- November 2014 Preferred Route
- January 2015 Preferred Route
- March 2015 Preferred Route
- September 2015 Preferred Route
- September 2016 Preferred Route
- Delineated Waterbody
- Delineated Wetland
- Public Stream
- Public Water
- Public Wetland
- County Boundary

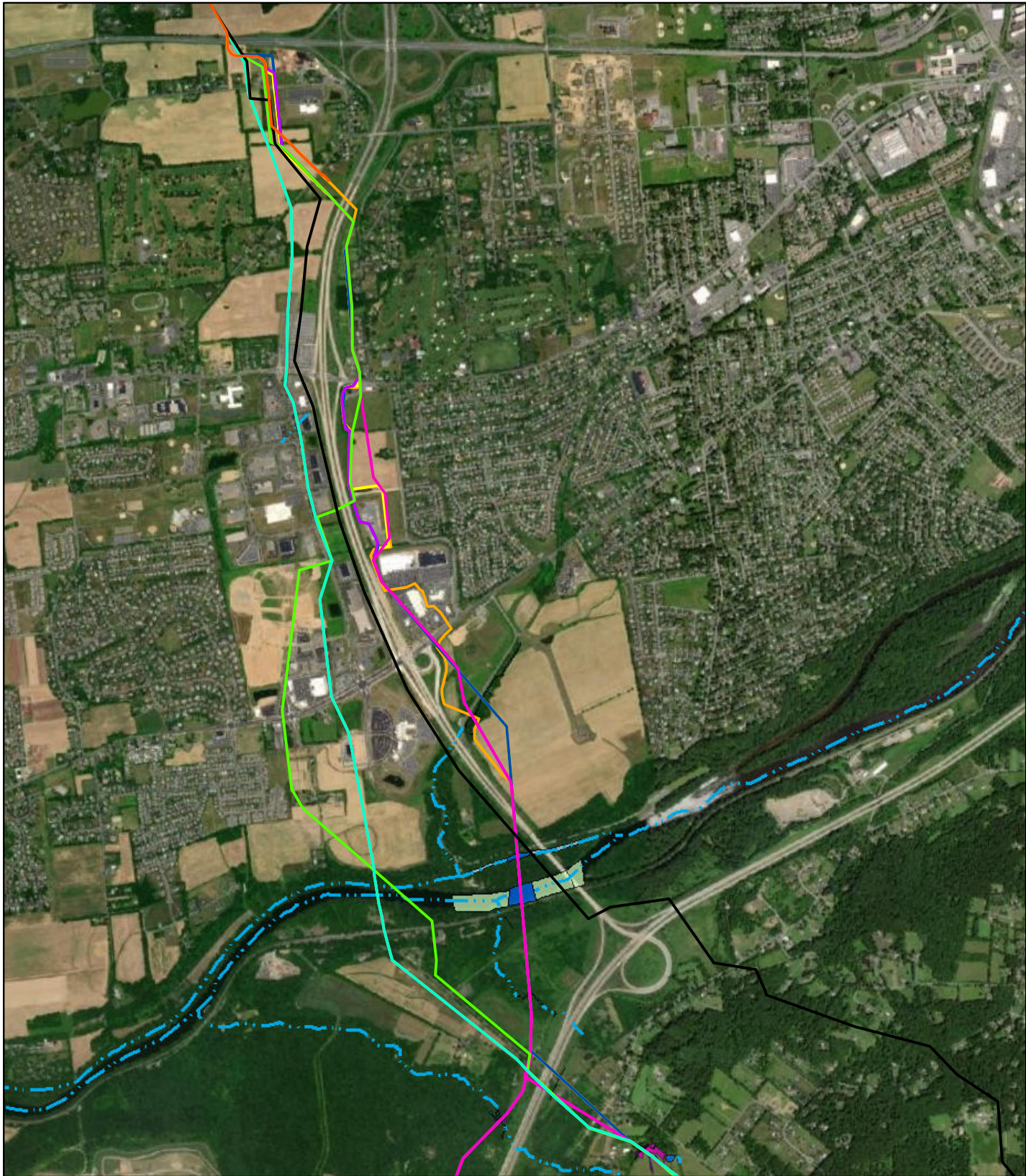
TITLE: Route Deviation NO-5 Figure
Phase 1 of PennEast Pipeline Project

