west virginia department of environmental protection

Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone (304) 926-0475 • FAX: (304) 926-0479

Harold D. Ward, Cabinet Secretary
dep.wv.gov

ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	R13-3714
Plant ID No.:	059-00133
Applicant:	TransGas Development Systems, LLC
Facility Name:	Adams Fork Harless Data Center Energy Campus
Location	Holden, Mingo County
NAICS Code:	221112 – Fossil Fuel Electric Power Generation
Application Type:	Construction
Received Date:	March 26, 2025 (Revised application submitted May 14, 2025)
Engineer Assigned:	Jerry Williams
Fee Amount:	$2,000 ($1,000 45 CSR 13 Application Fee, $1,000 NSPS Fee)
Date Received:	April 2, 2025
Complete Date:	June 4, 2025
Due Date:	September 2, 2025
Applicant Ad Date:	April 9, 2025
Newspaper	*Williamson Daily News*
UTM's:	Easting: 401.420 km Northing: 4,179.002 km Zone: 17
Latitude/Longitude:	37.75302 / -82.11905
Description:	Construction and operation of an off-grid power generation facility.

CONFIDENTIAL BUSINESS INFORMATION OVERVIEW

TransGas Development Systems, LLC (TransGas) submitted an air permit application for an off-grid power generation facility to be located near Holden in Mingo County. This permit application included confidential business information (CBI) submitted under 45 CSR 31, entitled "Confidential Information". Therefore, both a CBI and redacted version of the application were submitted. TransGas provided all CBI under the requirements of 45 CSR 31, which is the Division of Air Quality (DAQ)

regulation that establishes the requirements for claiming information submitted to the DAQ as confidential and the procedures for determinations of confidentiality in accordance with the provisions of W. Va. Code §22-5-10.

The reason for the CBI submittal according to TransGas is that the application contains information that is fully protected under non-disclosure and confidentiality agreements between the applicant and equipment provider concerning development of the process and facility design. Release of this information could cause substantial harm to TransGas' competitive position in the market. For each submission of information any portion of which is claimed to be confidential, a complete set of the information, including the document justifying the claim of confidentiality shall be submitted simultaneously on uncolored paper with the information claimed to be confidential blacked out, and with the words "redacted copy – claim of confidentiality" marked clearly on each such page, so that such a set of information is suitable for public disclosure and provides notice to the public that a claim of confidentiality has been made. DAQ allows for electronic submittals (via email) of redacted permit applications. However, all CBI applications must be submitted via mail or hand delivered. During the Notice of Application period, the DAQ received a public comment concerning the proposed project, which specifically requested the release of information that has been redacted.

As stated in 45 CSR 31, Section 4, during the course of the DAQ's review of whether the information claimed to be confidential is a trade secret in accordance with this rule, the DAQ shall consider the following:

- The claim of confidentiality has not expired by its terms, nor been waived or withdrawn;
- The person asserting the claim of confidentiality has satisfactorily shown that it has taken reasonable measures to protect the confidentiality of the information, and that it intends to continue to take such measures;
- The information claimed confidential is not, and has not been, reasonably obtainable without the person's consent by other persons (other than governmental bodies) by use of legitimate means (other than discovery based on a showing of special need in a judicial or quasi-judicial proceeding);
- No statute specifically requires disclosure of the information; and
- Either the person has satisfactorily shown that disclosure of the information is likely to cause substantial harm to the business's competitive position or the information is voluntarily submitted information, and its disclosure would likely to impair the State's ability to obtain necessary information in the future.

Additionally, 45 CSR 31, Section 6, states that no person shall claim as confidential, information concerning the types and amounts of pollutants discharged. "Types and amounts of air pollutants discharged" is defined in 45 CSR 31 Section 2.4. Furthermore, 45 CSR 31B entitled "Confidential Business Information and Emission Data" is an interpretive rule that provides guidance and clarification concerning the term "types and amounts of air pollutants discharged" defined under 45CSR§31-2.4, the DAQ's legislative rule entitled "Confidential Information," and thus what information may not be claimed confidential in accordance with 45CSR§31-6.

The aforementioned public comment received during the Notice of Application comment period triggered a review of the CBI claims by the DEP's Office of the General Counsel (OGC). A letter dated

April 28, 2025, from the OGC was issued to TransGas that stated that the information claimed as CBI may not qualify for such designation as it falls under the definition of "Types and Amounts of Pollutants Discharged" as excluded under §45-31-6 as defined under §45-31-2.4 (and further defined under 45 CSR 31B). This letter was made available to the public on the WVDEP Application Xtender (AX) website at that time. There was also concern that the claimed CBI may not meet the eligibility requirements under §45-31-4.1(b) and 4.1(c). The letter requested further justification that the information claimed as CBI is not defined as "Types and Amounts of Pollutants Discharged" and also does not conflict with the eligibility requirements of §45-31-4.1(b) and 4.1(c). The letter requested a written response within 15 days.

TransGas provided a response to this request on May 2, 2025. This response was made available to the public on the AX website at that time. TransGas proposed to revise the CBI claim to cover the company names for the engine and control systems designers and manufacturers. This includes the engine model number which would identify the engine company. All other previously claimed CBI would be removed from the request. Upon reviewing this information, the WVDEP issued a letter to TransGas on May 9, 2025, stating that a permit application so submitted would be in compliance with the requirements governing the submission of CBI under 45 CSR 31 and 45 CSR 31B. TransGas provided the revised application to DAQ on May 14, 2025, and the application was made available to the public on the AX website at that time.

This engineering evaluation/fact sheet contains only the information that was provided in the redacted copy of the permit application. Furthermore, the information contained herein is more than adequate to make the appropriate permitting determinations and can be used to determine compliance with all applicable rules and regulations. This includes all necessary monitoring, recordkeeping, reporting, and testing that will be required as part of the proposed draft permit.

