East Goshen Township
Pipeline Task Force
Workshop Meeting Agenda
Thursday, January 24, 2019
5:00 PM

1. Call to Order
2. Pledge of Allegiance
3. Moment of Silence
4. Ask if anyone is recording the meeting
5. Approval of Minutes
6. Chairman's Report
7. Reports
    a. Legislative Update
        No pipeline bills have been filed as of 1/18/19
    b. Current Pipeline Events Impacting East Goshen.
        Enbridge Letter re ROW
8. Old Business
    a. Review Adelphia Environmental Assessment
    b. Pipeline Monitoring Report (David Shuey)
9. New Business
10. Public Comment
11. Action Items
12. Adjournment

January 18, 2019

Attached are some excerpts on Air Quality from the initial application Adelphia submitted on 1/12/2018. #1

And the Public Comment Section of the Environmental Assessment that identifies the issues identified during the scoping for the assessment. #2

Lastly are some excerpts are concerning air quality. #3

Based on the air quality the blowdown valves are expected to be used (for both emergencies and maintenance purposes less than once a year.

As for comments on the Assessment I would suggest that FERC

1. Add to Condition 25 a requirement that Adlphia comply with municipal noise ordinances during construction.
2. Provide municipalities with a copy of the Implement Plan required by Condition 6.

3. Provide municipalities with a copy of the status reports Implement Plan required by Condition 8.

4. Require Adelphia to provide the Director of OEP with a certification that it has received all state and local permits as well.

#1

These pages are from the initial application submitted by Adelphia on 1/12/2018.

Adelphia estimates that the emissions from the blow down valves will be limited to maintenance and emergency use (which are expected to occur less than one time per year on average). See pages 2 and 13

Adelphia needs permits for the compressor stations. See pages 14, 15 and 16

Blowdown stations are exempt from permit requirements. See page 17

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9 AIR QUALITY AND NOISE

Resource Report 9 includes a discussion of potential Adelphia Gateway Project (Project) impacts on air quality and noise in the Project area. The Project consists of the following primary components: the approximately 4.4-mile 20-inch Mainline; the approximately 84-mile 18-inch Mainline consisting of the Southern Segment and the Northern Segment that will both transport solely natural gas; two new compressor stations (the Marcus Hook Compressor Station [Marcus Hook CS] and the Quakertown Compressor Station [Quakertown CS]); two laterals, including an approximately 0.2-mile 16-inch pipeline lateral (the Parkway Lateral) and an approximately 4.5-mile 16-inch pipeline lateral (the Tilghman Lateral); four existing meter and regulator (M&R) facilities that do not require any modifications and accordingly do not have any environmental impacts for review in this resource report; eight new M&R facilities at receipt and delivery interconnects located along the 18-inch Mainline and the laterals; eight new blowdown assemblies located at existing mainline valves (MLV); one new MLV; and use of an existing disturbed site as a wareyard. Potential impacts on air quality resources from the Project are discussed in section 9.1, and section 9.2 addresses Project impacts on noise quality.

9.1 AIR QUALITY

The Quakertown CS would be located in Quakertown, Bucks County, Pennsylvania. The Marcus Hook CS, would be located in Lower Chichester, Delaware County, Pennsylvania. The Project would include three meter facilities co-located on one site located in Claymont, New Castle County, Delaware associated with the Parkway Lateral (the Delmarva Meter Station); and three meter stations in Lower Chichester, Trainer, and Chester, Delaware County, Pennsylvania associated with the Tilghman Lateral (the Transco Meter Station, the Monroe Meter Station, and the PECO Meter Station, respectively). An additional two new meter stations, the Skippack Meter Station and the Quakertown Meter Station, would also be located in Skippack, Montgomery County, Pennsylvania and Quakertown, respectively.

The proposed equipment at the Quakertown CS includes:

- three Caterpillar G3606 natural gas compressor engines (rated at 1,875 horsepower [HP]) equipped with oxidation catalysts;
- one Caterpillar G3412C natural gas emergency generator engine (rated at 670 HP) for power generation;
- one 1,000-gallon produced fluid tank;
- one 500-gallon engine oil tank;

- one 500-gallon glycol tank; and
- associated piping and components.

The proposed equipment at the Marcus Hook CS includes:

- three Caterpillar G3606 natural gas compressor engines (rated at 1,875 HP) equipped with oxidation catalysts;
- one Caterpillar G3412C natural gas emergency generator engine (rated at 670 HP) for power generation;
- one 1,000-gallon produced fluid tank;
- one 500-gallon engine oil tank;
- one 500-gallon glycol tank; and
- associated piping and components.

The Project scope also includes the construction and operation of a new mainline valve and eight blowdown assemblies. Apart from emissions generated during the construction period of these assets, which would be brief, air emissions and noise during operation would be limited to maintenance and emergency use, (which are expected to occur less than one time per year on average). Therefore, these emissions and noise are not part of the normal operation of the Project. The existing 18-inch- and 20-inch-diameter pipelines and other ancillary facilities (see Resource Report 1 – *General Project Description*) are not part of the scope of Resource Report 9 and are therefore not discussed further.

Adelphia Gateway, LLC (Adelphia) would implement measures to avoid, minimize, and/or mitigate any potential adverse impacts on air quality resulting from Project-related air emissions. The impacts on air quality resulting from the construction and operation of the Project are summarized in the following sections.

In addition to meeting requirements of the Federal Energy Regulatory Commission (FERC), Adelphia would comply with other applicable permitting requirements, such as obtaining Pennsylvania Air Quality Construction Permits (Plan Approvals) from the Pennsylvania Department of Environmental Protection (PADEP) for the Quakertown CS and the Marcus Hook CS. The PADEP would review air permit applications for these operations and upon its approval of the applications, would issue the necessary permits in accordance with its rules and regulations. Construction would not commence on the Quakertown CS or Marcus Hook CS until its respective Plan Approval has been issued.

Table 9.1-5 Federal Class I Areas Closest to the Project Sites				
Class I Area	Managing Agency	Direction from Site	Distance to Site	
			Kilometers	Miles
Class I Areas near Quakertown CS				
Brigantine, NJ	National Fish and Wildlife Service	SE of Quakertown CS	~123	~76
Shenandoah, VA	National Park Service	SW of Quakertown CS	~295	~180
Class I Areas near Marcus Hook CS				
Brigantine, NJ	National Fish and Wildlife Service	SE of Marcus Hook CS	~91	~56
Shenandoah, VA	National Park Service	WSW of Marcus Hook CS	~260	~162
Source: National Park Service, 2017				

9.1.2 Air Quality Impacts and Mitigation

Both the short-term and long-term air quality impacts associated with the Project are analyzed below. Short-term air quality impacts would be temporary and would result from construction activities necessary to install the pipeline, engines, and other equipment at the Quakertown CS and Marcus Hook CS and the meter stations. Additional short-term air quality impacts would potentially result from construction activities necessary for the mainline valve and blowdown assemblies. However, such construction activities would last for only a couple of days (e.g., two days or less of heavy equipment) and would involve significantly less equipment than construction of other Project sites such as the compressor stations. Operational air impacts from these operations are minimal and/or not foreseeable as emissions are only expected to occur one time per year, on average, in the event of pre-planned maintenance or emergency situations. As such, these activities are not considered part of the normal operation of the Project. Long-term impacts would result from the operation of the engines and other equipment at the Quakertown CS and Marcus Hook CS.

From a regulatory standpoint, the emissions and associated air quality impacts are addressed in two separate ways:

- Pre-construction Permitting – Pre-construction permitting addresses the emissions and associated impacts that would occur from the operational equipment at the facilities. Depending on the major/minor source status of the proposed equipment, the project location, and the federal and state permits required, pre-construction permitting would

ensure that the installation of new air emissions sources (i.e., operational equipment) would meet required emission levels through the installation of appropriate control technologies, as well as other regulatory requirements, where appropriate. A pollutant that triggers a PSD and/or Non-attainment NSR (NNSR) major source threshold would be subject to additional review and requirements. Air emissions from the Project would comply with applicable federal and state air quality regulations, including the establishment of best available technology (BAT). As a result, the air emissions associated with the Project's stationary sources would be far below PSD permitting thresholds such that PSD requirements including air dispersion modeling are not triggered. Even though these requirements are not triggered, air dispersion modeling was performed to evaluate impacts on air quality resulting from the Project. This modeling is included as appendix 9-B. NSR and PSD permitting regulations are discussed in section 9.1.5.

