

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Application Review

Issue Date:

Region: Winston-Salem Regional Office
County: Rockingham
NC Facility ID: 7900131
Inspector's Name: Dylan Wright
Date of Last Inspection: 07/27/2021
Compliance Code: 3 / Compliance - inspection

<p style="text-align: center;">Facility Data</p> <p>Applicant (Facility's Name): Transcontinental Gas Pipe Line Company, LLC - Station 160</p> <p>Facility Address: Transcontinental Gas Pipe Line Company, LLC - Station 160 4300 NC 65 Reidsville, NC 27320</p> <p>SIC: 4922 / Natural Gas Transmission NAICS: 48621 / Pipeline Transportation of Natural Gas</p> <p>Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V</p>	<p style="text-align: center;">Permit Applicability (this application only)</p> <p>SIP: 15A NCAC 02D .0407, 02D .0503, 02D .0516, 02D .0521, 02D .0524, 02D .1111, 02D .1409, 02D .1806, 15A NCAC 02Q .0317 for 02D .0530 NSPS: 40 CFR 60 Subpart GG NESHAP: DDDDD, YYYY, ZZZZ PSD: N/A PSD Avoidance: VOCs NC Toxics: N/A 112(r): N/A Other: N/A</p>
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Contact Data			Application Data
Facility Contact	Authorized Contact	Technical Contact	<p>Application Number: 7900131.21A Date Received: 05/03/2021 Application Type: Renewal Application Schedule: TV-Renewal</p> <p style="text-align: center;">Existing Permit Data</p> <p>Existing Permit Number: 09113/T13 Existing Permit Issue Date: 03/25/2019 Existing Permit Expiration Date: 12/31/2021</p>
Joseph Page Sr. Operations Manager (336) 361-3003 4300 NC Highway 65 Reidsville, NC 27320	Glen Jasek VP Operations, Eastern Interstates (713) 215-2134 2800 Post Oak Blvd, Suite 900 Houston, TX 77056+6147	Michael Callegari Senior Environmental Specialist (832) 794-0612 2800 Post Oak Boulevard, Suite 900 Houston, TX 77056+0612	

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2020	0.2500	1396.78	98.17	414.97	20.40	60.69	43.75 [Formaldehyde]
2019	0.2200	1340.51	73.24	367.30	16.09	44.64	32.18 [Formaldehyde]
2018	0.0700	337.51	32.30	111.94	5.74	17.26	12.45 [Formaldehyde]
2017	0.0300	246.06	27.73	85.82	4.63	14.30	10.31 [Formaldehyde]
2016	0.0300	220.17	25.16	81.22	4.53	13.48	9.72 [Formaldehyde]

<p>Review Engineer: Alice Wessner</p> <p>Review Engineer's Signature: <i>Alice M. Wessner</i> Date:</p>	<p align="center">Comments / Recommendations:</p> <p>Issue 09113/T14</p> <p>Permit Issue Date:</p> <p>Permit Expiration Date:</p>
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1. Purpose of Application

Transcontinental Gas Pipe Line Company, LLC – Station 160 (Transco) currently holds Title V Permit No. 09113T13 with an expiration date of December 31, 2021 for a natural gas pipeline compressor station located in Reidsville, Rockingham County, North Carolina. This permit application is for a permit renewal without modification. The renewal application was received on May 3, 2021, or at least six months prior to the expiration date. Therefore, the existing permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewal permit has been issued or denied.

2. Facility Description

According to the most recent inspection/Stack Test Observation report dated August 4, 2021, by Dylan Wright of the Winston Salem Regional Office (WSRO), this facility is a natural gas pipeline compressor station. This pipeline starts in Texas and runs all the way to New York. This facility moves the gas through the pipeline with a group of reciprocating internal combustion engines and a turbine that drives compressors. In the past, the facility has been used to move gas from the southern states to the northern states. The introduction of natural gas from the Marcellus Shale deposit drastically shifted the flow of gas and reduced this facility's operating times. Previously, the facility has only been capable of moving gas from south to north. The facility disconnected from the pipeline in April 2018 and purged the natural gas from the system in order to construct a new system that would allow the facility the option to move gas from north to south or south to north. This would allow the facility flexibility for market changes. This project was completed in September 2018.