DESCRIPTION OF PROCESS

The following process description was taken from Permit Application R13-3714:

The Adams Fork Harless Data Center Energy Campus is a unique off-grid, electric generating facility designed to provide power to adjacent data center operations. The facility encompasses 117 engines (Source ID# 1S – 117S) with 114 engines operating full-time and 3 engines in reserve. Each engine has a proposed control strategy (Emission Point ID# 1E – 117E). The facility will contain 39 powerhouses with each containing 3 generator setups with each generator having a nameplate capacity of 25 MWe. Actual power generation will depend on the operating mode of the engines. Each engine will have a maximum power output of 21 MW, therefore, the theoretically installed power output would be 2,457 MW. The effective and continuously delivered power output will be 1,796 MW.

The engines are configured to be dual-fuel units and have the ability to operate on natural gas or diesel fuel, or can be operated on diesel fuel only, in backup mode. Under normal operation, the engines consume natural gas as their primary fuel with a pilot injection of ultra-low sulfur diesel (ULSD). Under natural gas operation, 2% of the energy comes from the pilot fuel, which can be increased to 100% in emergency operation.

The engines can operate under the following operational profiles:

Normal Operation
To ensure peak operation conditions, the engines will be regularly serviced. With 1-2 weeks of downtime per engine per year, 3 engines are going to be off-line at any time of the year. Under normal operations, the engines will be run at 75% power only. Therefore, the continuously delivered power will be 1,796 MW.

Compensation Mode
In the case of one or more, or in the unrealistic, but foreseen case of up to 29 engines out of service, the rest of the field will compensate, increasing their power output to 100%. For the calculation of the yearly emissions the worst case is assumed, when 29 engines go offline and the remaining 85 are operated at 100%.

Emergency Mode
In case the pipeline is down, or the gas cannot be delivered for any other reason, the engines can switch to diesel fuel mode immediately and are then operated on diesel fuel only. Apart from the different fuel type, the engines are controlled in the same way as in Normal Operation.

Startup Mode
To start an engine and bring power production online, several steps are necessary. In the first phase the emission control system is not operational temperature, therefore the control rate is not optimal. The following is a simplification and a representation of the worst case for emissions emission-wise. The different steps can be reduced to four main sub-modes:

- Speed up
  Bring the engine from standstill to nominal speed (89 rpm). This is done in diesel mode. The emission control system is still offline at this point, as it is not at optimal temperature. Once nominal speed is set and the minimum load for a fuel switch is reached (less than 5 minutes), the system initiates the next sub mode.

- Fuel Switch
  For about two minutes the load is kept constant, and the fuel is changed from 100% diesel to 98% gas & 2% diesel.

- Generator switched on
  On gas operation, the load is further increased until the generator can by energized and synchronized with the rest of the engine fleet. This takes no more than 5 minutes. For the emissions calculation of all these steps the emission control system is looked at as non-operational, even though the exhaust gases will have heated it already and some abatement is taking place, even at a reduced level.

- Load up cold control
  Once the generator is online and synchronized, then the engine is powered up to its set point (75% in normal operation mode). For reasons of simplicity and to ensure a conservative view on the problem, during engine load up the control system is looked at as cold and operational at

25% only. This is even though in reality the system was heated up constantly by the exhaust gases and reaching operational condition during the load up.

Shut Down
The shut down procedure consists of three phases:

- Ramp down
  The load is constantly reduced to a minimum load.

- Min Load
  At minimum load the generator is decoupled from the grid and the engine's load and speed setting are zero.

- Spin out
  Due to the zero-load setting the injection systems are turned off and the engine is spun out until full stop. In this entire sequence the emission control system is still operational due to its thermal inertia. Therefore, until the injection is stopped the emissions are treated.

The engines will operate on ULSD and natural gas depending on the operating status. ULSD will be stored in 40 storage tanks (Source ID# 118S – 157S, Emission Point ID# 118E – 157E) on the property. Natural gas will be delivered via pipeline. Tanks for control device liquids will be located at each powerhouse. There will be 39 tanks each of hydrous ammonia, caustic soda, sulfuric acid, sodium chlorite, and sodium hydrosulfide. These tanks are considered de minimis due to minimal emissions. Liquids and supplies for these tanks will be trucked to the site.

There is no steam-power production at the site. Cooling will be provided by mine pool water as needed. Therefore, there are no requirements for cooling towers.

SITE INSPECTION

A site inspection of the proposed location was conducted on May 20, 2025, by the writer and Joe Kessler (NSR Program Manager) of the DAQ. This is a greenfield site, and no construction or equipment installation was visible at the time of the site inspection. The proposed site is located in an industrial park with no residences nearby. There is a business (Coal Mac) located adjacent to the proposed location.

Directions to the site:

The facility will be located on the property at the Harless Industrial Park near Holden. This site can be accessed from U.S. Route 119 going south from Holden. Turn left onto 22 Mine Road. The proposed location is adjacent to Mohawk Industries.

Aerial view of the proposed site:

The site will be located in an industrial park and situated approximately close to the arrow in the photo found below.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions associated with this facility consist of the equipment listed in the following table and fugitive emissions.

