

Fact Sheet



For Final Renewal Permitting Action Under 45CSR30 and Title V of the Clean Air Act

Permit Number: **R30-03500003-2022**
Application Received: **November 12, 2021**
Plant Identification Number: **03500003**
Permittee: **Columbia Gas Transmission, LLC**
Facility Name: **Ripley Compressor Station**
Mailing Address: **1700 MacCorkle Avenue, SE
Charleston, WV 25314**

Physical Location:	Ripley, Jackson County, West Virginia
UTM Coordinates:	440.1 km Easting • 4303.4 km Northing • Zone 17
Directions:	Traveling I-77N from Charleston, exit at Ripley onto US Rte. 33 and proceed to the town of Ripley and the intersection with Secondary Rte. 21 (formerly US & State Rte. 21). Turn left onto Rte. 21 and continue approximately 5.5 miles to the station which is on the left.

Facility Description

The Ripley Station is a natural gas transmission facility covered by Standard Industrial Classification (SIC) 4922. The station has the potential to operate seven (7) days per week, twenty-four (24) hours per day. The station consists of two (2) 2,250-hp natural gas fired reciprocating engines, one (1) natural gas dehydration unit, one (1) enclosed ground flare, one (1) natural gas fired reboiler, one (1) natural gas powered generator engine, one (1) 31 HP air compressor, one (1) heating system boiler, one (1) indirect heater, two (2) natural gas fired process heaters, one (1) pipeline liquids loading rack, one (1) liquids knockout system, one (1) wastewater evaporator and ten (10) storage tanks of various sizes.

A significant modification (SM01) covers changes included in recently issued Permit R13-3546 (issued on June 21, 2022). The changes from this significant modification have been incorporated in this renewal and in the facility description above and are as follows:

Removal of two (2) generator engines. Installation and operation of two (2) heaters, one (1) reboiler, one (1) natural gas dehydrator, one (1) combustor, one (1) generator engine, two (2) pipeline liquids tanks, and one (1) TEG storage tank.

Emissions Summary

Plantwide Emissions Summary [Tons per Year]		
Regulated Pollutants	Potential Emissions	2020 Actual Emissions
Carbon Monoxide (CO)	66.70	10.66
Nitrogen Oxides (NO _x)	177.24	38.65
Particulate Matter (PM _{2.5})	6.82	2.40
Particulate Matter (PM ₁₀)	6.82	2.40
Total Particulate Matter (TSP)	6.82	2.40
Sulfur Dioxide (SO ₂)	0.24	0.03
Volatile Organic Compounds (VOC)	28.15	6.79

PM₁₀ is a component of TSP.

Hazardous Air Pollutants	Potential Emissions	2020 Actual Emissions
Benzene	0.33	Not reported
Toluene	0.16	Not reported
Ethylbenzene	0.02	Not reported
Xylene	0.05	Not reported
n-Hexane	0.11	Not reported
Formaldehyde	9.17	2.25
2,2,4 - Trimethylpentane	0.14	Not reported
Methanol	0.45	Not reported
Other HAPs	3.56	Not Reported
Total HAPs	13.99	Not reported

Some of the above HAPs may be counted as PM or VOCs.

Title V Program Applicability Basis

This facility has the potential to emit 177.24 tons/yr of NO_x. Due to this facility's potential to emit over 100 tons per year of criteria pollutant, Columbia Gas Transmission, LLC is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

This facility has been found to be subject to the following applicable rules:

Federal and State:	45CSR2	Indirect Heat Exchangers
	45CSR6	Open burning prohibited.
	45CSR10	To Prevent and Control Air Pollution from the Emissions of Sulfur Oxide
	45CSR11	Standby plans for emergency episodes.
	45CSR13	NSR Permits
	45CSR16	Standards of Performance for New Stationary Sources Pursuant to 40 CFR Part 60
	WV Code § 22-5-4 (a) (14)	The Secretary can request any pertinent information such as annual emission inventory reporting.
	45CSR30	Operating permit requirement.
	45CSR34	Emission Standards for Hazardous Air Pollutants for Source Categories Pursuant to 40 CFR, Part 63
	40 C.F.R. Part 61	Asbestos inspection and removal
	40 C.F.R. 60 Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units
	40 C.F.R. 60 Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (SI ICE)
	40 C.F.R. 63, Subpart ZZZZ	NESHAPs MACT for Stationary RICEs
	40 C.F.R. Part 82, Subpart F	Ozone depleting substances
State Only:	45CSR4	No objectionable odors.
	45CSR17	Particulate Fugitive

Each State and Federally-enforceable condition of the Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR34 and 45CSR30.