Reference: ESRI World Imagery 2016



PennEast Pipeline Company, LLC

LOC: NORTHAMPTON COUNTY		REV.:	
CKD. BY:	ENG.:	Date: 9/25/2020	W.O.:
DRN. BY: NAB	SCALE: SEE GRAPHIC SCALE	DWG. NO.:	SHEET: 1 of 1



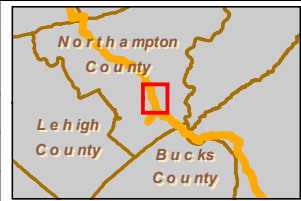
0 625 1,250 2,500 Feet

Legend

- Phase 1 Route
- Revised PA Route
- Original Route
- Alternative to Original Route with ETG Spur
- Alternative 2 to Original Route with NJ Loop
- November 2014 Preferred Route
- January 2015 Preferred Route
- March 2015 Preferred Route
- September 2015 Preferred Route
- September 2016 Preferred Route
- Delineated Waterbody
- Delineated Wetland
- Public Stream
- Public Water
- Public Wetland
- County Boundary

TITLE: Route Deviation NO-6 Figure
Phase 1 of PennEast Pipeline Project

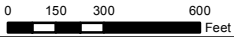
Reference: ESRI World Imagery 2016



PennEast Pipeline Company, LLC

LOC: NORTHAMPTON COUNTY		REV.:	
CKD. BY:	ENG.:	Date: 9/25/2020	W.O.:
DRN. BY: NAB	SCALE: SEE GRAPHIC SCALE	DWG. NO.:	SHEET: 1 of 1

JPA Section S-3 - Northampton County
Aboveground Facility Alternative Figures

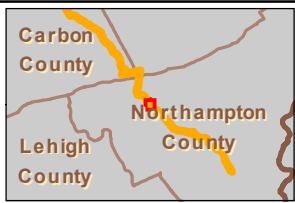


Legend

- Milepost
- Construction Limits (CL)
- Previous Proposed Permanent AGF (09/2016)
- Delineated Waterbody
- Public Water
- Centerline
- Current Proposed Permanent Aboveground Facility (AGF)
- Public Stream
- Public Wetland
- Access Road
- Delineated Wetland

TITLE:
MLV-6 Figure
 Phase 1 of PennEast Pipeline Project

Reference:
 ESRI World Imagery 2016



LOC: NORTHAMPTON COUNTY		REV.:	
CKD. BY:	ENG.:	Date: 9/23/2020	W.O.:
DRN. BY: HDB	SCALE: SEE GRAPHIC SCALE	DWG. NO.:	SHEET: 1 of 1