Emission Unit ID#	Process Equipment	Calculation Methodology
1S – 117S	Engine 1 – Engine 117 28,194 HP (each)	Manufacturer Data (NOx, CO, PM, VOC, SO_2) EPA AP-42 Emission Factors Chapter 3.2 (HAPs)
118S – 157S	40 – Diesel Storage Tanks 170,000 gal (each)	EPA TANKS Emissions Estimation Software, Version 4.0.9d
De Minimis	39 – Hydrous Ammonia Storage Tanks	De Minimis
De Minimis	39 – Caustic Soda Storage Tanks	De Minimis
De Minimis	39 – Sulfuric Acid Storage Tanks	De Minimis
De Minimis	39 – Sodium Chlorite Storage Tanks	De Minimis
De Minimis	39 – Sodium Hydrosulfide Storage Tanks	De Minimis
HR	Paved Haul Roads	EPA AP-42 Emission Factors, Chapter 13.2.1

The potential emissions from the engines were estimated using the ability to fire the units with natural gas or diesel. The engines at the facility are capable of firing either fuel. The operating hours, operational mode and throughput of each type of fuel will be continuously monitored and recorded. TransGas will keep records of the total amount of hours each engine uses natural gas as a fuel and the total amount of hours each engine uses diesel as a fuel. The 12-month rolling sum of emissions will be calculated monthly.

The emission control systems for the engines consist of two main systems. The dry system on the high pressure side of the engine (before the turbocharger) and the wet system on the low pressure side, which is downstream of the turbocharger. The dry systems consist of an oxidation catalyst and an SCR catalyst. The catalytic reduction of CO has a reduction efficiency of over 99%. The same system oxidizes VOC emissions with a reduction efficiency of 99%. The de-NOx unit is a urea based SCR technology, and the reduction efficiency exceeds 90%. The wet system consists of four (4) stages, which reduce NOx further with 90.9% reduction efficiency and SO_2 with 70% reduction efficiency.

The emission abatement system that will be employed on each engine results in the following emissions reductions when operating in the following modes:

Mode	**NOx (%)**	**CO (%)**	**VOC/HAP (%)**	**PM (%)**	**SO_2 (%)**
Speed Up	0	0	0	0	95.0
Fuel Changeover	0	0	0	0	99.0
Generator Switched On	0	0	0	0	99.0
Load Up Cold Control	25.0	25.0	25.0	0	99.0
Normal Operation	99.0	99.0	99.0	25.0	99.0
Compensation Mode	99.0	95.0	99.0	25.0	99.0
Ramp Down	99.0	94.0	99.0	25.0	99.0
Min Load	70.0	50.0	70.0	0	70.0
Spin Out	40.0	35.0	40.0	0	40.0
Emergency	98.0	91.0	99.0	25.0	99.0

As discussed in the DESCRIPTION OF PROCESS and also as shown in the above table, the engines will operate in multiple modes. Under normal operations, the engine will remain comfortably below the PSD threshold. However, to ensure that the facility can be operated under worst-case conditions, the following worst-case scenario was examined.

The pipeline is out for eight (8) days, which equates to 192 hours. During this outage, the facility would be operated only on diesel fuel. During the same year, an unplanned event resulted in 31 engines are down and the remaining 86 engines are operated in compensation mode and will continue to deliver full power. This would increase the engines output to 99.4% load. It was estimated that the compensation mode would last for 24 days or 567 hours. Finally, the engines would have to go through 5 startups and shutdowns in place of the scheduled one (1) event. Using this worst case scenario results in the following hourly breakdown by operational mode:

Mode	**Hours**
Speed Up	0.42
Fuel Changeover	0.17
Generator Switched On	0.42
Load Up Cold Control	0.83
Normal Operation	7996.80
Compensation Mode	567.20
Ramp Down	1.67
Min Load	0.42
Spin Out	0.08
Emergency	192
Total Time	**8,760**

The operating hours used for the worst-case scenario results in the following potential to emit (PTE) for all of the engines:

Pollutant	**Annual Emissions (tons/year)**
Nitrogen Oxides	194.30
Carbon Monoxide	205.62
Volatile Organic Compounds	116.59
Particulate Matter-10/2.5	186.53
Sulfur Dioxide	9.93
Benzene	0.45
Toluene	0.16
Xylenes	0.11
Formaldehyde	0.046
Acrolein	0.0045
Acetaldehyde	0.013
Naphthalene	0.075
Total Hazardous Air Pollutants	0.86

The following table represents the maximum hourly and annual emissions during *normal operations* for one engine:

Pollutant	**Hourly Emissions (lb/hr)**	**Annual Emissions (tons/year)**
Nitrogen Oxides	0.14	0.61
Carbon Monoxide	0.34	1.47
Volatile Organic Compounds	0.23	0.99
Particulate Matter-10/2.5	0.34	1.49
Sulfur Dioxide	0.01	0.03
Benzene	0.00088	0.00352
Toluene	0.00032	0.00128
Xylenes	0.00022	0.00088
Formaldehyde	0.00009	0.00036
Acrolein	0.00001	0.00004
Acetaldehyde	0.00003	0.00012
Naphthalene	0.00015	0.0006
Total Hazardous Air Pollutants	0.0017	0.0068

Storage Tanks
The potential aggregate emissions for the 40 – 170,000 gallon diesel storage tanks include the losses from working and breathing. Due to the very low vapor pressure of diesel fuel (0.007 psia), the emissions associated with the diesel fuel tanks are low. EPA TANKS 4.09d allows users to enter specific information about a storage tank (dimensions, construction, paint condition, etc.), the liquid contents (chemical components and liquid temperature), and the meteorological conditions and location of the tank (nearest city, ambient temperature, etc.) to generate an air emissions report. Report features include estimates of monthly, annual, or partial year emissions for each chemical or mixture of chemicals stored in the tank. The closest meteorological location available in EPA TANKS 4.09d that was used was Charleston. As stated above, due to the very low vapor pressure of diesel fuel, the emissions associated with the diesel fuel tanks are low. The results of the EPA TANKS 4.09d analysis resulted in the following diesel storage tank emissions:

Pollutant	**Hourly Emissions (lb/hr)**	**Annual Emissions (tons/year)**
Volatile Organic Compounds	7.34	0.75

Truck Loading
There will also be potential emissions associated with the truck loading of the 40 – 170,000 gallon diesel storage tanks. These emissions were accounted for and included as working losses in the aforementioned storage tank emissions.