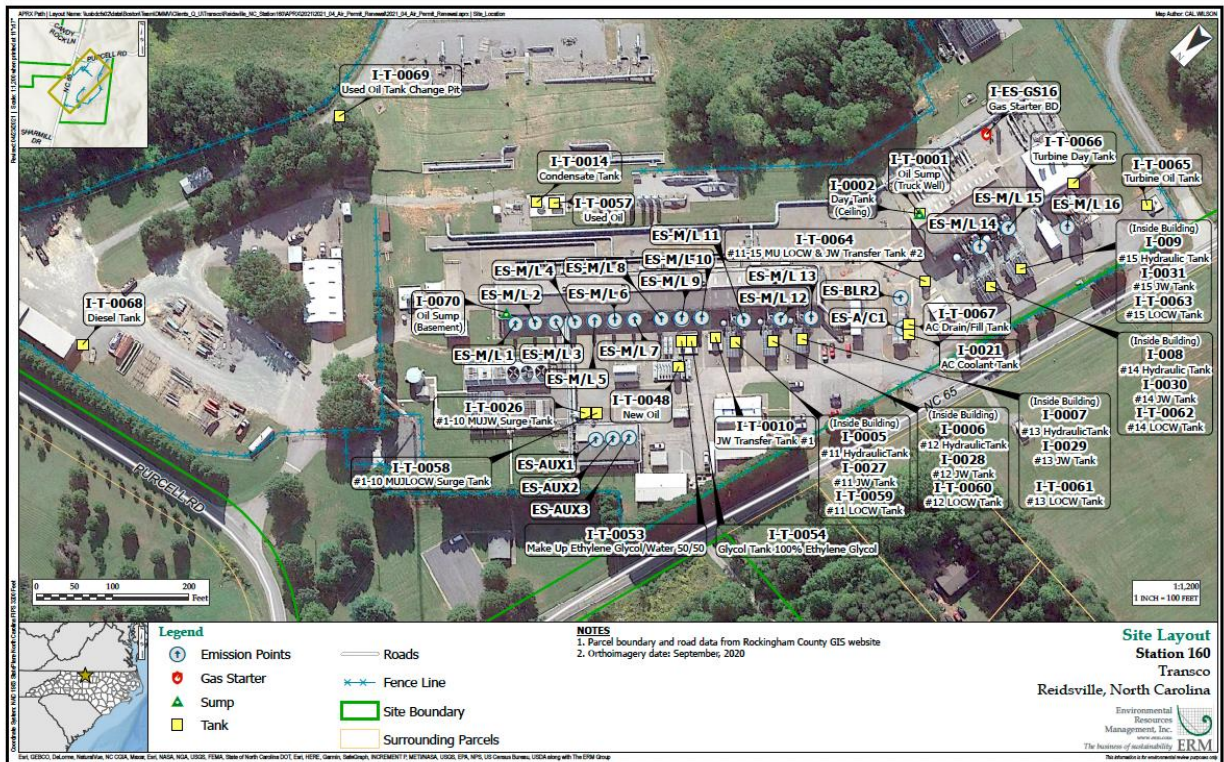
The process is described as follows: Gas comes in on three lines and goes through eight scrubbers to remove condensate prior to compression. The gas is then compressed using one of the reciprocating engines or the turbine. Engines (ID Nos. ES-M/L1 through ES-M/L13) are located side by side in a large building adjacent to the pipeline. This building is called the "A" Building. Engines 1-8 have not been retrofitted with high pressure fuel injection systems. The remaining non-emergency engines were retrofitted with high pressure fuel injection systems to comply with 2D .1409.

A separate building houses two larger engines (ID Nos. ES-M/L14 and 15). This building is called the "B" Building. A 122 million Btu/hour turbine (ID No. ES-M/L16) can also be used to compress gas. The turbine is typically used for "baseload" demand. Before the plant was modified to pump gas south, there was not enough demand to run the turbine. The turbine has been idle for several years but has recently been fixed to prepare it for operation.

These engines are relatively old natural gas, two-stroke, lean-fire engines that operate at a low RPM range compared to comparable newer engines. If the facility needs to blowdown gas from its internal piping this is achieved through blowdown vents, one for each of the reciprocating engines and one for the turbine. The blowdown operations are emission source ID No. ES-BDO.

A natural gas-fired boiler (ID No. ES-BLR2) is used for hot water for comfort heating. Three emergency generators provide electrical power if needed (ID Nos. ES-AUX1 through 3). An additional engine (ID No. ES-A/C1) drives an air compressor that provides compressed air for miscellaneous equipment on this site.

The following layout is a diagram of the Transco Compressor Station 160 site (from Appendix A of renewal Application No. 7900131.21A):



3. History/Background/Application Chronology

History/Background

- January 26, 2017 TV permit renewal and the Part II 15A NCAC 02Q .0501(b)(2) modification were issued as Air Permit No. 09113T12, with an expiration date of December 31, 2021.
- March 25, 2019 A minor modification (09113T13) was issued to incorporate State-enforceable only permit conditions that reference the approved plan to establish a two-site monitoring network and on-site met data to measure actual NO₂ emissions in order to demonstrate the Station's contribution to compliance with the 1-hour NO₂ NAAQS.