PennEast Pipeline Company, LLC

JPA Section S-4 - Northampton County

Site Specific Alternatives Analysis Tables

Alternatives Analysis Table
Riverine Resources
Northampton County

Watercourse ID and Crossing Number ¹	Watercourse Name	Milepost ²	Latitude	Longitude	Primary Pipeline Crossing Method ³	Secondary Pipeline Crossing Method ³	Tertiary Pipeline Crossing Method ³	Geology Constraints	Topography Constraints	Insufficient Workspace to Stage Trenchless	Practicality	Other (See Justification)	Implementing Trenchless Technology	Routing to Minimize	Crossing at Narrowest Location	Co-Locating	Reducing LOD	Minimizing Construction Duration	Adhering to Construction Timing Windows	Implementing BMPs	Justification
PennEast Mainline																					
080917_WA_1002_P_MI - 1	UNT to Indian Creek	52.7R3	40.800358	-75.474329	N/A	N/A	N/A				X	X			X	X	X	X	X	X	Workspace reduced to 50' in stream and floodway. Feature not crossed by pipeline.
080917_WA_1002_P_MI - 2	UNT to Indian Creek	52.7R3	40.800152	-75.474330	DPX	FX	CD				X	X			X	X	X	X	X	X	Workspace reduced to 50' in stream and floodway. Estimated crossing timeframe is 24 hours.
080917_WA_1002_P_MI - 3	UNT to Indian Creek	52.8R3	40.799784	-75.474398	N/A	N/A	N/A				X	X				X	X	X	X	X	Tree cutting to take place in 50 foot wide workspace. Earth disturbance activities reduced to 30' in stream and floodway.
110217_WA_1003_P_MI	UNT to Indian Creek	52.9R3	40.797543	-75.475202	DPX	FX	CD				X				X	X	X	X	X	X	Workspace reduced to 50' in stream and floodway. Estimated crossing timeframe is 24 hours.
080917_WA_1001_I_MI	UNT to Indian Creek	53.2R3	40.793855	-75.476191	DPX	FX	DX-NF				X	X			X		X	X	X	X	Workspace reduced to 75' through stream. Timing to cross justifies open cut. Estimated crossing timeframe is 24 hours.
050217_MB_1002_I_MI	UNT to Indian Creek	53.3R3	40.792107	-75.476103	DPX	FX	DX-NF				X	X			X		X	X	X	X	Workspace reduced to 75' through stream. Timing to cross justifies open cut. Estimated crossing timeframe is 24 hours .
050217_MB_1001_P_IN	UNT to Indian Creek	53.4R3	40.790992	-75.475861	DPX	FX	CD				X	X			X		X	X	X	X	Workspace reduced to 75' through stream. Timing to cross justifies open cut. Estimated crossing timeframe is 48 hours.
102815_WA_1001_E_MI	UNT to Hokendauqua Creek	55.7	40.783732	-75.459065	DPX	FX	DX-NF				X	X			X		X	X	X	X	Workspace reduced to 75' through stream. Timing to cross justifies open cut. Estimated crossing timeframe is 48 hours.
051215_JC_1002_P_IN	Hokendauqua Creek	55.9	40.781304	-75.457677	DPX	FX	CD	X			X	X					X	X	X	X	Steep slope on the east side of the crossing (29%) is impractical for trenchless methods (HDD, Direct Pipe and Microtunnel). Workspace reduced to 75' through stream and floodway. Estimated crossing timeframe is 14 days.
051215_JC_1001_E_MI	UNT to Hokendauqua Creek	55.9	40.780606	-75.457279	DPX	FX	DX-NF				X	X			X		X	X	X	X	Workspace reduced to 75' through stream. Timing to cross justifies open cut. Estimated crossing timeframe is 24 hours . PI to the immediate south along alignment would make staging trenchless crossing impractical.
051215_JC_1003_I_MI	UNT to Hokendauqua Creek	56	40.779940	-75.457029	BX	BX	BX				X	X	X		X		X		X	X	Trenchlessly crossed as part of Rte. 946 bore. Adjacent workspace required to facilitate bored crossing.
062218_WA_1000_P_MI	UNT to Hokendauqua Creek	56	40.779356	-75.456814	DPX	FX	CD			X	X	X			X			X	X	X	Existing route presents challenges to trenchless methods. Adjacent workspace required to facilitate bored crossing. Estimated crossing timeframe is 24 hours.
050417_GM_1002_P_MI	UNT to Hokendauqua Creek	56.7	40.772084	-75.448600	DPX	FX	CD	X			X	X			X			X	X	X	Slope south of the crossing (23%) would present challenges to trenchless methods (HDD, Direct Pipe & Microtunnel). Existing route presents challenges to trenchless methods. Workspace reduced to 75' in stream and floodway. Estimated crossing timeframe is 48 hours.
050417_GM_1003_P_IN	UNT to Hokendauqua Creek	56.7	40.771677	-75.448290	DPX	FX	CD	X			X	X			X		X	X	X	X	Slope south of the crossing (23%) would present challenges to trenchless methods (HDD, Direct Pipe & Microtunnel). Existing route presents challenges to trenchless methods. Workspace reduced to 75' in stream and floodway. Estimated crossing timeframe is 48 hours.
071917_MB_1001_I_MI	UNT to Monocacy Creek	58R2	40.760247	-75.429116	DPX	FX	DX-NF				X	X			X		X	X	X	X	Estimated crossing timeframe is 24 hours.
052218_WA_1001_E_MI	UNT to Monocacy Creek	58.1R2	40.759968	-75.427902	DPX	FX	DX-NF				X	X			X		X	X	X	X	Estimated crossing timeframe is 24 hours.
052218_WA_1002_P_MI	UNT to Monocacy Creek	58.5	40.755227	-75.423054	DPX	FX	CD	X			X	X			X		X	X	X	X	Steep slope north and south of the crossing (+15%) is impractical for trenchless methods (HDD, Direct Pipe, Microtunnel). Estimated crossing timeframe is 48 hours . Workspace reduced to 75' in stream
052218_WA_1003_P_MI	UNT to Monocacy Creek	58.5	40.755118	-75.422932	DPX	FX	CD	X			X	X			X		X	X	X	X	Steep slope north and south of the crossing (+15%) is impractical for trenchless methods (HDD, Direct Pipe, Microtunnel). Estimated crossing timeframe is 48 hours . Workspace reduced to 75' in stream
090314_DB_1011_E_MI	UNT to Monocacy Creek	59	40.749646	-75.416448	DPX	FX	DX-NF				X	X			X		X	X	X	X	Estimated crossing timeframe is 24 hours.