Paved Haul Roads
There are paved haul road activities associated with this facility. The following table indicates the assumptions made in estimating the emissions:

Operating Condition	**Parameter**
Potential Operating Days	365
Estimated Roundtrip Distance per Vehicle	1.25 miles/vehicle
Fluid Delivery Trucks per Year	5,583
Miscellaneous Vehicles per Year	4,380

Using these operating conditions, the potential emissions associated with these haul road operations result in the following:

Pollutant	**Hourly Emissions (lb/hr)**	**Annual Emissions (tons/year)**
Particulate Matter	2.88	7.16
Particulate Matter-10	0.58	1.43
Particulate Matter-2.5	0.15	0.38

Fugitive Emission Leaks
The fugitive equipment leaks (VOC/HAP) associated with fugitive components (valves, pressure relief valves, connections, flanges, etc.) were estimated using EPA's Protocol for Equipment Leak Emission Estimates Table 2-1 (SOCMI average emission factors) and Table 2-5 (SOCMI screening ranges emission factors) and the component counts associated with the proposed facility. Based on this

analysis, the fugitive equipment leaks associated with this facility would be 0.31 tons per year of VOC and less than 0.01 tons per year of HAPs. The permit does require minimization of fugitive emissions and further requires any above-ground piping, valves, pumps, etc. that shows signs of excess wear that have a reasonable potential for fugitive emissions of regulated air pollutants to be repaired or replaced.

The following table represents the emissions associated with this 45CSR13 construction permit:

Emission Source	Annual Emissions (tons/year)					
	NO_x	**CO**	**VOC**	**SO_2**	**PM_{10}**	**Total HAPs**
Engines	194.30	205.62	116.59	9.93	186.53	0.86
Storage Tanks	-	-	0.75	-	-	-
Paved Haul Roads	-	-	-	-	1.43	-
Fugitive Leaks	-	-	0.31	-	-	0.01
Facility PTE	**194.30**	**205.62**	**117.66**	**9.93**	**187.96**	**0.87**

REGULATORY APPLICABILITY

State

45 CSR 2 - Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers ***(not applicable)***

This rule establishes emission limitations for smoke and particulate matter which are discharged from fuel burning units. 45 CSR 2 states that any fuel burning unit that has a heat input under ten (10) million B.T.U.'s per hour is exempt from sections 4 (weight emission standard), 5 (control of fugitive particulate matter), 6 (registration), 8 (testing, monitoring, recordkeeping, reporting) and 9 (startups, shutdowns, malfunctions). However, failure to attain acceptable air quality in parts of some urban areas may require the mandatory control of these sources at a later date. A fuel burning unit is defined in 45 CSR 2 section 2.10 as any furnace, boiler apparatus, device, mechanism, stack or structure used in the process of burning fuel or other combustible material for the primary purpose of producing heat or power by indirect heat transfer. The engines are not fuel burning units because this operation is not their primary purpose. Therefore, these units would not be subject to this rule.

45 CSR 4 - To Prevent and Control the Discharge of Air Pollutants into the Open Air Which Causes or Contributes to an Objectionable Odor or Odors

The purpose of this rule is to prevent and control the discharge of pollutants into the open air which causes or contributes to an objectionable odor or odors. This facility would generally be subject to this rule, however, this type of facility normally does not have issues with odors. However, the DAQ will, using the authority under this rule to respond to complaints involving objectionable odors if confirmed while the facility is operating, and may require mitigation at that time to reduce the odor potential of the source. An objectionable odor must be determined by the DAQ in the course of an inspection or investigation of an actual odor, and is possible to prove quantitatively, pursuant to this rule, that an objectionable odor will be present before a facility is in operation.

45 CSR 10 - To Prevent and Control Air Pollution from the Emissions of Sulfur Oxides ***(not applicable)***

This rule establishes emission limitations for sulfur dioxide which are discharged from fuel burning units. 45 CSR 10 states that any fuel burning unit that has a heat input under ten (10) million B.T.U.'s per hour is exempt from sections 3 (weight emission standard), 6 (registration), 7 (permits), and 8 (testing, monitoring, recordkeeping, reporting). However, failure to attain acceptable air quality in parts of some urban areas may require the mandatory control of these sources at a later date. A fuel burning unit is defined in 45 CSR 10 section 2.8 as any furnace, boiler apparatus, device, mechanism, stack or structure used in the process of burning fuel or other combustible material for the primary purpose of producing heat or power by indirect heat transfer. The engines are not fuel burning units because this operation is not their primary purpose. Therefore, these units would not be subject to this rule.

45 CSR 13 (Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, and Procedures for Evaluation)

Pursuant to §45-13-5.1, "[n]o person shall cause, suffer, allow or permit the construction, modification, relocation and operation of any stationary source to be commenced without . . . obtaining a permit to construct."

Based upon the potential emissions for the facility, TransGas is required to obtain a permit under 45CSR13 for this facility.

As required under §45-13-8.3 ("Notice Le vel A"), TransGas placed a Class I legal advertisement in the *Williamson Daily News* on April 9, 2025. Additionally, TransGas paid the appropriate application fee of $2,000 ($1,000 45 CSR 13 permit application fee, $1,000 NSPS fee) on April 2, 2025.

45 CSR 14 - Permits for Construction and Major Modification of Major Stationary Sources of Air Pollutants ***(not applicable)***
45 CSR 19 - Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution which Cause or Contribute to Nonattainment ***(not applicable)***

45CSR14 establishes and adopts a preconstruction permit program for the construction and major modification of major stationary sources in areas of attainment with the National Ambient Air Quality Standards (NAAQS). Mingo County is currently classified as in attainment/unclassifiable with the NAAQS and, therefore, a proposed new "major stationary source" in Mingo County would be subject to the provisions of 45CSR14. The proposed facility is not defined as a source listed under §45-14-2.43(a), therefore, pursuant to 2.4(b), would be defined as a "major stationary source" if any regulated pollutant has a PTE in excess of 250 TPY. The proposed facility, however, does not have a PTE of any regulated pollutant in excess of 250 TPY as shown in the table on the following page, therefore, not defined as a major stationary source and is not subject to the provisions of 45 CSR 14. 45 CSR 19 applies to sources that are located in areas that are classified as non-attainment with the NAAQS. Mingo County is an attainment/unclassified area, therefore, 45 CSR 19 would not apply.