Application Chronology

- May 3, 2021 Received permit application 7900131.21A for renewal without modification.
- May 4, 2021 Sent acknowledgment letter indicating that the application for permit renewal was complete.
- July 6, 2022 Requested via email more detailed information including emissions for the 8,800 gallon wastewater tank that may be added to the insignificant activities list from Bill Scarpinato, Environmental Specialist with Transco.
- July 8, 2022 Mr. Scarpinato of Transco responded via email with emissions and the history of the wastewater tank. As a result of his email, it will be added to the insignificant activities list. Email was also forwarded to Dylan Wright of the Winston Salem Regional Office for their records.
- July 8, 2022 Draft permit and review forwarded to Permitting Supervisor for comments.

July 15, 2022 Received comments on draft and review from Permitting Supervisor. Edits and corrections made.

July 15, 2022 Draft permit and review forwarded to Dylan Wright, of the Winston-Salem Regional Office (WSRO) and Samir Parekh, P.E., of the Division of Air Quality Compliance for review and comments.

July 25, 2022 Received comments via email on draft and review from Samir Parekh, P.E., DAQ Compliance. Edits and corrections made OR no edits or comments noted in email.

July 27, 2022 Received comments via email on draft and review from Dylan Wright of the WSRO. Edits and corrections including more explanation of 40 CFR Part 63 Subpart YYYYY for the natural gas-fired dry low NO_x combustion turbine (ID No. ES-M/L16) in the review. An update of the monitoring station maps, and an update of the ozone season dates for the permit and the review.

July 28, 2022 Draft permit forwarded to Glen Jasek, VP Operations, Eastern Interstates, Transco for review and comments.

August 11, 2022 Received comments via email from Bill Scarpinato, Environmental Specialist with Transco. One comment included changing ozone season to reflect NCDAQ's expansion of the season from March to October; however, changes were not made in the permit. Please see Section 5, 15A NCAC 02D .1409, Seasonal Emission Rate for Large Combustion Sources for further explanation as to why the changes in the permit were not made. The Permittee also wanted a change to be made to the insignificant activities list for the Unit 16 gas starter to an electric starter.

August XX, 2022 Draft permit and permit review forwarded to public notice.

August XX, 2022 Public comment period ends. **No** comments received.

August XX, 2022 EPA comment period ends. **No** comments received.

August XX, 2022 Permit issued.

4. Permit Modifications/Changes and TVEE Discussion

The following changes were made to Air Permit No. 09113T13:*

Page No.	New Permit Section	Description of Changes
Cover Letter	N/A	Modified letter to reflect current name of facility, current dates, permit number, new Section Chief name, issuance and effective dates.
N/A	Cover Letter	Added the <u>NOTICE REGARDING THE RIGHT TO CONTEST A DIVISION OF AIR QUALITY PERMIT DECISION</u>
Attachment 2 Summary of Changes	Cover Letter	Revised the table to reflect the changes to the permit added in Permit revision T14