- General Conformity Analysis – the General Conformity rule addresses the sources of emissions in non-attainment or maintenance areas that are not covered by permitting actions and ensures that they conform to the applicable tribal or state implementation plan(s) (SIP) (EPA, 2017b). Generally, these include the short-term emissions from construction activities and new emissions increases from non-permitted emission sources, such as mobile sources (e.g., trucks, bulldozers). Section 9.1.6 discusses the General Conformity analysis.

9.1.3 Air Permitting Requirements

25 PA Code §127.11 requires certain stationary sources of air pollutant emissions to receive a permit (referred to as a Plan Approval) before construction, modification, reactivation or installation of such a source. Emissions from construction of the pipeline are temporary and do not require a Plan Approval. Similarly, emissions from ancillary operations such as the meter stations are minimal and do not require a Plan Approval. However, the air pollutant emission sources to be installed at the Quakertown CS and Marcus Hook CS would require a Plan Approval issued by the PADEP to authorize construction. The Plan Approval requires demonstration that best available technology (BAT) would be employed for the proposed new source of air pollution and includes a detailed regulatory applicability study. The Plan Approval applications for the Quakertown CS and Marcus Hook CS are being prepared and will be provided as part of an addendum to this filing.

9.1.3.1 Federal Air Quality Regulations

The following text discusses federal air quality regulations that may be applicable to the Project based on current design.

Major New Source Review and Title V Operating Permit

The Federal NSR program applies to major stationary sources, such as compressor stations. Based on their small magnitude of emissions, meter stations, such as the eight proposed for this Project, are not considered to be major stationary sources. The NSR permitting regulations are comprised of two programs: PSD for projects located in areas where specified pollutant levels have met NAAQS; and NNSR (called NSR in Pennsylvania) for projects located in areas where pollutant levels have not attained the corresponding NAAQS. The PSD and NSR programs regulate the installation of new major sources or major modifications to existing major sources. The proposed Quakertown CS is located in Bucks County, Pennsylvania, which is classified as attainment with all NAAQS except for ozone. The Marcus Hook CS is located in Delaware County, Pennsylvania, which is classified as attainment with all NAAQS except for ozone and $PM_{2.5}$. Pennsylvania's regulations for NSR are found in 25 PA Code, Chapter 127, Subchapter E and PSD permitting under 25 PA Code, Chapter 127, Subchapter D.

The estimated emissions from the Quakertown CS and the Marcus Hook CS would be the same. The emissions from each compressor station, as shown in table 9.1-6, are below major source thresholds found in Subchapters D and E. Therefore, the Quakertown CS and Marcus Hook CS would be classified as new minor sources of all regulated pollutants and neither PSD nor NSR would be triggered by this Project.

Table 9.1-6
New Source Review Major Source Thresholds

Pollutant	Marcus Hook CS Potential to Emit (TPY)[a]	Quakertown CS Potential to Emit (TPY)[a]	Major Source Threshold (TPY)	Major Source Program	Subject to Major Source Permitting?
PM_{10}	1.91	1.91	250	PSD	No
$PM_{2.5}$	1.91	1.91	250 100	PSD (Bucks, PA) NSR (Delaware, PA)	No

Table 9.1-6
New Source Review Major Source Thresholds

Pollutant	Marcus Hook CS Potential to Emit (TPY)[a]	Quakertown CS Potential to Emit (TPY)[a]	Major Source Threshold (TPY)	Major Source Program	Subject to Major Source Permitting?
SO_2	0.11	0.11	250 100	PSD (Bucks, PA) NSR (Delaware, PA)[b]	No
CO	10.51	10.51	250	PSD	No
NOx	17.03	17.03	25	NSR[c]	No
VOC	22.75	22.75	25	NSR	No
Formaldehyde	2.90	2.90	10	N/A (Title V)	N/A
HAP	6.60	6.60	25	N/A (Title V)	N/A
CO_2e	31,348	31,348	NA[d]	PSD	No
CO_2	24,869	24,869	N/A	PSD	N/A
CH_4	259	259	N/A	PSD	N/A
N_2O	0.04	0.04	N/A	PSD	N/A

TPY = tons per year
NOx = nitrogen oxide
VOC = volatile organic compounds
N/A = not applicable
HAP = hazardous air pollutants
CO2e = carbon dioxide equivalent
CO2 = carbon dioxide
CH4 = methane
N2O = nitrous oxide

[a] Potential to Emit includes site-wide emissions from all sources, including storage tanks, fugitive leaks, and blowdowns. Emissions represents ton per year (tpy) values.

[b] SO_2 is also a regulated PSD pollutant with a major source threshold of 250 tpy.

[c] NO_2 is also a regulated PSD pollutant with a major source threshold of 250 tpy.

[d] Only applicable if another pollutant exceeds major source threshold for PSD

The Title V Operating Permit program applies to stationary sources with the potential to emit over 100 tons per year (tpy) (or a lower major source threshold defined by nonattainment status) of any individual criteria air pollutant, 10 tpy of any individual Hazardous Air Pollutant (HAP), or 25 tpy of combined HAPs. Maximum potential emissions for criteria pollutants and HAP from the Quakertown CS would not exceed the major source thresholds for the Title V permit program. Similarly, maximum potential emissions from the Marcus Hook CS would not exceed the major source threshold for the Title V permit program. Therefore, the Quakertown CS and the Marcus Hook CS would be minor sources with respect to the Title V Program after the construction of the proposed Project. Continued operation of the Quakertown CS and Marcus Hook CS would be authorized under the operating permit requirements in 25 PA Code Chapter 127 Subchapter F.

Due to the low level of emissions, interconnects, blowdown stations and meter stations are anticipated to be exempt from air permit requirements.

National Emission Standards for Hazardous Air Pollutants

Regulatory requirements for facilities subject to National Emission Standards for Hazardous Air Pollutants (NESHAP) standards, otherwise known Maximum Available Control Technology (MACT) Standards for source categories, are contained in 40 CFR Parts 61 and 63. 40 CFR Part 61 NESHAP standards are defined for specific pollutants, and Part 63 NESHAP standards are defined for source categories. A major source of HAPs is defined as having potential emissions in excess of 25 tpy for total HAPs and/or potential emissions in excess of 10 tpy for any individual HAP. Part 63 NESHAP standards apply to sources in specifically regulated industrial source categories (CAA Section 112(d)) or on a case-by-case basis (Section 112(g)) for facilities not regulated as a specific industrial source type.

Historically, NESHAPs have only been applicable to major sources of HAPs. However, the EPA has finished promulgating area source NESHAP standards to address area (or minor) source categories that represent ninety percent of the emissions of a specific list of urban air toxics under Section 112(c) of the CAA. Potential HAP emissions from the proposed Quakertown CS, Marcus Hook CS, pipeline/meter station interconnects, and meter stations would be below the HAP major source thresholds and would be classified as area sources of HAPs. The potential applicability of specific MACT standards to the Quakertown CS and Marcus Hook CS is discussed in the following sections.

NESHAP Subpart HH – Oil and Natural Gas Production Facilities

Glycol dehydration units are potentially subject to Subpart HH. This standard applies to such units at natural gas production facilities that are major or area sources of HAP emissions. The proposed Quakertown CS, Marcus Hook CS, interconnects, and meter stations are located in the transmission sector. Therefore, Subpart HH is not applicable.

NESHAP Subpart HHH – Natural Gas Transmission and Storage Facilities

This standard applies to glycol dehydration units at natural gas transmission and storage facilities that are major sources of HAP emissions located downstream of the point of custody transfer (after processing and/or treatment in the production sector), but upstream of the distribution sector. The proposed Quakertown CS, Marcus Hook CS, interconnects, and meter stations are located in the transmission sector and are area sources of HAP emissions. Therefore, the proposed facilities would not be subject to Subpart HHH.

#2

These pages are from the Environmental Assessment issued on 1/4/19.

9. Public Review and Comment This is a summary of the comments received by FERC as a result of the Notice of Intent issued by FERC. See pages 25 and 26

The Environmental Issues raised during the Public Scoping Process are listed in Table A-6. See page 27

Health Impacts are identified in Section B.8.1. See page 28.

FERC was asked to require that Adelphia prepare and Environmental Impact Statement. FERC concluded an Environmental Impact was not warranted. See pages 28 and 29.

pipeline patrols or vegetation maintenance identify areas on the rights-of-way where erosion is occurring, Adelphia would restore the area and repair existing erosion control devices or install additional devices, as necessary.