Alternatives Analysis Table
Riverine Resources
Northampton County

Watercourse ID and Crossing Number ¹	Watercourse Name	Milepost ²	Latitude	Longitude	Primary Pipeline Crossing Method ³	Secondary Pipeline Crossing Method ³	Tertiary Pipeline Crossing Method ³	Geology Constraints	Topography Constraints	Insufficient Workspace to Stage Trenchless	Practicality	Other (See Justification)	Implementing Trenchless Technology	Routing to Minimize	Crossing at Narrowest Location	Co-Locating	Reducing LOD	Minimizing Construction Duration	Adhering to Construction Timing Windows	Implementing BMPs	Justification
090414_DB_1012_I_MI	UNT to Monocacy Creek	59.2	40.747407	-75.413558	DPX	FX	DX-NF		X		X	X			X		X	X	X	X	Steep topography on either side of crossing makes trenchless alternatives impractical. Estimated crossing timeframe is 24 hours.
090414_DB_1013_I_MI	UNT to Monocacy Creek	59.2	40.747235	-75.413335	DPX	FX	DX-NF		X		X	X			X		X	X	X	X	Steep topography on either side of crossing makes trenchless alternatives impractical. Estimated crossing timeframe is 24 hours.
051215_JC_1005_P_IN	Monocacy Creek	60.3	40.737018	-75.399488	BX	DPX	FX				X				X		X	X	X	X	Steep slope on the east side of the crossing (22%) present challenges to trenchless methods (HDD, Direct Pipe & Microtunnel). Limited workspace due to CTR-987 and steep slope on east side of crossing challenge auger boring methods. Workspace reduced to 75' in stream and floodway.
090314_DB_1005_E_MI	UNT to Monocacy Creek	60.6	40.736004	-75.393631	BX	BX	BX				X	X	X		X				X	X	Trenchlessly crossed as part of Rte. 512 bore. Adjacent workspace required to facilitate bored crossing.
090314_DB_1007_E_MI	UNT to Monocacy Creek	60.7	40.735815	-75.392502	DPX	FX	DX-NF				X	X			X		X	X	X	X	Estimated crossing timeframe is 24 hours. Workspace reduced to 75' in stream.
090314_DB_1006_I_MI	UNT to Monocacy Creek	60.7	40.735773	-75.392255	DPX	FX	DX-NF				X	X			X		X	X	X	X	Estimated crossing timeframe is 24 hours. Workspace reduced to 75' in stream.
111214_JC_1004_P_IM	East Branch Monocacy Creek	61.5R3	40.734494	-75.377316	DPX	FX	CD				X				X		X	X	X	X	Timing to cross justifies open cut. Workspace reduced to 75' in stream and floodway. Existing route not conducive to trenchless methods. Estimated crossing timeframe is 48 hours.
102715_WA_1002_P_MI	UNT to East Monocacy Creek	62.4R3	40.730341	-75.364596	DPX	FX	CD				X				X		X	X	X	X	Timing to cross justifies open cut. Workspace reduced to 75' in stream and floodway. Estimated crossing timeframe is 24 hours.
051415_JC_1001_I_MI	UNT to East Branch Monocacy Creek	62.8R3	40.726153	-75.356883	BX	BX	BX				X	X	X						X	X	Trenchlessly crossed as part of railroad bore. Adjacent workspace required to facilitate bored crossing. Workspace reduced to 75' in stream and floodway.
051415_JC_1002_P_IN	UNT to East Branch Monocacy Creek	63.5	40.724871	-75.342878	DPX	FX	CD				X				X		X	X	X	X	Timing to cross justifies open cut. Workspace reduced to 75' in stream and floodway. Estimated crossing timeframe is 48 hours.