Page No.	New Permit Section	Description of Changes
Attachment 1 Insignificant Activities	3	Moved to Section 3 of the permit Updated footnotes to table Changes to Insignificant activities list: <ul style="list-style-type: none"> Capacity of Emission Source (ID No. I-T-0048) from 11,628 gallons to 11,744 gallons Capacity of Emission Source (ID No. I-T-0053) from 4,316 gallons to 3,000 gallons Capacity of Emission Source (ID No. I-T-0054) from 2,075 gallons to 3,000 gallons Capacity of Emission Source (ID No. I-T-0057) from 3,133 gallons to 3,171 gallons Added Emission Source (ID No. I-T-0071) Wastewater storage tank (8,800 gallon capacity) Emission Source (I-ES-GS16) description was changed from a gas starter to an electric starter
Permit Cover	Table of Contents	Added Section 3 Insignificant Activities Per 15A NCAC 02Q .0503(8) Added Section 4 General Permit Conditions
-----	All	Updated Permit Revision number in header Made minor corrections in capitalization and wording throughout permit Updated language throughout permit to be consistent with Permit Shell
4	1	Deleted footnote and asterisks from Permitted Emission Source(s) and Associated Air Pollution Control Device(s) table.
N/A	Page 3 of permit	Added list of Acronyms
N/A	2.1 A.3	Added new Condition language in Section for 15A NCAC 02D .1111: MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY (MACT) for 40 CFR 63 Subpart ZZZZ for emission sources (ID Nos. ES-M/L1 through ES-M/L10). No requirements changed. Renumbered following Conditions.
5-8	2.1 A.4	Updated 15A NCAC 02D .1111: MACT for 40 CFR 63 Subpart ZZZZ language for emission sources (ID Nos. ES-AUX1 through ES-AUX3, and ES-A/C1)
N/A	2.1 B.3	Added new Condition language in Section for 15A NCAC 02D .1111: MACT for 40 CFR 63 Subpart ZZZZ for emission sources (ID Nos. ES-M/L11 through ES-M/L15). No requirements changed.
10-11	2.1 C.2	Updated NSPS language
N/A	2.1 C.3.a and b	Added new Condition language for 15A NCAC 02D .1111: MACT for 40 CFR 63 Subpart YYYY Applicability and Subcategories with limited requirements. No requirements changed.
13	2.1 E.4	Deleted 15A NCAC 02D .1109 Case by Case MACT and renumbered following conditions
14-16	2.1 E.4	Updated language for 15A NCAC 02D .1111: MACT for 40 CFR 63 Subpart DDDDD. Removed language about complying with CAA 112(j) standard in Section 2.1 E.4 through May 19, 2019 and being subject to MACT DDDDD starting May 20, 2019.
19-23	3	Updated General Conditions to most recent version 6.0 dated 01/07/2022 Moved to Section 4 of permit
Attachment List of Acronyms	-----	Moved to Section 3 of new permit revision T14

* This list is not intended to be a detailed record of every change made to the permit but a summary of those changes.

This permit renewal is without modification, however changes to the Title V Equipment Editor are needed. Transco requested after reviewing the draft permit that emission source (I-ES-GS16) be changed from a gas starter

to an electric starter. The Permittee also requested changes to the capacity in gallons of some of the insignificant activities as noted below:

<u>Emission Source ID</u>	<u>Description</u>	<u>Capacity (gallons)</u>	<u>Updated Capacity (gallons)</u>
I-T-0048	Lubricating oil tank	11,628	11,744
I-T-0053	Make up/ethylene glycol/water tank	4,316	3,000
I-T-0054	Antifreeze/ethylene glycol/water tank	2,075	3,000
I-T-0057	Used oil tank	3,133	3,171

A wastewater storage tank (ID No. I-T-0071) with a capacity of 8,800 gallons will be added to the insignificant activities list based on the information below provided by Transco via email on July 8, 2022:

Transcontinental Gas Pipe Line Company, LLC
Compressor Station 160, Rockingham County, NC

IA Oily Wastewater Storage Tank Emissions

Storage Tank Specifications

Parameter	Value	Unit of Measure
Unit ID No.	I-T-0071	-
Material Stored	Oily Wastewater	-
Capacity	210	barrels
	8,800	gallons
Annual Turnovers	12	turnovers/year
Annual Throughput	105,600	gallons/year

Summary of Emissions^(1,2,3)

Air Contaminant	Working Losses (lb/yr)	Breathing Losses (lb/yr)	Total Losses (lb/yr)	Hourly Emissions ⁽⁴⁾ (lb/hr)	Annual Emissions (tpy)
VOC	3.91	7.84	11.75	0.03	0.01

Notes:

- ⁽¹⁾ Working and breathing losses were obtained from Emission Master.
- ⁽²⁾ The oily wastewater was assumed to be Distillate Fuel Oil No. 2.
- ⁽³⁾ The tank contents are conservatively assumed to be 100% VOC.
- ⁽⁴⁾ The hourly VOC emission rate was conservatively assumed to be equivalent to the lb/day emission rate.

5. Regulatory Review

Transco is subject to the following regulations. The facility’s equipment and operations have not changed since the last minor modification in 2019. The permit was updated to reflect the most current stipulations for all applicable regulations, where necessary.