To maintain accessibility to the rights-of-way and accommodate pipeline integrity surveys, Adelphia would periodically clear vegetation along the permanent pipeline rights-of-way using mechanical mowing or cutting. Trees within 15 feet of the pipelines with roots that may compromise the pipeline integrity may be selectively cut and removed from the rights-of-way. Routine vegetation maintenance in upland areas would not be conducted more frequently than once every 3 years, with the exception of a 10-foot-wide corridor centered on the pipeline that would be maintained as necessary in an herbaceous state to allow for periodic corrosion and leak surveys. Routine vegetation maintenance would be conducted in accordance with timing restrictions established for the protection of migratory birds and as approved by the USFWS (see section B.3.4).

Adelphia personnel also would perform regular operation and maintenance activities on equipment at the pig launcher/receiver facilities, compressor and meter stations, MLVs, and BAVs. These activities would include calibration, inspection, and scheduled routine maintenance. Operational testing would be performed on safety equipment to ensure proper functioning, and problems would be corrected.

8. Non-jurisdictional Facilities

Under Section 7 of the NGA and as part of its decision regarding whether or not to approve the facilities under its jurisdiction, the Commission is required to consider all factors bearing on the public convenience and necessity. Occasionally, proposed projects have associated facilities that do not come under the jurisdiction of FERC. These non-jurisdictional facilities may be integral to a project (e.g., a natural gas-fueled power plant at the end of a jurisdictional pipeline) or they may be minor, non-integral components of the jurisdictional facilities that would be constructed and operated because of a project.

Adelphia anticipates that electrical power upgrades would be required at the compressor and meter stations. Adelphia does not know the route or length of the new power lines required for these facilities; however, they anticipate that the new powerlines would be routed from existing power poles nearby, and would not require large tracts of land or routing of new transmissions lines. Electrical power upgrades would be under the jurisdiction of the respective power company, who would be required to obtain all necessary permits and authorizations.

9. Public Review and Comment

On May 1, 2018, the Commission issued a *Notice of Intent to Prepare an Environmental Assessment for the Proposed Adelphia Gateway Project, Request for Comments on Environmental Issues, and Notice of Public Scoping Sessions* (NOI). The

NOI was published in the Federal Register and was mailed to 4,709 interested parties, including federal, state, and local government representatives and agencies; elected officials; affected landowners; environmental and public interest groups; Native American tribes; other interested parties; and local libraries. The NOI also established a scoping period and requested that the public provide comments on specific concerns about the Project or issues that should be considered during the preparation of the EA.

In order to facilitate scoping and receive verbal scoping comments, we conducted two public scoping sessions in the Project area. Scoping sessions were held on May 30, 2018, in Center Valley, Pennsylvania and May 31, 2018, in Essington, Pennsylvania. We received a total of 13 verbal comments at these scoping sessions. Transcripts of these comments are part of the Commission's public record and are available for viewing on FERC's website.[12] In addition to FERC staff, the USDOT-PHMSA was present at the May 30, 2018 Project scoping session.

In total the Commission received 531 comments on the Project, of which 68 letters/verbal comments were received during the scoping period established by the NOI (May 1, 2018 through June 1, 2018). The environmental comments received are summarized below and addressed, as applicable, in relevant sections of this EA, as shown in table A-6.

Several commenters requested that the scoping period be extended and stated that insufficient public notice or available meeting dates were provided for the scoping sessions, and state that the scoping session format is restrictive. Regarding the extension of the scoping period, we have reviewed all comments submitted on or prior to December 31, 2018. The purpose of the public scoping sessions are to allow individuals/groups to provide comments on the public record regarding their particular environmental concerns. The format of these sessions is conducive to allowing the maximum number of commenters the opportunity to express their concerns. Additionally, as indicated in the NOI, the public scoping sessions were just one of four methods identified to provide comments. Consequently, we conclude this concern has been addressed.

Additionally, several commenters who live in proximity to the proposed site of the Quakertown Compressor Station expressed concern that nearby residents were excluded from the mailing list and had not received notice of the Project. FERC's third-party contractor, Edge Engineering and Science, Inc., performed an independent analysis of the mailing list using parcel data maintained by the counties in the Project area and determined that, with few exceptions, the mailing list was comprehensive and included contacts for parcels within 0.5 mile of the compressor station. In addition, the mailing list has been continually updated throughout the environmental review process to include all commenters.

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[12] Available on eLibrary under accession nos. 20180530-4005 and 20180531-4014.

Table A-6 Environmental Issues Identified During the Public Scoping Process	
Issue	**EA Section Addressing Issue**
Air quality, greenhouse gases, health impacts, climate change (including methane and fugitive emissions)	sections B.8.1, B.10.9, and B.10.10
Alternatives (including alternative sites, electric-driven compression, and routing analysis)	section C
Aquatic resources (including temperature impacts)	section B.3.2
Cultural resources and impacts on historical sites	section B.7
Cumulative impacts	section B.10
Geology (including karst, HDD constructability, blasting, steep terrain, and acid-producing rock)	section B.1.1
Land use, recreation, and visual impacts (including impacts on conservation areas and land enrolled in easement programs, and scenic rivers)	section B.5
Noise (including vibration)	section B.8.2
Safety of new and existing natural gas infrastructure (including high consequence areas)	section B.9
Strain on local public and emergency services	section B.6.4
Socioeconomic impacts (including impacts on property values and environmental justice communities)	section B.6
Soils (including compaction, temperature changes, and impacts on soil fertility)	section B.1.2
Surface water, groundwater, and wetlands (including water quality, riparian buffers, and floodplains)	sections B.2 and B.1.1
Vegetation and wildlife (including migratory birds, Natural Heritage Areas, forest fragmentation, revegetation, and invasive species)	section B.3
Threatened and endangered species	section B.4
Utilities (including existing pipelines and road and railway crossings)	section A.7.2

Many of the comments received are in opposition to the Adelphia Gateway Project, including numerous commenters that question the need for the Project; expressing opposition to fossil fuels in favor of renewable energy, questioning if the natural gas would be exported, and raising concerns regarding health risks associated with natural gas sourced from hydraulic fracturing. Commenters also raised concerns with Project emissions and impacts on air quality and health. The need for the Project

will be determined by the Commission in the Order. The extraction of natural gas in shale formations by hydraulic fracturing is not the subject of this EA, nor is the issue directly related to the Project; however, health impacts due to Project emissions are reviewed in section B.8.1. Commenters also raise concerns regarding cumulative impacts of the Adelphia Gateway Project, PennEast Pipeline (PennEast), Mariner East Projects (I and II), and four Tennessee Gas pipeline projects (i.e., the 300 Line Extension, Northeast Upgrade, Northeast Diversification Project, and Marcellus Pooling Point Project). The 300 Line Extension, Northeast Upgrade, Northeast Diversification, and Marcellus Pooling Point Projects were completed in 2014 and, as such, are captured in this analysis as baseline. Alternatively, Tennessee Gas Pipeline cancelled the Northeast Diversification Project, so it is not discussed further. The remaining projects are discussed in section B.10, Cumulative Impacts.

Commenters question the siting of the Quakertown Compressor Station, MLVs, and BAVs in proximity to residential communities, schools, senior citizen centers, churches, as well as watersheds and historic districts. Numerous commenters also express safety concerns for the integrity of an older pipeline and the associated conversion of service to transport a high-pressure gas. Several commenters express concern for the lack of an appropriate safety, noise, and/or emission buffer between the Quakertown Compressor Station and residences, which one commenter specifically points to FERC's landowner pamphlet (*An Interstate Natural Gas Facility on My Land? What Do I need to Know?*) as specifying the need for a larger parcel for the compressor stations for such a buffer. While FERC's landowner pamphlet does provide examples of typical acreages of compressor stations, gas companies are not required to acquire a parcel of this size, provided that the noise and air quality requirements are met in their proposed parcel (see section B.8.1). Additionally, the landowner pamphlet discusses buffer zones or protection areas in reference to natural gas storage fields and is not a requirement for a compressor station. Commenters also expressed concern with strains on local emergency services and access to Project facilities during emergencies. Safety concerns are discussed in detail in section B.9.

One commenter asks that FERC review the original permits issued for the project. The state permitting process associated with the existing mainline's permits from the 1970s is beyond the scope of this EA. Commenters also state that the Project should be evaluated to ensure that it meets the goals of town comprehensive planning and ordinances and that FERC should prepare an environmental impact statement (EIS) for the Project to assess all impacts from the conversion and newly proposed facilities. As discussed in section A.1, FERC is the lead federal agency with siting authority under the NGA, which preempts local comprehensive planning and ordinances. The EA appropriately considers and discloses the environmental impacts of the Project, and

supports a finding of no significant impact. Therefore, an EIS is not required for this Project.[13]

The Delaware Riverkeeper Network and other commenters express concerns that the capacity on the southern portion of the existing mainline would be increased in the future and would result in project segmentation. In order for Adelphia to increase the capacity of any Project pipeline or component, beyond that which would be authorized if a Certificate is issued, it would be required to submit an application that would be thoroughly reviewed in accordance with NGA and NEPA. FERC is not aware of any plans to increase the capacity beyond that which was requested. Commenters also state that there are other pipeline projects in the area that would be considered project segmentation. Other pipeline projects are reviewed in section B.10.