Notes:
1. In instances where a watercourse is crossed by the proposed pipeline or workspace multiple times, crossing numbers (e.g. "-1", "-2") have been added to the Watercourse ID.
Watercourse ID Key: P = perennial, I = intermittent, E = ephemeral, MA = major, IN = intermediate, MI = minor, C = canal, D = ditch
2. All route deviations implemented after the FERC Certificate Application are denoted with an "R" and indicate a MP equation. MPs with an "R1" indicate route deviations implemented and provided to FERC prior to the issuance of the DEIS. MPs with an "R2" indicate route deviations implemented as part of the September 2016 Route Update. MPs with an "R3" indicate route deviations implemented post-FERC Certificate issuance. All MPs without an "R" indicate that the route has not changed since the Certificate Application.
3. Crossing Type Key for Watercourse Channels:
• BX = Conventional Bore Crossing
• CD = Cofferdam Crossing
• DPX = Dam-and-Pump Crossing
• DX-NF = Dry Crossing If No Flow
• FX = Flume Crossing
• HDD = HDD Crossing
• N/A = Not Applicable

Alternative Analysis Table
Wetland Resources
Northampton County

Wetland ID and Crossing Number ¹	State Wetland Classification ²	Cowardin Classification ³	Milepost ⁴	Latitude	Longitude	Primary Pipeline Crossing Method ⁵	Secondary Pipeline Crossing Method ⁵	Tertiary Pipeline Crossing Method ⁵	Geology Constraints	Topography Constraints	Insufficient Workspace to Stage Trenchless	Practicality	Other (See Justification)	Implementing Trenchless Technology	Routing to Minimize	Crossing at Narrowest Location	Co-Locating	Reducing LOD	Minimizing Construction Duration	Adhering to Construction Timing Windows	Implementing BMPs	Justification
040517_GM_1001_PFO	Other	PFO1	52.4R3	40.804727	-75.473003	CL - Open Cut	-	Matted				X	X			X	X	X	X	X	X	Time to cross justifies open-cut, Project is co-located with existing ROW. Workspace reduced to 75'.
040517_GM_1001_PEM	Other	PEM1	52.4R3	40.804673	-75.472930	N/A - Workspace	-	Matted				X	X			X	X	X	X		X	Time to cross justifies open-cut, Project is co-located with existing ROW. Workspace reduced to 75'.
040617_GM_1001_PFO	Exceptional (iii)	PFO1	52.5R3	40.804172	-75.473033	CL - Open Cut	-	Matted				X	X			X	X	X	X	X	X	Time to cross justifies open-cut, Project is co-located with existing ROW. Workspace reduced to 75'.
040617_GM_1001_PEM	Exceptional (iii)	PEM1	52.5R3	40.804035	-75.472952	N/A - Workspace	-	Matted				X	X			X	X	X	X		X	Time to cross justifies open-cut, Project is co-located with existing ROW. Workspace reduced to 75'.
052918_WA_004_PFO	Exceptional (ii, iii)	PFO1	52.5R3	40.803757	-75.473036	CL - Open Cut	-	Matted				X	X			X	X	X	X	X	X	Time to cross justifies open-cut, Project is co-located with existing ROW. Workspace reduced to 75'.
052918_WA_005_PEM	Exceptional (ii, iii)	PEM1	52.5R3	40.802981	-75.473041	CL - Open Cut	-	Matted				X	X			X	X	X	X		X	Time to cross justifies open-cut, Project is co-located with existing ROW. Workspace reduced to 75'.
052918_WA_003_PFO	Exceptional (ii, iii)	PFO1	52.5R3	40.802869	-75.473042	CL - Open Cut	-	Matted				X	X				X	X	X	X	X	Time to cross justifies open-cut, Project is co-located with existing ROW. Workspace reduced to 75'.