Pollutant	PSD (45CSR14) Threshold (TPY)	NANSR (45CSR19) Threshold (TPY)	Facility PTE (TPY)	45CSR14 or 45CSR19 Review Required?
Carbon Monoxide	250	NA	205.62	No
Nitrogen Oxides	250	NA	194.30	No
Sulfur Dioxide	250	NA	9.93	No
Particulate Matter 2.5	250	NA	186.53	No
Ozone (VOC)	250	NA	117.35	No

45 CSR 16 - Standards of Performance for New Stationary Sources

This rule incorporates the federal Clean Air Act (CAA) standards of performance for new stationary sources (NSPS) set forth in 40 CFR Part 60 by reference. 45 CSR 16 applies to this source by reference of 40 CFR 60 Subpart IIII. These requirements are discussed under that rule below.

45 CSR 17 - To Prevent and Control Particulate Matter Air Pollution from Materials Handling, Preparation, Storage and Other Sources of Fugitive Particulate Matter

The purpose of this rule is to prevent and control particulate matter air pollution from materials handling, preparation, storage and other sources of fugitive particulate matter. TransGas will ensure appropriate precautions are taken to prevent the escape of fugitive particulate matter beyond the boundary lines of the property.

45 CSR 21 - Control of Air Pollution from the Emission of Volatile Organic Compounds ***(not applicable)***

This rule establishes reasonably available control technology to control emissions of volatile organic compounds from sources that manufacture, mix, store, use, or apply materials containing volatile organic compounds that are located in Cabell, Kanawha, Putnam, Wayne and Wood Counties. This facility is located in Mingo County, and therefore, not applicable to this rule.

45 CSR 27 - To Prevent and Control the Emissions of Toxic Air Pollutants ***(not applicable)***

The purpose of this rule is to prevent and control the discharge of toxic air pollutants requiring the application of best available technology (BAT) for chemical processing units. Section 2.4 defines a chemical processing unit as an assembly of reactors, tanks, distillation columns, heat exchangers, vaporizers, compressors, dryers, decanters, and/or other equipment used to treat, store, manufacture, or use toxic air pollutants. For the purpose of this rule, the term chemical processing unit includes surface coating equipment or similar equipment utilizing a toxic air pollutant as a solvent or for other purposes but does not include equipment used in the production and distribution of petroleum products providing that such equipment does not produce or contact materials containing more than 5% benzene by weight. Potential emissions of toxic air pollutants from this facility result from the combustion of natural gas or diesel in the engines. Regulation of emissions of toxic air pollutants from these unit types are not included in this rule, and therefore, not applicable.

45 CSR 30 - Requirements for Operating Permits

The facility is a major source and is subject to 45CSR30 based upon CO, NOx, PM, and VOC emissions each exceeding 100 tons per year. Due to this facility's PTE over 100 tons per year of a criteria pollutant, TransGas is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30. TransGas is required to pay the appropriate annual operating fees and submit an annual Certified Emissions Statement.

45 CSR 31 - Confidential Information

The purpose of this rule is to establish the requirements for claiming information submitted to the Director as confidential and the procedures for determinations of confidentiality in accordance with the provisions of W. Va. Code §22-5-10. The reason for the CBI submittal is that the application contains information that is fully protected under non-disclosure and confidentiality agreements between the applicant and equipment provider concerning development of the process and facility design. This was previously discussed in detail in the CONFIDENTIAL BUSINESS INFORMATION section.

45 CSR31B – Confidential Business Information and Emission Data

The purpose of this rule is to provide guidance and clarification concerning the term “types and amounts of pollutants discharged” defined under 45 CSR §31-2.4, the DAQ’s legislative rule (45 CSR 31) and thus what information may not be claimed confidential in accordance with 45 CSR §31-6. An in-depth discussion regarding this was previously discussed in detail in the CONFIDENTIAL BUSINESS INFORMATION section.

45 CSR 33 - Acid Rain Provisions and Permits ***(not applicable)***

This rule establishes and adopts general provisions and the operating permit program requirements for affected sources and affected units under the Acid Rain Program promulgated by the United States Environmental Protection Agency under Title IV of the Clean Air Act, as amended (CAA). The rule and associated reference methods, performance specifications and other test methods which are appended to these standards are adopted by reference. These units are exempt under the New Unit Exemption in §40-72.7. See explanation below in Federal for 40 CFR 72 (Permits Regulation).

45 CSR 34 - Emission Standards for Hazardous Air Pollutants

This rule incorporates the federal Clean Air Act (CAA) national emission standards for hazardous air pollutants (NESHAPs) set forth in 40 CFR Parts 61 and 63 by reference. 45 CSR 34 applies to this source by reference of 40 CFR 63 Subpart ZZZZ. These requirements are discussed under that rule below.

45 CSR 40 - Control of Ozone Season Nitrogen Oxide Emissions ***(not applicable)***

The purpose of this rule is to establish ozone season NOx emission limitation, monitoring, recordkeeping, reporting, excess emissions, and NOx budget demonstration requirements for large industrial boilers and combustion turbines that have a maximum design heat input greater than 250

MMBTU/hr, in accordance with 40 CFR §51.121. Ozone season is defined as May 1 through September 30 in the same calendar year. This facility does not have industrial boilers or combustion turbines, therefore, this rule does not apply.