Commenters also express concerns regarding Project impacts on surface and groundwater quality; wetlands; floodplains; wildlife and vegetation; threatened and endangered species; cultural resources and historic structures; soils; property values; land use; pollution prevention practices; methane leaks and greenhouse gas (GHG) emissions; and climate change. All substantive comments are addressed in the relevant EA sections as outlined above in table A-6.

10. Permits and Approvals

As discussed, in section A.1, the USEPA and USDOT-PHMSA participated as cooperating agencies in the preparation of this EA. USDOT-PHMSA administers the national regulatory program to ensure the safe transportation of natural gas and other hazardous materials by pipeline. It develops safety regulations and other approaches to risk management that ensure safety in the design, construction, testing, operation, maintenance, and emergency response associated with pipeline facilities. The USEPA has delegated water quality certification, under Section 401 of the Clean Water Act (CWA), to the Pennsylvania Department of Environmental Protection (PADEP).

Table A-7 provides a list of federal and state permits related to construction and operation of the Project.

[13] The CEQ regulations state, where an EA concludes in a finding of no significant impact, an agency may proceed without preparing an EIS. *See* 40 C.F.R. §§ 1501.4(e), 1508.13 (2011).

#3

These pages are from the Environmental Assessment issued on 1/4/19.

Adelphia would not need federal air quality permits, but they would need state permits for the compressor stations. See pages 119 and 120

Emissions for the blowdown valves are not subject to federal permitting. Page 121

Adelphia needs state permits for the Compressor stations. See page 122

The construction emissions associated with the Paoli Pike Valve are below the thresholds for Chester County. See pages 125 and 125

During operations the release from the blowdown valves would be infrequent and are not expected to significantly degrade local air quality. See page 127

Table B-21 shows the Annual Operational Emissions for the meter stations, valves and blow down assemblies (see page 128)

Project will not result in significant impacts to air quality. Pages 129 and 132

Clean Air Council has suggested Adelphia participate in Natural Gas Star Program and should reinject the blowdown gas. Page 132

a. **for Pennsylvania, Adelphia files with the Secretary remaining cultural resources survey reports(s); site evaluation report(s), as required; avoidance/treatment plan(s), as required; and comments on the cultural resources reports and plans from the Pennsylvania SHPO;**

b. **for Delaware, Adelphia files with the Secretary the Delaware SHPO's comments on the visual screening plan for the Delmarva Meter Station;**

c. **the ACHP is afforded an opportunity to comment if historic properties would be adversely affected; and**

d. **FERC staff reviews and the Director of the OEP approves the cultural resources reports and plans, and notifies Adelphia in writing that treatment plans/mitigation measures (including archaeological data recovery) may be implemented and/or construction may proceed.**

All materials filed with the Commission containing location, character, and ownership information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: "CUI//PRIV - DO NOT RELEASE."

8. Air and Noise

8.1 Air Quality

Air quality in the Project area would be affected by construction and operation of the Project. Although air emissions would be generated during construction and operation of the entire Project, the majority of air emissions associated with the Project would result from operation of the new Quakertown and Marcus Hook Compressor Stations. This section summarizes federal and state air quality regulations that are applicable to the proposed facilities. This section also characterizes the existing air quality and describes potential impacts the facilities may have on air quality regionally and locally.

Existing Air Quality

The Project area for this air analysis includes Northampton, Bucks, Montgomery, Chester, and Delaware Counties, Pennsylvania and New Castle County, Delaware. The climate of the Project area is characterized as continental, with cold to moderately cold winters and warm to hot summers. Maximum daily average temperatures peak at about 87.1degrees Fahrenheit in July and minimum average daily temperatures are typically lowest in January at 25.6 degrees Fahrenheit. Precipitation in the Project area varies,

with an average monthly high of 4.4 inches in July and 2.7 inches in February (NOAA 2015).

Ambient air quality is protected by the Clean Air Act (CAA) of 1970, as amended in 1977 and 1990. The USEPA oversees the implementation of the CAA and establishes NAAQS to protect human health and welfare.[32] NAAQS have been developed for seven "criteria air pollutants", including nitrogen dioxide (NO_2), carbon monoxide (CO), ozone (O_3), sulfur dioxide (SO_2), particulate matter less than or equal to 2.5 microns in aerodynamic diameter ($PM_{2.5}$), particulate matter less than or equal to 10 microns in aerodynamic diameter (PM_{10}), and lead, and include levels for short-term (acute) and long-term (chronic) exposures. The NAAQS include two standards, which are primary and secondary. Primary standards establish limits that are considered to be protective of human health and welfare, including sensitive populations such as children, the elderly, and asthmatics. Secondary standards set limits to protect public welfare, including protection against reduced visibility and damage to crops, vegetation, animals, and buildings (USEPA 2018d).

States may adopt standards that are at least as stringent as the NAAQS. At the state level, the PADEP has adopted the NAAQS and state ambient air quality standards for total settled particulates, beryllium, fluorides, and hydrogen sulfide that are codified at Title 25 of the PAC Section 131.3. Delaware has adopted the NAAQS and state ambient air quality standards for total particulate matter, one-hour O_3, hydrocarbons, and hydrogen sulfide. The Delaware standards are codified at Title 7 of the Delaware Administrative Code (DAC), Section 1103.

The USEPA, and state and local agencies have established a network of ambient air quality monitoring stations to measure concentrations of criteria pollutants across the U.S. The data are then averaged over a specific time period and used by regulatory agencies to determine compliance with the NAAQS and to determine if an area is in attainment (criteria pollutant concentrations are below the NAAQS), nonattainment (criteria pollutant concentrations exceed the NAAQS), or maintenance (area was formerly nonattainment and is currently in attainment). All of the counties in the Project area are designated as nonattainment for the 2015 and 2008 O_3 standards and maintenance for the 2006 $PM_{2.5}$ standard. In addition, Delaware County, Pennsylvania is designated as nonattainment for the 2012 $PM_{2.5}$ standard. All of the counties in the Project area are in attainment for all other criteria pollutants.

In addition, Delaware and Pennsylvania are within the Ozone Transport Region (OTR), which includes 11 states in the Northeast and the Mid-Atlantic, the District of Columbia, and parts of northern Virginia. Ozone transport from states in the OTR contributes to O_3 NAAQS violations in one or more other states. Stationary sources in

[32] The current NAAQS are listed on the USEPA's website at https://www.epa.gov/criteria-air-pollutants/naaqs-table.

these states are subject to more stringent permitting requirements, and various regulatory thresholds are lower for the pollutants that form O_3, even if they meet the O_3 NAAQS. Ozone is not directly emitted into the atmosphere from an emissions source; it develops as a result of a chemical reaction between oxides of nitrogen (NO_x) and VOCs in the presence of sunlight. Therefore, NO_x and VOCs are often referred to as O_3 precursors and are regulated to control the potential for O_3 formation. Each state in the OTR is required to submit a State Implementation Plan and enact measures to limit emissions of O_3 precursors.

The USEPA defines air pollution to include GHGs, finding that the presence of GHGs in the atmosphere may endanger public health and welfare through climate change. GHGs occur in the atmosphere both naturally and as a result of fossil fuel combustion and land use change. As with any fossil fuel-fired project or activity, the Project would contribute GHG emissions. The primary GHGs that would be emitted by the Project are carbon dioxide (CO_2), methane, and nitrous oxide. Emissions of GHGs are typically quantified and regulated in units of CO_2 equivalents (CO_2e). The CO_2e takes into account the global warming potential (GWP) of each GHG. The GWP is the measure of a particular GHG's ability to absorb solar radiation as well as its residence time within the atmosphere. The GWP allows comparison of global warming impacts between different gases; the higher the GWP, the more that gas contributes to climate change in comparison to CO_2. Thus, CO_2 has a GWP of 1, methane has a GWP of 25, and nitrous oxide has a GWP of 298.[33] There are no applicable ambient standards or emission limits for GHG under the CAA. Downstream emissions of GHGs from burning the new natural gas capacity for the Project are discussed in section B.10.