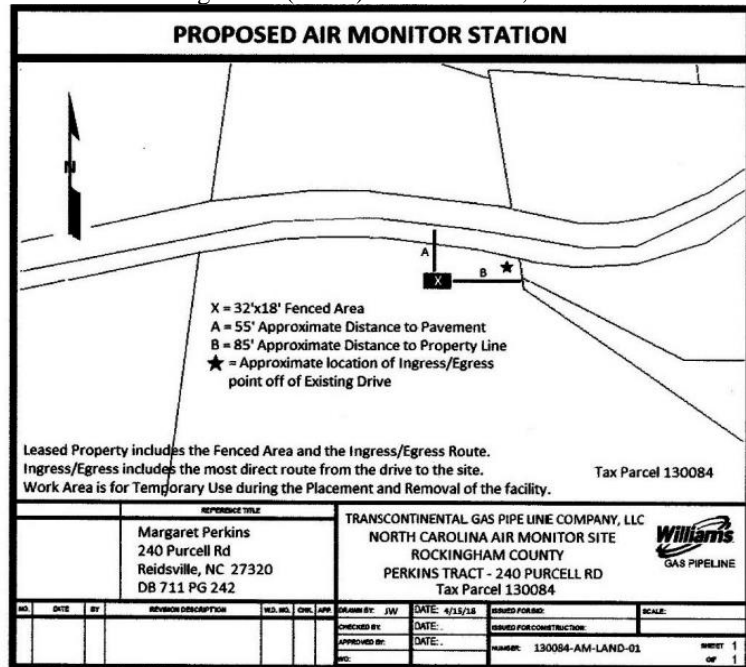
- 15A NCAC 02D .0407, Nitrogen Dioxide
- 15A NCAC 02D .0503, Particulates from Fuel Burning Indirect Heat Exchangers
- 15A NCAC 02D .0516, Sulfur Dioxide Emissions from Combustion Sources
- 15A NCAC 02D .0521, Control of Visible Emissions
- 15A NCAC 02D .0524, New Source Performance Standards (NSPS), 40 CFR 60, Subpart GG “Standards of Performance for Stationary Gas Turbines”
- 15A NCAC 02D .1109 Case by Case MACT (will be deleted from Permit No. 09113T14)
- 15A NCAC 02D .1111, “Maximum Achievable Control Technology” (MACT), 40 CFR 63, Subpart DDDDD “National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters”
- 15A NCAC 02D .1111, National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines, 40 CFR 63, Subpart YYYY. No applicable requirements per 63.6090(b)(4).
- 15A NCAC 02D .1111, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, 40 CFR 63, Subpart ZZZZ. No applicable requirements per 63.6590(b)(3)
- 15A NCAC 02D .1409, Seasonal Emission Rate for Large Combustion Sources

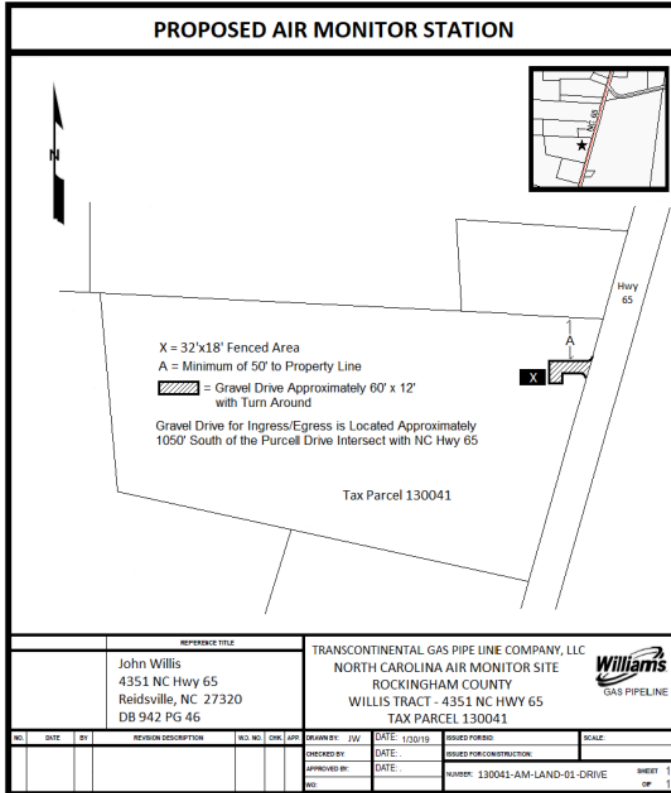
- 15A NCAC 02D .0407, Nitrogen Dioxide -This facility-wide regulation, was added to Permit No. 09113T13 dated March 25, 2019, under a minor modification. As stated in the permit review by Mark Cuilla, ‘Transcontinental Gas Pipe Line Company, LLC – Station 160 (Transco) currently operates under Title V permit no. 09113T12 for its existing equipment. Section 2.2 A.1 of that permit limits nitrogen oxides (NO₂) emissions to no more than 302 tons per ozone season. However, the permit does not currently contain limits to ensure that the 1-hour NO₂ national ambient air quality standard (NAAQS) is met. The NC DAQ recently modeled Transco in excess of the 1-hour NO₂ NAAQS (as part of an air dispersion model for a PSD permit modification of NTE Energy) and thus determined that the permit needed to be modified to include hourly NO₂ emission limits for the large combustion sources.