052918_WA_007_PUB	Exceptional (ii, iii)	PEM2	52.6R3	40.802353	-75.473375	N/A - Workspace	-	Matted				X	X				X	X	X		X	Feature is not crossed by the centerline, project is co-located with existing ROW. Workspace reduced to 75'.
052918_WA_008_PUB	Exceptional (ii, iii)	PEM2	52.6R3	40.802223	-75.473325	CL - Bore	CL - Open Cut	Matted				X	X	X		X	X	X	X		X	Minimizing impact to pond feature, co-located with an exiting ROW.
080917_WA_003_PEM	Exceptional (ii, iii)	PEM1	52.7R3	40.800823	-75.473953	CL - Open Cut	-	Matted					X			X	X	X	X	X	X	Time to cross justifies open-cut, Project is co-located with existing ROW. Workspace reduced to 70'.
080917_WA_002_PEM - 1	Exceptional (i, iii)	PEM1	52.7R3	40.800562	-75.474071	CL - Open Cut	-	Matted				X	X			X	X	X	X	X	X	Time to cross justifies open-cut, Project is co-located with existing ROW. Workspace reduced to 75'.
080917_WA_002_PEM - 2	Exceptional (i, iii)	PEM1	52.7R3	40.800190	-75.474300	CL - Open Cut	-	Matted				X	X			X	X	X	X	X	X	Time to cross justifies open-cut, Project is co-located with existing ROW. Tree cutting to take place in 50 foot wide workspace. Earth disturbance activities reduced to 30' in wetland.
080917_WA_002_PEM - 3	Exceptional (i, iii)	PEM1	52.8R3	40.799863	-75.474397	N/A - Workspace	-	N/A				X	X				X	X	X	X	X	Feature is not crossed by the centerline. Project is co-located with existing ROW. Tree cutting to take place in 50 foot wide workspace. Earth disturbance activities reduced to 30' in wetland.
080917_WA_002_PSS	Exceptional (i, iii)	PSS1	52.8R3	40.799653	-75.474566	CL - Open Cut	-	Matted				X	X			X	X	X	X	X	X	Time to cross justifies open-cut, Project is co-located with existing ROW. Workspace reduced to 50'.
110217_WA_001_PSS	Exceptional (i, iii)	PSS1	52.8R3	40.799562	-75.474498	N/A - Workspace	-	N/A				X	X				X	X	X	X	X	Feature is not crossed by the centerline. Project is co-located with existing ROW. Tree cutting to take place in 50 foot wide workspace. Earth disturbance activities reduced to 30' in wetland.
110217_WA_005_PFO - 1	Exceptional (i, iii)	PFO1	52.9R3	40.798544	-75.474989	CL - Open Cut	-	Matted				X	X			X	X	X	X	X	X	Time to cross justifies open-cut, wetland is part of an intermittent stream. Project is co-located with existing ROW. Alignment crossing the wetland at top/narrowest location, workspace reduced to 75'.
110217_WA_005_PFO - 2	Exceptional (i, iii)	PFO1	52.9R3	40.798072	-75.475260	CL - Open Cut	-	Matted				X	X			X	X	X	X	X	X	Time to cross justifies open-cut, wetland is part of an intermittent stream. Project is co-located with existing ROW. Alignment crossing the wetland at top/narrowest location, workspace reduced to 50'.
110217_WA_005_PFO - 3	Exceptional (i, iii)	PFO1	52.9R3	40.797778	-75.475401	N/A - Workspace	-	Matted				X	X			X	X	X	X	X	X	Time to cross justifies open-cut, wetland is part of an intermittent stream. Project is co-located with existing ROW. Alignment crossing the wetland at top/narrowest location, workspace reduced to 50'.
110217_WA_006_PEM	Exceptional (ii, iii)	PEM1	52.9R3	40.797669	-75.475216	N/A - Workspace	-	Matted				X	X			X	X	X	X	X	X	Featured is not crossed by the centerline, project is co-located with existing ROW. Alignment crossing the wetland at top/narrowest location, workspace reduced to 50'.