Federal Air Quality Requirements

The provisions of the CAA that are applicable to the Project are discussed below. The estimated potential operational emissions for the Quakertown and Marcus Hook Compressor Stations are presented in table B-21, below.

Prevention of Significant Deterioration and New Source Review

Proposed new or modified air pollutant emission sources must undergo a New Source Review (NSR) prior to construction or operation. Through the NSR permitting process, state and federal regulatory agencies review and approve project emissions increases or changes, emissions controls, and various other details to ensure air quality does not deteriorate as a result of new or modified existing emission sources. The three basic categories of NSR permitting are Prevention of Significant Deterioration (PSD),

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[33] These GWPs are based on a 100-year time period. We have selected their use over other published GWPs for other timeframes because these are the GWPs the USEPA has established for reporting of GHG emissions and air permitting requirements. This allows for a consistent comparison with these regulatory requirements.

Nonattainment New Source Review (NNSR), and minor source NSR. PSD, NNSR, and minor source NSR are applicable to projects depending on the size of the proposed project, the projected emissions, and if the project is proposed in an attainment area or nonattainment/maintenance area. The PADEP administers the NSR and PSD program in Pennsylvania; the DNREC administers the program in Delaware.

PSD regulations define a major source as any source type belonging to a list of name source categories that have a potential to emit 100 tons per year (tpy) or more of any regulated pollutant or 250 tpy for sources not among the listed source categories. These are referred to as the PSD major source thresholds. Based on the estimated operating emissions presented in table B-21, major source NSR permits would not be required for the Project. Both the Quakertown and Marcus Hook Compressor Stations would be classified as new minor sources; as such, Adelphia would be required to obtain minor source air permits from the PADEP for each of these stations.

Title V Permitting

Title V is an operating air permit program run by each state for each facility that is considered a "major source." The major source threshold for an air emission source is 100 tpy for criteria pollutants, 10 tpy for any single hazardous air pollutant (HAP) and 25 tpy for total HAPs. Based on the potential emission rates for each stationary source facility presented in table B-21, the new Quakertown and Marcus Hook Compressor Stations would not meet the definition of a major source and would therefore not be required to obtain Title V major source permits.

New Source Performance Standards

The USEPA promulgates New Source Performance Standards (NSPS) for new, modified, or reconstructed stationary sources to control emissions to the level achievable by the best-demonstrated technology for stationary source types or categories as specified in the applicable provisions. The NSPS also establish fuel, monitoring, notification, reporting, and recordkeeping requirements.

NSPS Subpart JJJJ sets emission standards for NO_X, CO, and VOCs from new stationary spark ignition internal combustion engines. Subpart JJJJ would apply to the new compressor and emergency generator engines at the Quakertown and Marcus Hook Compressor Stations.

NSPS Subpart OOOOa sets fugitive leak monitoring and repair requirements for compressor stations. Subpart OOOOa would apply to the Quakertown and Marcus Hook Compressor Stations. Adelphia has stated that it would comply with all applicable requirements of these NSPS.

National Emission Standards for Hazardous Air Pollutants

The 1990 CAA amendments established a list of 189 HAPs, resulting in the promulgation of National Emission Standards for Hazardous Air Pollutants (NESHAP). The NESHAPs regulate HAP emissions from specific source types located at major or area sources of HAPs by setting emission limits, monitoring, testing, record keeping, and notification requirements.

The proposed Quakertown and Marcus Hook Compressor Stations would not be major sources of HAPs. Both stations would include the addition of new compressor and emergency generator engines, which would require compliance with NESHAP Subpart ZZZZ. Adelphia would comply with Subpart ZZZZ by meeting the requirements of NSPS JJJJ.

General Conformity

The General Conformity Rule was developed to ensure that federal actions in nonattainment and maintenance areas do not impede states' attainment of the NAAQS. The lead federal agency must conduct a conformity analysis if a federal action would result in the generation of direct and indirect emissions that would exceed the general conformity applicability threshold levels of the pollutant(s) for which a county is designated nonattainment or maintenance.

Conforming activities or actions should not, through additional air pollutant emissions:

- cause or contribute to new violations of the NAAQS in any area;
- increase the frequency or severity of any existing violation of any NAAQS; or
- delay timely attainment of any NAAQS or interim emission reductions.

The General Conformity Rule entails both an applicability analysis and a subsequent conformity determination, if applicable. A General Conformity Determination must be completed when the total direct and indirect emissions of a project would equal or exceed specified pollutant thresholds on a calendar year basis for each nonattainment or maintenance area.

Estimated emissions for the Project subject to review under the general conformity thresholds include construction emissions and operational emissions not subject to major or minor NSR permitting. Ongoing operational emissions from the Project that are not subject to NSR permitting are limited to minor fugitive releases and blowdown/vented emissions that would not exceed general conformity applicability thresholds. Detailed construction emissions are presented in table B-19 and a comparison of the construction emissions to applicable general conformity thresholds are presented in

table B-20, below. Detailed emission calculations for the emission estimates identified in tables B-19 and B-20 were filed in Adelphia's August 31, 2018 submittal.[34] Construction emission estimates for the Project would not exceed General Conformity applicability thresholds; therefore, a General Conformity Determination is not required.

Greenhouse Gas Mandatory Reporting Rule

The USEPA's Mandatory Reporting of Greenhouse Gases Rule requires reporting from applicable sources of GHG emissions if they emit greater than or equal to 25,000 metric tons of GHGs (as CO_2e) in one year. The Mandatory Reporting Rule does not require emission control devices and is strictly a reporting requirement for stationary sources based on actual emissions. Although the rule does not apply to construction emissions, we have provided GHG construction emission estimates, as CO_2e, for accounting and disclosure purposes in table B-19, below. Operational GHG emission estimates are presented, as CO_2e, in table B-21, below. Based on the emission estimates presented, actual GHG emissions from operation of the Quakertown and Marcus Hook Compressor Stations would likely exceed the 25,000-tpy reporting threshold and reporting requirements for the Mandatory Reporting Rule would therefore be applicable to the Project.

State Regulations

This section discusses the potentially applicable state air regulations for the Project. Emissions resulting from the Project are subject to Pennsylvania air quality standards, codified in the PAC, and Delaware air quality standards, codified in the DAC. Specific regulations and their applicability are reviewed below. Adelphia submitted state permit applications addressing applicable regulations in 2018.

Pennsylvania

Air pollution control regulations are promulgated in Title 25 PAC, Sections 121 through 145. Federal programs that are incorporated into Pennsylvania's code include NESHAP, NSPS, and NSR. Pennsylvania has full delegation from the USEPA for air permitting programs. A Plan Approval from the PADEP is required prior to construction of the Quakertown and Marcus Hook Compressor Stations, which are minor sources subject to NSR review. Adelphia filed its Plan Approval applications on April 16, 2018 for the construction of the Quakertown and Marcus Hook Compressor Stations, and PADEP held a public hearing on December 4, 2018. A final Plan Approval issuance is pending.

In addition to controls for combustion emission sources, Title 25 PAC, Section 123.1 limits the emission of outdoor fugitive air contaminants. Sources that generate

[34] Detailed emissions calculations are available for public review on eLibrary under accession no. 20180831-5177.

fugitive dust must take all reasonable actions to prevent particulate matter from becoming airborne. These measures may include, but are not limited to, paving or frequent cleaning of roads, driveways and parking lots and applying water on dirt roads, material stockpiles and other surfaces which may give rise to airborne dusts.

Title 25 PAC, Section 123.2 prohibits fugitive particulate matter emissions into the outdoor atmosphere to the extent that the emissions are visible at the point the emissions pass outside a person's property. Title 25 PAC, Section 126.501 established a heavy-duty diesel emission program under Section 177 of the CAA designed to achieve emission reductions of the precursors of O_3, particulate matter, air toxics, and other air pollutants. Certain provisions of the California exhaust emission standards and test procedures were adopted for heavy-duty diesel vehicles manufactured in the year of 1985 and onward.

Delaware

Air pollution control regulations are promulgated in the Air Quality Management Section of Title 7 DAC, Sections 1101 through 1150. Federal programs that are incorporated into Delaware's code include NESHAP, NSPS, and NSR. Delaware has full delegation from the USEPA for air permitting programs. In addition, any equipment that will emit more than 10 pounds per day of air contaminants must have an operating permit in accordance with the requirements in Title 7 DAC, Section 1102. Adelphia submitted its air contaminant registration to the DNREC on August 6, 2018 for the Delmarva Meter Station. In addition to controls for combustion emission sources, Title 7 DAC, Section 1106 requires dust control measures to limit emissions of particulate matter from construction and materials handling.