In response, Transco conducted its own modeling under certain atmospheric conditions and source configurations. Transco demonstrated through less conservative modeling inputs that the Station would not cause an exceedance of the 1-hour NAAQS. Transco’s approach was ultimately not accepted by NC DAQ, and accordingly both parties agreed that Transco could conduct a program of ambient air monitoring of actual NO₂ emissions in order to determine impacts for the purposes of demonstrating compliance.’

This rule is state enforceable only and contains the requirements for the facility to operate two ambient monitors for the determination of compliance with the 1-hour NO₂ NAAQS as outlined in the plan agreed upon by Transco and DAQ dated January 14, 2019. Item 4. (a) of the plan, states that Transco shall have 36 months of monitoring completed and final data certified by the facility and submitted to DAQ. Transco hires a third-party company, ERM, to maintain the monitors. Compliance is expected.

Transco Compressor Station 160 Proposed NO₂ Monitoring Station Network
 NO₂ Monitoring Site 1 (North) 36.344357° N, 79.816143° W





15A NCAC 02D .0503, Particulates from Fuel Burning Indirect Heat Exchangers – This rule regulates the emissions of particulate matter from the combustion of a fuel, in Transco’s case natural gas, that are discharged from any stack or chimney into the atmosphere. Transco’s natural gas-fired boiler (ID No. ES-BLR-2) is subject to this rule and shall not exceed an allowable emission limit for particulate matter of 0.60 lbs/million Btu because the boiler has a heat input of 5.2 million Btu (≤ 10 million Btu). The allowable emissions of particulate matter is calculated by the equation $E = 1.090 * Q^{-0.2594}$. "E" equals the allowable emission limit for particulate matter in lb/million Btu. "Q" equals the maximum heat input in million Btu/hour. No monitoring/recordkeeping/reporting is required for particulate emissions from the firing of natural gas in this 5.2 million Btu heat input boiler because the particular emissions are expected to be well below the allowable emission rate. Continued compliance is anticipated.

- **15A NCAC 02D .0516, Sulfur Dioxide Emissions from Combustion Sources** – This regulation requires that emissions of sulfur dioxide from any source of combustion discharged from any vent, stack, or chimney shall not exceed 2.3 pounds of sulfur dioxide per million BTU input. Transco’s ten, 2-stroke natural gas lean-fired internal combustion engines (ID Nos. ES-M/L1 through ES-M/L10), four, 4-stroke natural gas rich-fired emergency internal combustion engines (ID Nos. ES-AUX1, ES-AUX2, ES-AUX3 and ES-A/C1), five, 2-stroke natural gas lean-fired internal combustion engines (ID Nos. ES-M/L11 through ES-M/L15) and one natural gas-fired boiler (ID No. ES-BLR2) are subject to this regulation. No monitoring/recordkeeping/reporting is required for sulfur dioxide emissions from the firing of natural gas from the above-mentioned sources because natural gas is inherently low in sulfur dioxide emissions. Continued compliance is anticipated.
- **15A NCAC 02D .0521, Control of Visible Emissions** – Equipment manufactured and operating after July 1, 1971 and must not have visible emissions of more than 20 percent opacity when averaged over a six-minute period, except as specified in 15A NCAC 02D .0521(d). Visible emissions from the natural gas-fired dry low NOx combustion turbine (ID No. ES-M/L16) at the Transco facility is subject to this regulation; however, there

are no monitoring, record keeping, and reporting requirements required for visible emissions from the firing of natural gas in this source. If the results of emission testing are above the limits mentioned above the Permittee shall be deemed out of compliance with 15A NCAC 02D .0521. Continued compliance with this regulation is anticipated.

Equipment manufactured and operating prior to July 1, 1971, must not have visible emissions of more than 40% opacity when averaged over a six-minute period, except as specified in 15A NCAC 02D .0521(d). Visible emissions from Transco's ten, 2-stroke natural gas lean-fired internal combustion engines (ID Nos. ES-M/L1 through ES-M/L10), four, 4-stroke natural gas rich-fired emergency internal combustion engines (ID Nos. ES-AUX1, ES-AUX2, ES-AUX3 and ES-A/C1), five, 2-stroke natural gas lean-fired internal combustion engines (ID Nos. ES-M/L11 through ES-M/L15), and one natural gas-fired boiler (ID No. ES-BLR2) are subject to this regulation; however, there are no monitoring, recordkeeping, and reporting requirements required because No monitoring/recordkeeping/reporting is required for visible emissions from the firing of natural gas in these sources. If the results of emission testing are above the limits mentioned above the Permittee shall be deemed out of compliance with 15A NCAC 02D .0521. Continued compliance with this regulation is anticipated.