Alternative Analysis Table
Wetland Resources
Northampton County

Wetland ID and Crossing Number ¹	State Wetland Classification ²	Cowardin Classification ³	Milepost ⁴	Latitude	Longitude	Primary Pipeline Crossing Method ⁵	Secondary Pipeline Crossing Method ⁵	Tertiary Pipeline Crossing Method ⁵	Geology Constraints	Topography Constraints	Insufficient Workspace to Stage Trenchless	Practicality	Other (See Justification)	Implementing Trenchless Technology	Routing to Minimize	Crossing at Narrowest Location	Co-Locating	Reducing LOD	Minimizing Construction Duration	Adhering to Construction Timing Windows	Implementing BMPs	Justification
110217_WA_007_PEM	Exceptional (ii, iii)	PEM1	52.9R3	40.797565	-75.47511	N/A - Workspace	-	N/A				X	X			X	X	X	X	X	X	Featured is not crossed by the centerline, project is co-located with existing ROW. Alignment crossing the wetland at top/narrowest location, workspace reduced to 50'.
110217_WA_008_PEM	Other	PEM1	53.1R3	40.795645	-75.476254	CL - Bore	CL - Open Cut	Matted				X	X	X		X	X	X	X	X	X	Featured is not crossed by the centerline, project is co-located with existing ROW. Alignment crossing the wetland at top/narrowest location, workspace reduced to 50'.
080917_WA_001_PEM - 1	Exceptional (iii)	PEM1	53.2R3	40.793819	-75.476184	CL - Open Cut	-	Matted				X	X			X		X	X		X	Time to cross justifies open-cut, workspace reduced to 75'.
080917_WA_001_PEM - 2	Exceptional (iii)	PEM1	53.3R3	40.792700	-75.475975	CL - Open Cut	-	Matted				X	X			X		X	X		X	Time to cross justifies open-cut, workspace reduced to 75'.
050217_MB_1002_PEM	Exceptional (iii)	PEM1	53.3R3	40.792094	-75.476108	CL - Open Cut	-	Matted				X	X			X		X	X		X	Time to cross justifies open-cut, workspace reduced to 75'.
050217_MB_1004_PFO	Exceptional (iii)	PFO1	53.4R3	40.791397	-75.476161	N/A - Workspace	-	Matted				X	X			X		X	X	X	X	Time to cross justifies open-cut, additional workspace required for fittings.
050217_MB_1001_PEM	Exceptional (iii)	PEM1	53.4R3	40.790966	-75.475846	CL - Open Cut	-	Matted				X	X			X		X	X		X	Time to cross justifies open-cut, workspace reduced to 75'.
081815_MK_042_PEM - 1	Exceptional (iii)	PEM1	55.9	40.780070	-75.457070	CL - Bore	CL - Open Cut	Matted				X	X	X				X			X	Workspace needed for SR-946 road bore, workspace reduced to 75 feet. Matted across impact AR-054.
081815_MK_042_PEM - 2	Exceptional (iii)	PEM1	56	40.779935	-75.457027	-	-	Matted				X	X								X	Workspace needed for SR-946 road bore, workspace reduced to 75 feet. Matted across impact AR-054.
062218_WA_001_PFO	Exceptional (iii)	PFO1	56	40.779828	-75.456993	CL - Open Cut	-	Matted				X	X						X	X	X	Workspace needed for SR-946 road bore.
062218_WA_001_PEM - 1	Exceptional (iii)	PEM1	56	40.779732	-75.456763	N/A - Workspace	-	Matted				X	X						X		X	Workspace needed for road bore.
062218_WA_001_PEM - 2	Exceptional (iii)	PEM1	56	40.779378	-75.456448	N/A - Workspace	-	Matted				X	X						X		X	Workspace needed for road bore.
052218_WA_002_PEM	Exceptional (iii)	PEM1	56.6	40.772600	-75.448817	N/A - Workspace	-	Matted				X	X			X		X	X		X	Workspace needed for road bore.
101717_AB_1001_PEM	Exceptional (iii)	PEM1	56.6	40.772464	-75.448984	N/A - Workspace	-	Matted				X	X			X		X	X		X	Minor impact to permanent easement adjacent to road bore. No clearing will occur on wetland.
050417_GM_1003_PEM	Exceptional (iii)	PEM1	56.7	40.772166	-75.448663	CL - Open Cut	-	Matted				X	X					X	X		X	Time to cross justifies open-cut.
050417_GM_1002_PEM	Exceptional (iii)	PEM1	56.7	40.771851	-75.448423	CL - Open Cut	-	Matted				X	X			X		X	X		X	Time to cross justifies open-cut.
052218_WA_003_PEM	Exceptional (iii)	PEM1	58.5	40.755192	-75.423015	CL - Open Cut	-	Matted		X								X	X		X	Steep slopes north and south of crossing (+15%) present challenges. Pit dewatering may be impact feature. Workspace reduced to 75'.
090414_DB_008_PEM	Exceptional (iii)	PEM1	59.2	40.747440	-75.413599	CL - Open Cut	-	Matted		X			X					X	X		X	Time to cross justifies open-cut. Limited workspace due to a residence makes a bore unfeasible.
090314_DB_004_PEM	Exceptional (iii)	PEM1	60.6	40.735842	-75.392664	CL - Open Cut	-	Matted				X	X					X	X		X	Alignment crossing the wetland at top/narrowest location. Time to cross justifies open-cut.
041119_DHB_001_PEM	Exceptional (iii)	PEM1	62.8R3	40.725897	-75.356757	CL - Open Cut	-	Matted				X	X						X		X	Workspace needed for railroad bore.
042815_JC_1003_PEM	Other	PEM1	64.3R2	40.716599	-75.334140	N/A - Workspace	-	Matted				X	X					X	X		X	Workspace needed for crossing of Rte. 946.