General Impacts and Mitigation

Construction

Project construction would result in temporary, localized emissions that would last the duration of construction activities (i.e., up to 8 months). Exhaust emissions would be generated by the use of heavy equipment and trucks powered by diesel or gasoline engines. Exhaust emissions would also be generated by delivery vehicles and construction workers commuting to and from work areas.

Construction activities would also result in the temporary generation of fugitive dust due to vegetation clearing and grading, ground excavation, and driving on unpaved roads. The amount of dust generated would be a function of construction activity, soil type, soil moisture content, wind speed, precipitation, vehicle traffic and types, and roadway characteristics. Emissions would be greater during dry periods and in areas of fine-textured soils subject to surface activity.

Construction emissions were estimated based on the fuel type and anticipated frequency, duration, capacity, and levels of use of various types of construction equipment. Construction emissions were calculated using emission factors provided in AP-42 data (USEPA 2018e) and the USEPA's NONROAD 2008 and MOVES2014a models. Estimated construction emissions for the Project are summarized by Project facility for each county in table B-19. These estimated emissions include exhaust emissions and fugitive dust from on-road and off-road construction equipment and vehicles and exhaust emissions from construction worker commutes and vehicles used to deliver equipment/materials to the site (see appendix I for a detailed breakdown of emissions for these categories).

Construction emissions shown in table B-19 are not expected to result in a violation or degradation of ambient air quality standards, and would not exceed applicable general conformity standards (see table B-20). Adelphia would minimize construction emissions by operating equipment on an as-needed basis, following equipment manufacturer operating recommendations to maximize fuel efficiency, and contractually requiring the construction contractor to minimize emissions by following local, state, and federal emission standards and air quality regulations, including limiting idling. Adelphia would take measures in its Fugitive Dust Plan to reduce fugitive emissions, including:

- application of dust suppressants (e.g., water from municipal sources or tackifiers) to disturbed work areas and unpaved access roads;
- employing construction equipment on an as needed basis;
- removal of spilled or tracked dirt and construction debris from paved streets; and
- reducing vehicle speeds on unpaved roads.

Construction emissions would occur over the duration of construction and would be emitted at different times and locations throughout the Project area. Construction emissions would be minor and would result in short-term, localized impacts in the immediate vicinity of the Project facilities. With the mitigation measures proposed by Adelphia, we conclude that air quality impacts from construction would be temporary and not result in significant impacts on local or regional air quality.

Table B-19 Summary of Estimated Emissions from Construction of the Project								
Source	2019 Construction Emissions (tpy)							
	NO_X	CO	SO_2	VOC	PM_{10}	$PM_{2.5}$	CO_2e	HAPs
Northampton County, Pennsylvania								
Martins Creek Station	0.0	0.0	0.0	0.0	0.0	0.0	0.3	<0.1
Bucks County, Pennsylvania								
Quakertown Compressor Station	7.4	4.8	<0.1	0.5	2.3	0.8	2,110.8	0.2
Quakertown Meter Station	3.4	2.8	<0.1	0.2	1.1	0.3	1,124.0	0.1
Quakertown Tap Valve[a]	0.1	0.2	0.0	<0.1	6.4	0.7	45.4	<0.1
Montgomery County, Pennsylvania								
Skippack Tap Valve[a]	<0.1	0.2	<0.1	<0.1	6.4	0.7	45.4	<0.1
Perkiomen Creek BAV	<0.1	<0.1	0.0	0.0	0.6	0.6	12.6	<0.1
East Perkiomen Creek BAV	<0.1	<0.1	0.0	0.0	0.6	<0.1	12.6	<0.1
Chester County, Pennsylvania								
MLV 2	<0.1	<0.1	0.0	0.0	0.6	<0.1	12.6	<0.1
Paoli Pike BAV	<0.1	<0.1	0.0	0.0	0.6	<0.1	12.6	<0.1
French Creek BAV	<0.1	<0.1	0.0	0.0	0.6	<0.1	12.6	<0.1
Cromby BAV	<0.1	<0.1	0.0	0.0	0.6	<0.1	12.6	<0.1
Schuylkill River BAV	<0.1	<0.1	0.0	0.0	0.6	<0.1	12.6	<0.1
Delaware County, Pennsylvania								
Tilghman Lateral[b]	8.5	6.6	<0.1	0.2	8.4	1.3	2,952.6	0.2
Chester Creek BAV	<0.1	0.2	0.0	<0.1	6.4	0.7	45.4	<0.1
MLV 1	<0.1	0.2	0.0	<0.1	6.4	0.7	45.4	<0.1
Marcus Hook Compressor Station	6.8	4.7	<0.1	0.1	2.3	0.8	2,090.4	0.2
Transco Meter Station	3.1	2.7	<0.1	<0.1	1.1	0.3	1,110.5	0.1
Tilghman Meter Station	3.1	2.7	<0.1	<0.1	1.1	0.3	1,110.5	0.1
Monroe Meter Station	3.1	2.7	<0.1	<0.1	1.2	0.3	1,110.5	0.1
New Castle County, Delaware								
Parkway Lateral	2.9	2.7	<0.1	0.2	1.1	0.3	1,021.6	0.1
Delmarva Meter Station[c]	5.8	5.2	<0.1	0.5	1.5	0.5	677.6	0.1
Project Total	**44.6**	**36.0**	**0.1**	**1.8**	**49.9**	**8.7**	**13,578.6**	**1.1**

[a] Adelphia did not estimate construction emissions for the tap valves so we have conservatively applied emissions based on emissions reported for MLV 1 as a proxy.

[b] Adelphia's estimated emissions include the Ridge Lateral, which per its June 18, 2018 filing, was subsequently incorporated into the Tilghman Lateral. Therefore, we combined the estimated emissions for the Ridge and Tilghman Laterals to provide a conservative analysis.

[c] This meter station would include delivery interconnects to Columbia, Delmarva, and TETCO.

Table B-20 Comparison of Construction Emissions for the Project to General Conformity Thresholds[a,b]				
Air Pollutant	Designated Area	Threshold (tpy)	Pollutant or Precursor	2019 Construction Emissions (tpy)
O_3	Northampton County, Pennsylvania	25[c]	VOC	0.0
		100	NOx	0.0
	Bucks County, Pennsylvania	25[c]	VOC	0.7
		100	NOx	10.8
	Montgomery County, Pennsylvania	25[c]	VOC	0.1
		100	NOx	<0.1
	Chester County, Pennsylvania	25[c]	VOC	0.0
		100	NOx	0.1
	Delaware County, Pennsylvania	25[c]	VOC	0.5
		100	NOx	24.6
	New Castle County, Delaware	25[c]	VOC	0.7
		100	NOx	8.7
$PM_{2.5}$	Northampton County, Pennsylvania	100	$PM_{2.5}$	0.0
	Bucks County, Pennsylvania	100	$PM_{2.5}$	1.8
	Montgomery County, Pennsylvania	100	$PM_{2.5}$	1.4
	Chester County, Pennsylvania	100	$PM_{2.5}$	0.4
	Delaware County, Pennsylvania	100	$PM_{2.5}$	4.3
	New Castle County, Delaware	100	$PM_{2.5}$	0.8

[a] General Conformity is only applicable to nonattainment or maintenance areas. Thresholds for each pollutant are based on the severity of the nonattainment areas or maintenance area where the Project is located. Pollutants and counties for which the Project would not require a General Conformity determination are not shown.

[b] The total may not equal the sum of the addends in table B-19 due to rounding.

[c] While the county is designated as marginal nonattainment for the 2015 O_3 standard, and this standard would apply to the General Conformity Determination of the Project, the area was previously designated as severe nonattainment. Therefore, as a conservative approach, the thresholds established for severe nonattainment areas is used for comparison with Project construction emissions.

Operations

Project operation would result in air emissions due to combustion at the Quakertown and Marcus Hook Compressor Stations, as well as fugitive and vented emissions at the compressor stations, meter stations, MLVs, BAVs, and along the pipeline laterals. Combustion emission-generating equipment at each Compressor Station would include:

- three 1,875 horsepower Caterpillar G3606 natural gas-fired reciprocating compressor engines; and

- one 670 horsepower Caterpillar G3412C natural gas-fired reciprocating emergency generator.