- 15A NCAC 02D .0524 New Source Performance Standards (NSPS), 40 CFR Subpart GG “Standards of Performance of Stationary Gas Turbines.” More discussion on NSPS is provided below in Section 6.
- 15A NCAC 02D .1111, “Maximum Achievable Control Technology” (MACT), 40 CFR 63, Subpart DDDDD “National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters.” More discussion on NSPS is provided below in Section 6.
- 15A NCAC 02D .1111, National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines, 40 CFR 63, Subpart YYYY. More discussion on NESHAP is provided below in Section 6.
- 15A NCAC 02D .1111, Maximum Achievable Control Technology (MACT) – Transco is subject to the requirements of 15A NCAC 02D .1111 “Maximum Achievable Control Technology” and 40 CFR 63 Subpart ZZZZ “National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE).” More discussion on MACT is provided below in Section 6.
- 15A NCAC 02D .1409, Seasonal Emission Rate for Large Combustion Sources -Transco is required to comply with 15A NCAC 02D .1409 for ES-M/L9 and ES-M/L11 through 15 which limits NO_x emissions from these engines to 302 tons for each respective ozone season (March 1 through October 31). Please note that the ozone season was changed from May 1 through September 30 in 2017. The applicability of 15A NCAC 02D .1409 was reviewed to see if any changes were required as part of this renewal permit application. To summarize, the allowed NO_x emissions during ozone season in the permit did not appear to match that required by the actual rule. However, the air permit review associated with 09113T02 issued December 18, 2003, appears to provide the explanation. In summary, Seasonal Emission Rate for Large Combustion Sources and, specifically, 15A NCAC 02D .1409(g) states that a company may propose to reduce emissions from other sources to satisfy its NO_x reduction requirements. As such, Transco reduced emissions from ES-M/L9 and ES-M/L11. Continued compliance with this regulation is indicated as these emissions units are subject to periodic emissions testing and consistently demonstrate compliance with the NO_x emission limits.

Transco commented during their review of the draft permit that the ozone season should be changed from May 1 through September 30 to March 1 through October 31; however, this change was not made in the draft. After discussions between the Permitting staff and Randy Strait of DAQ's Planning Section, it was determined that EPA's 2015 8-hour ozone National Ambient Air Quality Standards (NAAQS) revision extended the ambient ozone season monitoring period for North Carolina to March 1 through October 31, but the dates in 15A NCAC 02D .1402 remain to be May 1 through September 30. The May through September ozone season only applies to the period during which North Carolina needs to monitor for ozone to demonstrate compliance with the 2015 ozone NAAQs. Therefore, the ozone season was kept as May 1 through September 30 in the permit.

According to the most recent Inspection/Stack Test Observation report dated August 4, 2021, by Dylan Wright of the WSRO, *‘in order to demonstrate compliance with this limit this facility is required to perform stack testing to establish a correlation between engine parametric data and NO_x emissions for each engine. Those parameters must be subsequently tracked in order to assure compliance. The initial performance testing was*

performed between April 15-27, 2004, and the parametric data was established at that time. This was retested on April 23, 2020, and the test results from this test were approved by SSCB on July 23, 2021.

If the three-hour average of the actual air manifold pressure falls below the critical pressure for any unit three times during any ozone season, then performance testing must be performed to reestablish the parametric values and verify compliance. The facility is required to monitor these parameters, collect a minimum of four data points over each hour, and record each parameter hourly. This facility tracks these values on the computer and each value is recorded hourly. Traditionally this facility used constant values for fuel specific gravity (FSG) and stoichiometric Air/Fuel ratio (AF_{ST}) when monitoring the critical air manifold pressure. The facility's Air/Fuel controllers also assumed a constant BTU value. Pipeline conditions have led to gas quality fluctuations, so these constants are no longer appropriate. The purpose of the "re-map" tests was to re-establish the critical air manifold pressure to allow for fluctuating FSG, AF_{ST} , and "C" constants. Essentially, the test is mapping these values to a curve rather than keeping them constant.

The facility is required to perform portable analyzer NO_x testing once per year during the ozone season on one engine of each model type. They must calculate the seasonal NO_x emission rate for each engine and the total emissions using the hourly NO_x emissions limits listed in the permit. If the seasonal NO_x testing exceeds the limits listed in the permit (shown above in the Source Testing Observation discussion), then the seasonal test results should be used to calculate emissions instead. If the limits in the permit are exceeded, the facility is required to re-test for that unit in accordance with condition 2.2.A.1.b.