Federal

40 CFR 51.166 - Prevention of Significant Deterioration of Air Quality ***(not applicable)***

Federal construction permitting programs regulate new and modified sources of attainment pollutants under Prevention of Significant Deterioration (PSD) and new and modified sources of non-attainment pollutants under Non-Attainment New Source Review (NANSR). The provisions of this section are captured in the West Virginia state rules discussed above known as 45 CSR 14 (PSD) and 45 CSR 19 (NANSR). Both of these rules are part of West Virginia's State Implementation Plan (SIP).

Mingo County is designated as attainment/unclassifiable for all criteria pollutants. PSD regulations apply when a new source is constructed in which emissions exceed major source thresholds, an existing minor source undergoes modification in which emission increases exceed PSD major source thresholds, or an existing major source undergoes a modification in which emission increases exceed PSD significant emission rates. PSD major source thresholds are 250 tons per year of a regulated pollutant, except for the 28 regulated facility categories. This facility is not one of listed 28 regulated facility categories. Therefore, the PSD major source threshold is 250 tons per year of a regulated pollutant. The emissions associated with this facility is less than the PSD major source threshold, therefore, this rule does not apply.

40 CFR 60 Subpart Kc - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After October 4, 2023 ***(not applicable)***

Subpart Kc applies to storage vessels of volatile organic liquids with capacities greater than or equal to 20,000 gallons for which construction commenced after October 4, 2023. § 60.110c(b)(8) exempts storage vessels that only store volatile organic liquids with a maximum true vapor pressure less than 0.25 psia (1.7 kPa absolute). Each storage vessel at the facility has a capacity of 170,000 gallons. However, the maximum vapor pressure of the storage vessels is 0.007 psia, which is less than 0.25 psia. Therefore, this rule does not apply.

40 CFR 60 Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

Subpart IIII applies to owners and operators of compression ignition internal combustion engines that commenced construction after July 11, 2005, and were manufactured after April 1, 2006, and not a fire pump engine.

The 28,194 HP engines (1S – 117S) are configured to be dual-fuel units and have the ability to operate on natural gas or diesel fuel, or can be operated on diesel fuel only, in backup mode. Under normal operation, the engines consume natural gas as their primary fuel with a pilot injection of ULSD. Under

natural gas operation, 2% of the energy comes from the pilot fuel, which can be increased to 100% in emergency operation.

The engines commenced construction after July 11, 2005, are non-emergency engines, were manufactured after April 1, 2006, utilizes diesel fuel, have displacements greater than 30 liters per cylinder, less than 130 rpm, not reducing PM by 60%, do not have diesel particulate filters, and were installed after January 1, 2016. Due to these parameters, the following are the regulatory requirements for each pollutant:

NOx

Emission Limit	3.4 g/KW-hr (2.5 g/HP-hr)
Standards	§60.4204(c)(3)
Monitoring/Testing	§60.4213(e)

PM

Emission Limit	0.15 g/kW-hr (0.11 g/HP-hr)
Standards	§60.4204(c)(4)
Monitoring/Testing	§60.4213(f)

Based upon the proposed hourly emission limits for the engines, the regulatory emission limits will be met.

The following requirements also apply to these pollutants:

Standards	§60.4206, §60.4207(d), §60.4211(d)
Monitoring/Testing	§60.4213(a), (b), (c); §60.4211(d)(1), (d)(3)
Recordkeeping	§60.4214(a)(2), §60.4211(d)(2)
Reporting	§60.4214(a)(1), §60.4211(d)(2)

40 CFR 60 Subpart TTTTa - Standards of Performance for Greenhouse Gas Emissions for Modified Coal-Fired Steam Electric Generating Units and New Construction and Reconstruction Stationary Combustion Turbine Electric Generating Units ***(not applicable)***

Subpart TTTTa applies to stationary combustion turbines that commence construction after May 23, 2023, that also serve a generator or generators capable of selling greater than 25 MW of electricity to a utility power distribution system. There are no combustion turbines at the proposed facility, therefore, Subpart TTTTa is not applicable.

40 CFR 63 Subpart EEEE - National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline) ***(not applicable)***

Subpart EEEE applies to organic liquids storage and distribution at major sources of HAPs. The facility is not a major source of HAPs because its PTE of total HAPs is less than 25 tons per year and its PTE of any single HAP is less than 10 tons per year. Therefore, Subpart EEEE does not apply.

40 CFR 63 Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE)

Subpart ZZZZ applies to stationary combustion RICE at area and major sources of HAPs. As stated in §63.6590(c), stationary RICE that are subject to regulations under 40 CFR 60 (IIII) must meet those requirements, and no further requirements apply for these units under this subpart.

40 CFR 64 - Compliance Assurance Monitoring ***(not applicable)***

Compliance Assurance Monitoring (CAM) applies to pollutant-specific emissions units at a major source under 40 CFR 70. The facility is not a major source under 40 CFR 70; therefore, CAM does not apply.

40 CFR 72 - Permits Regulation ***(not applicable)***

The purpose of this part is to establish certain general provisions and the operating permit program requirements for affected sources and affected units under the Acid Rain Program, pursuant to title IV of the Clean Air Act, 42 U.S.C. 7401, et seq., as amended by Public Law 101-549 (November 15, 1990).

The nameplate capacity of the generators attached to each unit is 25 MWe or less. The units do not burn coal or a coal-derived fuel, and burns fuel with sulfur of 0.05% or less by weight. Therefore, these units are exempt under the New Unit Exemption in Section 72.7 and are exempt from permit requirements, monitoring, and allowance holdings, except for the provisions of §72.7 itself, and §72.2 through 72.6 (definitions, measurements, abbreviations, and acronyms, federal authority, state authority, and applicability) and 72.10 through 72.13 (availability of information, computation of time, administrative appeals, and incorporation by reference).