Table B-21 summarizes the annual operational emissions, in tpy, by facility and emissions source for the Project. These estimated emissions are based on manufacturers' data and assumptions that the compressor station engines operate at full load for an entire year (8,760 hours). The Quakertown and Marcus Hook Compressor Stations would not likely operate at capacity (i.e., full load) every day; therefore, table B-21 provides conservative, worst-case estimates of emissions. Fugitive emissions are minor leaks that would occur at valves, seals, and other piping components at the aboveground facilities and along the pipelines. Operational emissions along the existing mainline, existing 20-inch-diameter pipeline, Parkway Lateral, and Tilghman Lateral would be limited to non-combustion related fugitive emissions (see table B-21). In addition, vented emissions would be released at the BAVs in an emergency and at the MLVs for routine pipeline maintenance or in the event of an emergency. Maintenance and emergency blowdowns would also occur at the Quakertown and Marcus Hook Compressor Stations. Since providing the estimates of fugitive emissions provided in table B-21, Adelphia has specified its intent to increase the capacity of the Existing System. Although Adelphia did not propose any changes to the Project's design or compression, the greater capacity could result in higher vented emissions during emergency and planned releases at MLVs and BAVs. However, these releases would be infrequent and are not expected to significantly degrade local air quality.

Adelphia would implement measures to reduce fugitive emissions, including implementing operation and preventative maintenance practices consistent with manufacturer recommendations. Adelphia has stated that it intends to participate in the USEPA Natural Gas STAR Program. Adelphia is currently evaluating the scope of its participation in program components, but has expressed intent to incorporate the follow designs in its Project:

- recapture and recycle gas normally vented at compressor stations through the use of recovery piping;
- design the blow-off piping to be used as bypass piping; and
- utilize infrared cameras and organic vapor detectors (leak sniffers).

In addition, Adelphia would be required to comply with the USEPA's 40 CFR 98, Subpart W and with 40 CFR 60, Subpart OOOOa standards, which both require leak detection and repair programs. However, certain provisions from 40 CFR 60, Subpart OOOOa are formally being reconsidered by the USEPA, including the leak detection and repair programs. Adelphia would comply with all provisions from Subpart OOOOa that apply at the time the Project is completed. Fugitive methane emissions are a source of GHG emissions from the proposed Project.

Table B-21 Summary of Annual Operational Emissions (tpy)[a]								
Facility	NO_x	SO_2	CO	PM_{10}	$PM_{2.5}$	VOC	CO_2e	Total HAPs
Pipeline Fugitive Emissions[b,c]	0.0	0.0	0.0	0.0	0.0	87.1	25,286.0	0.0
Meter Stations Fugitive Emissions[b,d]	0.0	0.0	0.0	0.0	0.0	8.5	1,810.0	0.0
Quakertown Compressor Station								
Proposed compressors	16.29	0.12	9.84	1.89	1.89	16.44	28,923	6.51
Proposed emergency generator	0.74	0	0.66	0.03	0.03	0.33	219	0.05
Proposed tanks	--	--	--	--	--	0.23	0.2	0.02
Fugitive emissions[b]	--	--	--	--	--	5.76	2,207	0.02
Total	**17.03**	**0.11**	**10.51**	**1.91**	**1.91**	**22.75**	**31,348**	**6.6**
Marcus Hook Compressor Station								
Proposed compressors	16.29	0.12	9.84	1.89	1.89	16.44	28,923	6.51
Proposed emergency generator	0.74	0	0.66	0.03	0.03	0.33	219	0.05
Proposed tanks	--	--	--	--	--	0.23	0.2	0.02
Fugitive emissions[b]	--	--	--	--	--	5.76	2,207	0.02
Total	**17.03**	**0.11**	**10.51**	**1.91**	**1.91**	**22.75**	**31,348**	**6.6**

[a] The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends.

[b] Fugitive emissions include venting/blowdown emissions.

[c] Including MLVs, BAVs, and tap valves along the existing mainline.

[d] Including new and existing Quakertown Meter Stations along the existing mainline, the new Delmarva Meter Station along the Parkway Lateral, and the new Monroe, Transco, and Tilghman Meter Stations along the Tilghman Laterals.

Air Quality Modeling

To assess air quality impacts from construction of the new Quakertown and Marcus Hook Compressor Stations on regional air quality, Adelphia conducted an ambient air quality analysis for NO_2, $PM_{2.5}$, PM_{10}, CO, and SO_2 using the USEPA's AERMOD program. The model estimates the predicted concentrations of criteria pollutants emitted from the compressor stations using conservative assumptions consistent with USEPA guidelines. Background concentrations from the nearest air monitors were then added to the predicted concentrations from the AERMOD analysis and the total was compared to the NAAQS. The results of the air quality modeling analysis are presented in table B-22. The results of Adelphia's modeling analysis indicate that the combined total of background and Project-related emissions would not

exceed the NAAQS, which are established to be protective of human health, including sensitive populations such as children, the elderly, and asthmatics.

Based on the estimated emissions from operation of the proposed Project facilities and review of the modeling analyses, we find that the Project would not cause or contribute to a violation of the NAAQS, which are protective of human health, including children, the elderly, and sensitive populations. While the Project would have minor impacts on local air quality during operation, we have determined that the Project would not result in significant impacts on air quality.

Table B-22
Predicted Air Quality Impacts for the Project

Facility / Pollutant	Average Period	NAAQS (µg/m³)	Facility Impact (µg/m³)	Background Concentration (µg/m³)	Facility Impact + Background (µg/m³)
Quakertown Compressor Station					
CO	1-hour	40,000	389.7	1,833.0	2,222.7
	8-hour	10,000	211.0	1,260.2	1,471.2
SO_2	1-hour	196	0.7	55.9	56.6
	3-hour	1,300	0.7	55.9	56.6
	24-hour	260	0.5	18.6	19.1
	Annual	80	0.1	3.3	3.4
PM_{10}	24-hour	150	8.9	42.0	50.9
$PM_{2.5}$	24-hour	35	7.0	27.3	34.3
	Annual	12	1.4	10.5	11.9
NO_2	1-hour	188	93.3	82.2	175.5
	Annual	100	11.8	18.3	29.6
Marcus Hook Compressor Station					
CO	1-hour	40,000	354.7	1,718.4	2,073.1
	8-hour	10,000	281.7	1,374.7	1,656.4
SO_2	1-hour	196	0.5	23.6	24.1
	3-hour	1,300	0.5	23.6	21.4
	24-hour	260	0.5	13.4	13.9
	Annual	80	0.1	2.1	2.2
PM_{10}	24-hour	150	7.7	113.0	120.7
$PM_{2.5}$	24-hour	35	6.4	25.0	31.4
	Annual	12	1.2	10.0	11.2
NO_2	1-hour	188	72.6	83.4	156.0
	Annual	100	9.8	17.5	27.3

Impacts on Human Health

We received several comments from individuals and organizations concerned with air quality in the vicinity of the Project and the health effects associated with Project-related emissions. Generally, natural gas is composed of approximately 90 percent methane. When combusted, methane forms CO_2 and water vapor, comprising the majority of compressor station emissions. The CO_2 emissions, combustion-related emissions, including NO_x and CO, and the emissions associated with the majority of the remaining 10 percent of natural gas composition are shown in table B-21. With the exception of CO_2e, all of the compounds identified in table B-21 have known health impacts, and are therefore regulated by the USEPA through various components of the CAA. As described above, under the CAA, the USEPA established the NAAQS to protect human health (including sensitive subpopulations such as children or those with chronic illnesses) and public welfare. The air quality modeling completed by Adelphia indicates that the proposed compressor stations would not result in emissions that exceed the NAAQS or significantly contribute to a degradation of ambient air quality. The air quality model evaluates pollutant concentrations from the facility fenceline to a 20 kilometer (12.4 miles) radius from the emissions source; therefore, all nearby residences are included in the model.

Additionally, we received a comment recommending a human health risk assessment (risk assessment) be completed for the Project. FERC completed an independent human health risk assessment in the New Market EA.[35] The compressor stations in the New Market EA risk assessment were about twice as big as the proposed compressor stations in the Project and therefore emitted a greater volume of HAPs as compared to the proposed compressor stations. The risk assessment used conservative assumptions designed to overstate what any individual was likely to experience, and concluded that modeled HAPs emissions from both normal operations and blowdown events were below a level of health concern. The New Market EA provides additional detail on the methodologies and conclusions of the risk assessment. Based on the size of the proposed Adelphia compressor stations, and the results of the New Market EA, we do not believe that conducting a risk assessment specific to the Adelphia facilities is warranted.