Active Permits/Consent Orders

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit (<i>if any</i>)
R13-3546	June 21, 2022	

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table," which may be downloaded from DAQ's website.

Determinations and Justifications

❖ The Title V renewal permit includes the following changes from R13-3546:

- R13-3546 results in the following emission changes:

Pollutant	Change in Potential Emissions (+ or -), TPY
NO _x	+12.90
CO	+12.15
VOC	+2.15
PM	+0.40
SO ₂	+0.11
Formaldehyde	+0.03
Ethylbenzene	+0.01
Hexane	+0.29
Xylene	+0.07
Toluene	+0.07
Benzene	+0.06
2,2,4- Trimethylpentane	+0.01
methanol	+0.00
HAPs	+0.53

- The following equipment has been added to the emission units table:
 - One (1) 225 MMSCFD natural gas dehydration unit (Emission Unit ID-DEHY1)
 - One (1) 4.0 MMBTU/hr enclosed ground flare (Emission Unit ID-FLLP-1)
 - Two (2) 15.25 MMBTU/hr natural gas fired process heaters (Emission Unit IDs- HTR3 and HTR4)
 - One (1) 4.0 MMBTU/hr natural gas fired reboiler (Emission Unit ID-RB1)
 - One (1) 440 hp Waukesha F18GL natural gas powered generator engine (Emission Unit ID-062G3)
 - Various storage tanks – existing tanks A23, A24, A25, A26, A12, A13, A14 and new tanks A27, A28, and A29
 - HTR2 and LR-1 were also added to the emission units table. This equipment is existing but was not included in the emission units table before.
- The following equipment has been removed from the emission units table:
 - Two (2) 306 hp Ingersol Rand PVG-6 generator engines (Emission Unit IDs- 062G1 and 062G2).
 - Per company's email on June 29, 2022, HTR1 was removed from Ripley Compressor Station in July 2018. Therefore, HTR1 was removed from the Emission Units Table.
- Source-Specific Requirements (from R13-3546) were included as conditions 3.1.12, 3.1.13, 3.1.14 and 3.1.15 in this permit.

- Source-Specific Requirements for storage Tanks (A12, A13, A14, A26, A27, A28) were added in section 9 of this permit.
- Source-Specific Requirements for Reboiler (RB1) and Heaters (HTR3, HTR4) were added in section 8 of this permit.
- Source-Specific Hazardous Air Pollutant Requirements for Natural Gas Dehydration Unit (DEHY1) were added in section 7 of this permit.
- Source-Specific Requirements (from R13-3546) for Emission Unit ID-062G3 were included as conditions 6.1.8, 6.1.9, 6.1.10, 6.1.11, 6.3.2, 6.4.2 and 6.5.2 in this permit.

❖ **40 C.F.R. 60 Subpart Dc Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units**

The 15.25 MMBTU/hr OGI TERI Line Heaters (HTR3, HTR4) are subject to 40 C.F.R. 60 Subpart Dc. Subpart Dc does not, however, have any emission standards for gas fired units. The heaters will comply with the SO₂ standards by maintaining records of fuel usage and the sulfur content of the natural gas. The heaters are subject to the recordkeeping and reporting requirements given under §60.48c.

❖ **40CFR60 Subpart JJJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (SI ICE))**

The 440 HP Waukesha F18GL 4SLB natural gas fired backup generator (Emission Unit ID-062G3) was constructed after January 1, 2009. The engine is subject to the following emission limits: NO_x – 2.0 g/hp-hr (1.94 lb/hr); CO – 4.0 g/hp-hr (3.88 lb/hr); and VOC – 1.0 g/hp-hr (0.97 lb/hr). Based on the manufacturer's specifications for these engines, the emission standards will be met. No additional controls are being utilized.