40 CFR 97 Subpart DDDDD - Federal NOx Budget Trading Program, CAIR NOx and SO_2 Trading Programs, CSAPR NOx and SO_2 Trading Programs, and Texas SO_2 Trading Program ***(not applicable)***

This rule sets forth the general, designated representative, allowance, and monitoring provisions for the Cross-State Air Pollution Rule (CSAPR) SO_2 Group 2 Trading Program, under section 110 of the Clean Air Act and §52.39 of this chapter, as a means of mitigating interstate transport of fine particulates and sulfur dioxide.

This rule applies to fossil-fuel-fired combustion turbines serving at any time, on of after January 1, 2005, a generator with a nameplate capacity of more than 25 MWe producing electricity for sale. These units are RICEs and not combustion turbines. Additionally, the nameplate capacity of the generators attached to each unit is 25 Mwe. Therefore, this regulation does not apply.

ANALYSIS OF NON-CRITERIA REGULATED POLLUTANTS

This section provides information on those regulated pollutants that are not classified as "criteria pollutants". Criteria pollutants are defined as Carbon Monoxide (CO), Lead (Pb), Oxides of Nitrogen (NOx), Ozone, Particulate Matter (PM_{10} and $PM_{2.5}$), and Sulfur Dioxide (SO_2). These pollutants have National Ambient Air Quality Standards (NAAQS) set for each that are designed to protect public health and welfare. Other pollutants of concern, although designated as non-criteria *and without national air quality standards*, are regulated through various state and federal programs designed to limit their emissions and public exposure. These programs include federal source-specific HAP regulations promulgated under 40 CFR 61 and 40 CFR 63 (NESHAPS/MACT), and WV Legislative Rule 45 CSR 27 that regulates certain HAPs as Toxic Air Pollutants (TAPs). Any potential applicability to these programs were addressed in the REGULATORY APPLICABILITY section of this document.

The majority of non-criteria regulated pollutants fall under the definition of HAPs which, with some revision since, were 188 compounds identified under Section 112(b) of the Clean Air Act (CAA) as pollutants or groups of pollutants that EPA knows, or suspects *may* cause cancer or other serious human health effects. These adverse health effects may be associated with a wide range of ambient concentrations and exposure times and are influenced by source-specific characteristics such as emission rates and local meteorological conditions. Health impacts are also dependent on multiple factors that affect variability in humans such as genetics, age, health status (e.g., the presence of pre-existing disease) and lifestyle. As stated previously, *there are no federal or state ambient air quality standards for these specific chemicals*. It is also important to note that the USEPA does not divide the various HAPs into further classifications based on toxicity or if the compound is a suspected carcinogen. The HAP emissions associated with this application are found in the ESTIMATE OF EMISSIONS section of this document. For a complete discussion of the known health effects of each compound refer to the IRIS database located at *www.epa.gov/iris*.

The HAPs emitted from the proposed facility are created during the combustion of natural gas and diesel fuel. The HAP emission values were estimated using EPA AP-42: Compilation of Air Emissions Factors from Stationary Sources. AP-42 contains emission factors and process information for more than 200 air pollution source categories. AP-42 Chapter 3.2 contains HAP emission factors for reciprocating engines.

The table on the following page lists each HAP currently identified by TransGas as potentially being emitted based upon the information available in AP-42 Chapter 3.2, Tables 3.2-1, 3.2-3, and 3.2-4. Additionally, the Chemical Abstracts Service (CAS) registry number, the type of HAP, the PTE of the individual HAP, and any potentially applicable Most Available Control Technology (MACT) is provided.

Pollutant	CAS #	Type	PTE (TPY)	MACT[1]
Acetaldehyde	75-07-0	VOC	0.013	None
Acrolein	107-02-8	VOC	0.0045	None
Benzene	71-43-2	VOC	0.448	None
Formaldehyde	50-00-0	VOC	0.046	None
Naphthalene	91-20-3	VOC	0.075	None
Toluene	108-88-3	VOC	0.163	None
Xylenes	1330-20-7	VOC	0.111	None

[1] Does a MACT apply to this specific HAP for any emission unit at the facility? See REGULATORY APPLICABILITY section for discussion.

AIR QUALITY IMPACT ANALYSIS

Modeling was not required of this source because the facility is not subject to 45CSR14 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollutants) as discussed in the Regulatory Discussion Section.

SOURCE AGGREGATION

"Building, structure, facility, or installation" is defined as all the pollutant emitting activities which belong to the same industrial grouping, are located on one or more contiguous and adjacent properties, and are under the control of the same person.

TransGas has an option on the site with the current owner, therefore, they do have control of the proposed site. There are no other emission units belonging to the same industrial grouping, under common control, and located on contiguous or adjacent properties with the facility. Therefore, the emissions from the Adams Fork Harless Data Center facility should not be aggregated in determining Title V or PSD status.

MONITORING, RECORDKEEPING, REPORTING, AND TESTING (MRRT) OF OPERATIONS

TransGas will be required to perform the following MRRT:

- **Operational Limitations**
  - Operating limits will be established on the engines. TransGas will be required to monitor the operating hours, operational mode, and the throughput of each type of fuel will be continuously monitored and recorded for each engine. Required to keep records of the total amount of hours each engine uses natural gas as a fuel and the total amount of hours each engine uses diesel as a fuel. The 12-month rolling sum of emissions will be calculated monthly.
- **40 CFR 60 Subpart IIII MRRT**
  - Monitor and utilize diesel fuel that meets a maximum per-gallon sulfur content of 1,000 ppm. [§60.4207(d)]
  - Conduct an initial performance test to demonstrate initial compliance with the emission standards as specified in §60.4213. [§60.4211(d)(1)]
  - Conduct an annual performance test to demonstrate initial compliance with the emission standards as specified in §60.4213. [§60.4211(d)(3)]
  - Keep records of the information in paragraphs (a)(2)(i) through (iv) of this section.
    - (i) All notifications submitted to comply with this subpart and all documentation supporting any notification.
    - (ii) Maintenance conducted on the engine.
    - (iii) If the stationary CI internal combustion is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards.
    - (iv) If the stationary CI internal combustion is not a certified engine, documentation that the engine meets the emission standards. [§60.4214(a)(2)]
  - Establish operating parameters to be monitored continuously to ensure the stationary internal combustion engine continues to meet the emission standards. The owner or operator must petition the Administrator for approval of operating parameters to be monitored continuously. The petition must include the information described in paragraphs (d)(2)(i) through (v) of this section.
    - (i) Identification of the specific parameters you propose to monitor continuously;
    - (ii) A discussion of the relationship between these parameters and NOX and PM emissions, identifying how the emissions of these pollutants change with changes in these parameters, and how limitations on these parameters will serve to limit NOX and PM emissions;
    - (iii) A discussion of how you will establish the upper and/or lower values for these parameters which will establish the limits on these parameters in the operating limitations;
    - (iv) A discussion identifying the methods and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments; and
    - (v) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters. [§60.4211(d)(2)]

    - Submit an initial notification as required in § 60.7(a)(1). The notification must include the information in paragraphs (a)(1)(i) through (v) of this section. Beginning on February 26, 2025, submit the notification electronically according to paragraph (g) of this section.
        - (i) Name and address of the owner or operator;
        - (ii) The address of the affected source;
        - (iii) Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;
        - (iv) Emission control equipment; and
        - (v) Fuel used. [§60.4214(a)(1)]
- **Tank Throughput and Loading**
    - TransGas will be required to monitor the tank throughput and loading operations for each storage tank. The 12-month rolling sum of throughputs/emissions will be calculated monthly.
- **45 CSR 17 Fugitive Sources of Particulate Matter**
    - Sources of fugitive particulate matter at the facility include diesel truck and employee traffic on paved plant roads. Conduct a visual inspection of the paved roads once each operating day to ensure no fugitive emissions are generated. When needed, roads will be swept and/or watered to minimize fugitive dust. Records will be kept of the inspections and any corrective actions.
- Maintain records of testing conducted in accordance with the permit. Said records shall be maintained on-site or in a readily accessible off-site location.
- Maintain the corresponding records specified by the on-going monitoring requirements of and testing requirements of the permit.
- Maintain a record of all PTE HAP calculations for the entire facility.

The records shall be maintained on site or in a readily available off-site location maintained by TransGas for a period of five (5) years.

STATUTORY AUTHORITY OF THE DAQ

The statutory authority of the DAQ is given under the Air Pollution Control Act (APCA) – West Virginia Code §22-5-1, *et. seq.* – which states, under §22-5-1 ("Declaration of policy and purpose"), that:

> It is hereby declared that public policy of this state and the purpose of this article is to achieve and maintain such levels of air quality ***as will*** (underlining and emphasis added) protect human health and safety, and to the greatest degree practicable, prevent injury to plant and animal life and property, foster the comfort and convenience of the people, promote the economic and social development of this state and facilitate the enjoyment of the natural attractions of this state.

Therefore, while the code states that the intent of the rule includes the criteria outlined in the latter part of the above sentence, it is clear by the underlined and bolded section of the above sentence that the scope of the delegated authority does not extend beyond the *impact of air quality* on these criteria. Based on the language under §22-5-1, *et. seq.*, the DAQ, in making determinations on issuance or denial of permits under WV Legislative Rule 45 CSR 13 (45 CSR 13), does not take into consideration

substantive non-air quality issues such as job creation, economic viability of proposed project, strategic energy issues, non-air quality environmental impacts, nuisance issues, etc.

The basis for issuance or denial of an air quality permit is given under 45 CSR 13. Pursuant to §45-13-5.7, the DAQ shall issue a permit unless:

> a determination is made that the proposed construction, modification, registration or relocation will violate applicable emission standards, will interfere with attainment or maintenance of an applicable ambient air quality standard, cause or contribute to a violation of an applicable air quality increment, or be inconsistent with the intent and purpose of this rule or W. Va. Code § 22-5-1, et seq., in which case the Secretary shall issue an order denying such construction, modification, relocation and operation. The Secretary shall, to the extent possible, give priority to the issuance of any such permit so as to avoid undue delay and hardship.

It is clear under 45 CSR 13 that denial of a permit must be based on one of the above explicitly stated criteria or, as noted, is inconsistent with 45 CSR 13 or §22-5-1, *et. seq*. As is stated above, it is the DAQ's position that the intent of both the APCA and 45 CSR 13 is to circumscribe the authority of the DAQ to air quality issues as outlined in the APCA and in West Virginia's State Implementation Plan (SIP).

The air quality issues evaluated relating to TransGas' proposed construction are outlined in this document. All applicable and potentially applicable rules were evaluated in the REGULATORY DISCUSSION section. The items covered under that section represent the extent of the substantive air quality issues over which the DAQ has authority to evaluate under 45 CSR 13 and the APCA as relating to this permit application.

RECOMMENDATION TO DIRECTOR

The information provided in permit application R13-3714 indicates that compliance with all applicable state and federal air quality regulations will be achieved. Therefore, I recommend to the Director that the DAQ go to public notice with a preliminary determination to issue Permit Number R13-3714 to TransGas for the proposed construction of the Adams Fork Harless Data Center Energy Campus located in Holden, Mingo County, WV.

Jerry Williams

Digitally signed by: Jerry Williams
DN: CN = Jerry Williams email = jerry.williams@wv.gov C = US
Date: 2025.06.27 09:57:22 -04'00'

Jerry Williams, P.E.
Engineer