Notes:

- In instances where a wetland is crossed by the proposed pipeline or workspace multiple times, crossing numbers (e.g. "-1", "-2") have been added to the Wetland ID.
- Resource Value Definitions: Pennsylvania Exceptional Value Wetland as defined by PA Code §105.17 (relating to special criteria for projects affecting important wetlands). Criteria are:
 - (ix) Serves as habitat for fauna or flora listed as "threatened" or "endangered"
 - (x) Is hydrologically connected to or located within a 1/2-mile from habitat for fauna or flora listed as "threatened" or "endangered" and wetland dependent;
 - (xi) Located in or along the floodplain of the reach or tributaries of a wild trout stream or waters listed as exceptional value;
 - (xii) Located along an existing public or private drinking water supply.
- Wetland Cover Type based on Cowardin, 1979
 - Key: PEM1 = palustrine emergent, persistent; PEM2 = palustrine emergent, non-persistent; PFO1 = palustrine forested, broad-leaved deciduous; PFO4 = palustrine forested, needle-leaved evergreen; PSS1 = palustrine scrub-shrub, broad-leaved deciduous; PSS3 = palustrine scrub-shrub, broad-leaved evergreen.
- All route deviations implemented after the FERC Certificate Application are denoted with an "R" and indicate a MP equation. MPs with an "R1" indicate route deviations implemented and provided to FERC prior to the issuance of the DEIS. MPs with an "R2" indicate route deviations implemented as part of the September 2016 Route Update. MPs with an "R3" indicate route deviations implemented post-FERC Certificate issuance. All MPs without an "R" indicate that the route has not changed since the Certificate Application.
- Crossing Type Key for Wetlands:
 - CL-Bore = Pipeline centerline crosses under wetland. Construction method is bore.
 - CL-HDD = Pipeline centerline crosses under wetland. Construction method is HDD.
 - CL-Open Cut = Pipeline centerline impacts wetland. Construction method is open cut.
 - Matted = Wetland will be matted for temporary equipment crossing.
 - N/A = Not affected by pipeline construction.
 - N/A-Workspace = Pipeline trench does not impact wetland.