One commenter expressed a concern with acute health impacts due to compressor station operation and blowdowns and cited a study that aggregated the emissions data for 18 Title V major source compressor stations that operate throughout New York. As described in section 8.1, the proposed Quakertown and Marcus Hook Compressor Stations are not Title V major sources; therefore, it is not appropriate to compare the emissions of larger facilities that emit a significantly greater volume of emissions as compared to a minor source. Additionally, the referenced study aggregates yearly

[35] Available on eLibrary under accession no. 20151020-4003.

emissions data for compressor stations that are distributed throughout the state of New York to make inferences about risk to human health. Air pollution modeling is typically evaluated on a county or regional scale that incorporates topography, terrain, ground cover, and historic weather data over a multi-year span to refine the air quality model and make it site-specific, considering local factors such as weather and wind patterns that contribute to pollutant dispersion. The air quality modeling completed by Adelphia incorporated these site-specific factors into their analysis. It is not appropriate to aggregate emissions for compressor stations that are separated by large distances, and do not have overlapping air quality impacts, to make conclusions regarding impacts on human health. Therefore, we believe that the site-specific air quality modeling reviewed above provides a more accurate representation of the predicted air quality impacts than the referenced study and do not recommend the study's use for evaluating the human health risk of a specific compressor station.

We also received several comments from individuals and organizations concerned with health effects associated with Project-related emissions of radon gas. Although radon can be entrained in fossil fuels, including natural gas reserves, natural gas processing helps reduce radon concentrations in pipeline-quality natural gas. The upstream processing that removes liquefied petroleum gas from the natural gas stream also removes radon. This is because radon and the two major components of liquefied petroleum gas, namely propane and ethane, have similar boiling points. Processing can remove an estimated 30 to 75 percent of the radon from natural gas (Johnson *et al.* 1973). The Project would use transmission-quality natural gas, which has already been processed and has had impurities (including radon) removed. Additionally, radon has a half-life, defined as the time it takes for the compound to decay to half its initial concentration, of only 3.8 days. The time needed to gather, process, store and deliver natural gas allows a portion of the radon, if present in small quantities after processing, to decay, thereby decreasing the amount of radon in the gas before being combusted in a compressor station or used in a residence. Therefore, we do not believe that radon would be present in the pipeline-quality gas in significant quantities that would result in health impacts on nearby populations.[36]

The Clean Air Council also submitted comments requesting that Adelphia revise the construction emissions estimates presented in its application, including changes in the software used to estimate the emissions and modifications of underlying assumptions.[37] FERC staff requested that Adelphia revise its construction emissions estimates based on a review of Adelphia's assessment and in response to the Clean Air Council comments in an environmental information request issued on July 17, 2018.[38] Adelphia's revised construction emissions estimates are presented in table B-19 and appendix I. The Clean

[36] For additional information on radon, refer to FERC's Atlantic Sunrise Project Final EIS at https://www.ferc.gov/industries/gas/enviro/eis/2016/12-30-16-FEIS.asp

[37] Available on eLibrary under accession no. 20180213-5358.

[38] Available on eLibrary under accession no. 20180717-3038.

Air Council also commented that Adelphia should participate in the USEPA's Natural Gas STAR Program to reduce methane emissions, and should implement emissions controls such as reinjection of blowdown gas. As described above, Adelphia has stated that it intends to participate in the USEPA Natural Gas STAR Program and has expressed its intent to incorporate design measures to reduce fugitive methane emissions. The Clean Air Council commented that upstream and downstream GHG impacts of the Project should be considered in the analysis. Downstream GHG emissions are addressed below; the development of natural gas and associated emissions are outside the scope of this EA.

Lastly, in order to ensure compliance with the CAA, Adelphia would be required to obtain air quality permits through the PADEP and DNREC, as described above. Based our analysis above, we conclude that construction and operation of the Project would not have a significant impact on air quality or human health and would not exceed the NAAQS, which are established to be protective of human health, including sensitive populations such as children, the elderly, and asthmatics.

Downstream GHG Emissions

The Project would result in direct and downstream GHG emissions and would contribute to global increases in GHG levels. GHG emissions from construction and operation were included in tables B-19 and B-21 as CO_2e. The proposed Project would result in the acquisition of the Existing System, including the existing mainline and 20-inch-diameter pipeline. These existing pipelines would deliver 175 million cubic feet per day and 350 million cubic feet per day, respectively, of existing capacity to the Martins Creek LLC Electric Plant and the Lower Mount Bethel Energy LLC Combined Cycle Electric Plant. The majority of these volumes are currently delivered to the power plants. The certification of the 20-inch-diameter pipeline and the northern 34.8 miles of the existing mainline would result in the transfer of ownership only, and would not result in increased GHG emissions. Adelphia's amended application did increase the proposed capacity of the existing mainline from 175 million cubic feet per day to 250 million cubic feet per day; the additional 75 million cubic feet per day would be delivered to the southern portion of the Project. The southern portion of the pipeline system would transport 250 million cubic feet per day of natural gas, of which 22.5 million cubic feet per day is subscribed by the Philadelphia Electric Company for an unspecified end use. Because the downstream emissions from the remainder of the southern portion of the Project are not designated to a specific user, and the end use of the natural gas is not identified by Adelphia, the downstream GHG emissions of the southern portion of the Project are not calculated.[39]

[39] The Parkway Lateral and Delmarva Meter Station, which are proposed to provide natural gas service to TETCO and Columbia, may serve Calpine Corporation's power plants; however, as of the time of the EA's publication no contract or precedent agreement exists to ascribe any particular capacity to this potential end user.

Enbridge
Texas Eastern Transmission
560 Pottstown Pike
Chester Springs, PA 19425
610-458-1710

December 6, 2018

East Goshen Township
1580 Paoli Pike
West Chester, PA 19380

Re: Line No: 1-A/1-H
RW No: 079AAA Tax Parcel ID: 5304 0134080
Chester County, Pennsylvania

Dear Landowner,

First I would like to take this opportunity to introduce you to Enbridge. Recently Spectra Energy and Enbridge merged. The Spectra Energy name has been dropped and replaced with its new name, Enbridge. The Business Unit name, Texas Eastern Transmission, LP will remain the same.

Texas Eastern Transmission, LP (TETLP) has routine maintenance scheduled within its existing easement on or near your property. This work will involve accessing, mowing, clearing and a walking inspection of the easement area in accordance with said easement and Company Guidelines 5.1 through 5.4 as referenced on the back of this letter. This activity is scheduled to begin the first quarter of 2019 and continue until completed. Trees, bushes or other encroachments within the easement area not removed at this time will be marked for removal at a later date. Areas with fences should have gates unlocked for access along the pipeline.

Should there be a loss of annual crop production or other associated damages as a result of this work, please contact me within thirty days of disturbance and I will be happy to meet with you to discuss compensation in accordance with the existing easement.

Should you be aware of or have any special concerns prior to entry such as livestock fencing, underground water lines, etc., please do not hesitate to contact me directly. Should you have a tenant on the property, please pass along my contact information to them or provide this office the name and contact information of the tenant.

If you have any special concerns or problems, please contact area supervisor Sean Cramer at 610-458-1712 or myself at 610-458-1718. A Texas Eastern representative will be able to assist you in resolving questions or issues causing your concern. I look forward to working with you to make this a positive experience.

Sincerely,

William Savage

William Savage
Right of Way and Land Texas Eastern Transmission, LP

Cc: Northeast Region

5.0 GENERAL REQUIREMENTS

5.1 No buildings, structures or other obstructions may be erected within, above or below the Company's pipeline right-of-way. If requested, the Company will furnish pipeline easement information which describes the pipeline right-of-way width.

5.2 Wire type, stockade, decorative and similar type fencing that can be easily removed and replaced may cross the Company's pipeline right-of-way at or near right angles. Fences crossing the Company's pipeline right-of-way must have a minimum 10 foot wide gate for access. No fence shall be allowed within the Company's pipeline right-of-way parallel to the Company's pipeline(s).

5.3 Planting of trees is not permitted on the Company's pipeline right-of-way. The Company may side trim trees that overhang across the Company's pipeline right-of-way to eliminate obstruction of right-of-way visibility from the ground or air.

5.4 Planting of shrubs, bushes or other plants associated with landscaping on the Company's pipeline right-of-way is subject to Company approval and shall not exceed 5 feet in height at maturity. Shrubs, bushes or other plants shall not be installed within 10 feet of the Company's pipeline(s). The Company will not be responsible for the cost of replacing any landscaping damaged, destroyed or disturbed due to maintenance activities on the Company's pipeline right-of-way.

5.5 No drainage swales and no reductions in grade are permitted on the Company's pipeline right-of-way.