The engine is not certified by the manufacturer to meet the emission standards listed in 40CFR60 Subpart JJJJ. Therefore, Columbia will be required to conduct an initial performance test.

40 C.F.R. 60 Subpart JJJJ Requirements for Emission Unit ID-062G3 were included as conditions 6.1.1 through 6.1.7, 6.4.1, 6.5.1 and 6.5.3 in this permit.

❖ **40CFR63 Subpart ZZZZ (National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines)**

The 440 HP Waukesha F18GL 4SLB natural gas fired backup generator (Emission Unit ID-062G3) will comply with 40CFR63 Subpart ZZZZ by complying with the NSPS 40CFR60 Subpart JJJJ requirements specified above.

❖ **45CSR2 (Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers)**

The 4.0 MMBTU/hr gas-fired boiler (RB1) is an indirect heat exchanger below 10 MMBTU/hr. Therefore, this unit is exempt from sections 4, 5, 6, 8 and 9 of 45CSR2 per 45CSR§2-11.1.

The 15.25 MMBTU/hr OGI TERI Line Heaters (HTR3, HTR4) are Type 'b' units and are subject to particulate matter weight emission standards under 45CSR2. For Type 'b' units, the particulate matter hourly emission rate is limited to the product of 0.09 and the total design heat inputs for such units in MMBTU/hr. The total design heat input of these units is 30.50 MMBTU/hr. Therefore, the hourly particulate matter emission limit is 2.75 lb/hr. The potential particulate matter emission rate of these units is 0.06 lb/hr, therefore, these units comply with this requirement. The streamlining language was added in condition 8.1.3 of this permit.

❖ **45CSR6 (To Prevent and Control Particulate Air Pollution from Combustion of Refuse)**

The 4.0 MMBTU/hr Combustor (FLLP-1) meets the definition of an "incinerator" under 45CSR6 and is, therefore, subject to the requirements therein. Applicable 45CSR6 requirements were added as conditions 7.1.5, 7.1.6 and 7.1.7. The 45CSR§6-4.1 hourly particulate matter emission limit of 0.45 lb/hr is much higher than the unit's potential hourly particulate matter emission rate of 0.03 lb/hr.

❖ **45CSR10 (To Prevent and Control Air Pollution from the Emissions of Sulfur Oxide)**

The 4.0 MMBTU/hr gas-fired boiler (RB1) is an indirect heat exchanger that combusts natural gas but is exempt from section 3 and sections 6 through 8 of this rule per 45CSR§10-10.1 since the heat input capacity is less than 10 MMBtu/hr.

The 15.25 MMBTU/hr OGI TERI Line Heaters (HTR3, HTR4) are subject to 45CSR10. The allowable sulfur dioxide (SO₂) emissions from the gas-fired heaters, each identified as a Type 'b' fuel burning unit per 45CSR10, are the product of 3.1 and the total design heat inputs for such units in MMBTU/hr. The total design heat input of the heaters is 30.50 MMBtu/hr. The SO₂ limit is 93.93 pounds per hour. The aggregate hourly SO₂ PTE of these heaters is estimated to be 0.02 lb/hr, therefore, these units comply with this requirement. The streamlining language was added in condition 8.1.3 of this permit.

Non-Applicability Determinations

The following requirements have been determined not to be applicable to the subject facility due to the following:

45CSR4	<i>To Prevent and Control the Discharge of Air Pollutants into the Open Air Which Cause or Contributes to an Objectionable Odor or Odors:</i> This State Rule shall not apply to the following source of objectionable odor until such time as feasible control methods are developed: Internal combustion engines.
45CSR19	<i>Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution which Cause or Contribute to Nonattainment:</i> The Ripley Compressor Station is located in Jackson County, which is an unclassified county for all criteria pollutants, therefore the facility is not subject to 45CSR19.
45CSR27	<i>To Prevent and Control the Emissions of Toxic Air Pollutants:</i> Natural gas is included as a petroleum product and contains less than 5% benzene by weight. 45CSR§27-2.4 exempts 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."
40CFR63 Subpart DDDDD	<i>National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters.</i> This subpart establishes national emission limitations and work practice standards for hazardous air pollutants (HAP) emitted from industrial, commercial, and institutional boilers and process heaters located at major sources of HAP. The Ripley Compressor Station is not a major source of HAPs, therefore, this subpart does not apply.
40 C.F.R. Part 60 Subpart OOOO	<i>Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution for which Construction, Modification, or Reconstruction Commenced after August 23, 2011, and on or before September 18, 2015.</i> As a transmission compression facility, this Rule only potentially applies to storage vessels. Although there have been storage vessels (Emission Point IDs: A24 to A29) constructed, modified, or reconstructed after August 23, 2011, the VOC Potential to Emit is less than 6 tons per year. They are not subject to this subpart per 40 C.F.R. §60.5365(e).
40 C.F.R. Part 60 Subpart OOOOa	<i>Standards of Performance for Crude Oil and Natural Facilities for which Construction, Modification, or Reconstruction Commenced after September 18, 2015:</i> The GHG and VOC requirements defined by this NSPS are not applicable to this site because all potentially affected sources commenced construction, modification or reconstruction prior to September 18, 2015 in accordance with 40CFR§60.5365a except tanks A24 through A29 which were constructed after September 18, 2015. The storage vessels (Emission Point IDs: A24 to A29) at the Ripley Compressor Station emit less than 6 tpy of VOC. Therefore, they are

	not required to further reduce VOC emissions by 95%. They are not subject to this subpart per 40 C.F.R. §60.5365a(e).
40 C.F.R. Part 60 Subpart Dc	<i>Standards of Performance for Steam Generating Units:</i> The indirect heater(HTR2), heating system boiler (BLR2) and Reboiler(RB1) are less than 10 MMBtu/hr design heat capacity, which makes them below the applicability criteria stated in 40CFR§60.40c(a).
40 C.F.R. Part 60 Subpart K and Ka	<i>Standards of Performance for Petroleum Liquid Storage Vessels:</i> All tanks at the station are below the applicability criteria of 40,000 gallons in capacity as stated in 40CFR§§60.110(a) and 60.110a(a).
40 C.F.R. Part 60 Subpart Kb	<i>Standards of Performance for Volatile Organic Liquid Storage Vessels:</i> All tanks at the station are below the applicability criteria of 19,813 gallons in capacity as stated in 40CFR§60.110b(a).
40 C.F.R. Part 60 Subpart KKK	<i>Standards of Performance for Equipment Leaks of VOC From Onshore Natural Gas Processing Plant(s):</i> The station is not engaged in the extraction or fractionation of natural gas liquids from field gas, the fractionation of mixed natural gas liquids to natural gas products, or both. As a result, the station has no affected sources operating within this source category.
40 C.F.R. Part 63 Subpart HHH	<i>National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities:</i> The facility has a natural gas dehydration unit. However, since the Ripley Compressor Station is a minor source of HAPs, the unit (DEHY1) does not qualify as an affected unit.
40 C.F.R. Part 64	<i>Compliance Assurance Monitoring (CAM):</i> Although dehydration unit (DEHY1) meets two applicability criteria for a PSEU in 40CFR§64.2(a): (1) it has emission limits for HAPs and VOC (condition 7.1.2) and (2) it uses a control device (FLLP-1) to achieve compliance with these limits, it does not meet the third criteria. With the emission limits of VOC (0.97 TPY), Benzene (0.06 TPY) and total HAPs (0.24 TPY) in condition 7.1.2 and DEHY1 control efficiency of 98%, pre-control device emissions of VOC (48.5 TPY), Benzene (3 TPY) and HAPs (12 TPY) would be below the major source applicability criteria of 100 TPY for criteria pollutants, 10 TPY for a single HAP, and 25 TPY of aggregated HAPs. Therefore, Compliance Assurance Monitoring (CAM) is not applicable.

Request for Variances or Alternatives

None

Insignificant Activities

Insignificant emission unit(s) and activities are identified in the Title V application.

Comment Period

Beginning Date: August 16, 2022
Ending Date: September 15, 2022

Point of Contact

All written comments should be addressed to the following individual and office:

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West Virginia Department of Environmental Protection
Division of Air Quality
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Charleston, WV 25304
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Procedure for Requesting Public Hearing

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

Response to Comments (Statement of Basis)

None