The facility is required to submit a summary report for this condition semiannually including all deviations. The required reports were received by the WSRO-DAQ on January 29, 2021, and July 28, 2021. This facility emitted 110.8 tons of NO_x during the 2020 ozone season. Compliance was demonstrated.' Continued compliance with this regulation is indicated as these emissions units are subject to periodic emissions testing and consistently demonstrate compliance with the NO_x emission limits.

- 15A NCAC 02D .1806, Control and Prohibition of Odorous Emissions – This regulation is state enforceable only and applies to the entire facility and states that "The Permittee shall not operate the facility without implementing management practices or installing and operating odor control equipment sufficient to prevent odorous emissions from the facility from causing or contributing to objectionable odors beyond the facility's boundary."

According to the most recent inspection report by Dylan Wright of the Winston-Salem Regional office on August 4, 2021, "The facility has received numerous complaints from a single complainant about odors originating from this facility. The DAQ has investigated these complaints several times and has not substantiated them. On June 4, 2020, the DAQ issued a letter to the complainant that stated this office has not been able to make an objectionable odor determination. There have not been any additional complaints since this letter was issued. Therefore, DAQ will not be requiring the facility to develop an odor management plan. This facility appears to be in compliance with this condition."

- 15A NCAC 02Q .0317, Avoidance Conditions – Transco has accepted a permit limit on VOC emissions to avoid 15A NCAC 02D .0530, Prevention of Significant Deterioration (PSD). More discussion on PSD is provided below in Section 6.

6. NESHAP/MACT, NSPS, PSD, 112(r), CAM

NESHAP/MACT – Transco is currently subject to the following rules at their facility:

15A NCAC 02D .1111 requirements for the 4 four-stroke natural gas rich-fired emergency internal combustion engines (ID Nos. ES-AUX1 through ES-AUX3 and ES-A/C) as promulgated under 40 CFR Part 63 Subpart ZZZZ.

The requirements for these engines are summarized as follows:

- Change the oil and filter every 500 hours of operation or annually, whichever comes first. As an alternative, the facility has the option to utilize an oil analysis program that meets the requirements listed in 40 CFR 63.6625(j);

- Inspect the spark plugs every 1,000 hours of operation or annually, whichever comes first, and replacing as necessary;
- Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replacing as necessary;
- Operate and maintain the engines and control devices (if any) according to the manufacturer’s emission related written instructions or maintenance plan developed by the permittee that minimizes emissions from the engine to the extent practicable;
- Install non-resettable hour meters on each engine if they are not already installed and keep records of the hours of operation recorded through the non-resettable hour meters;
- Minimize time spent at idle during startup and minimize the startup time to a period needed for appropriate and safe loading of the engines, not to exceed 30 minutes, after which time the non-startup emission limitations apply;
- There is no time limit on usage during emergency situations. The engines can be operated for maintenance checks and readiness testing for up to 100 hours per year.

According to the most recent Inspection/Stack Test Observation report dated August 4, 2021, by Dylan Wright of the WSRO, “Each engine is equipped with a non-resettable hour meter and site maintains generator run logs. The 100 hour/year limit for maintenance testing was not exceeded. The hour meter readings during this inspection (and the previous inspection) and are shown in the table below. An inspection of each engine was performed on September 28, 2020. The facility changed the oil in all of these engines during the maintenance event two years ago. The facility also sent the oil off for analysis to ensure that the engine is still running correctly. A semiannual deviation report must be submitted to DAQ for all instances of non-compliance. No deviations have been reported to DAQ this year. An additional annual report is required for engines >100 bhp that have contractual obligations to operate, but, as mentioned above, this facility does not have any contracts, so this is not required.”

Engine ID	Meter Reading on 7/28/2020	Meter Reading on 7/27/2021	Hours of Total Operation
ES-AUX1	165.2	221.6	56.4
ES-AUX2	356.0	411.7	55.7
ES-AUX3	350.2	409.0	58.8
ES-A/C1	118.0	122.4	4.4

The ten two-stroke natural gas lean-fired internal combustion engines and the five two-stroke natural gas lean-fired internal combustion engines (ID Nos. ES-M/L1 through ES-M/L10) and the five two-stroke natural gas lean-fired internal combustion engines (ID Nos. ES-M/L11 through 15) are also subject to Subpart ZZZZ but have no applicable requirements per 63.6590 (b)(3)(i) and during the renewal process conditions (Condition 2.1 A.3 and Condition 2.1 B.3) were added to the permit referencing these requirements.

The natural gas-fired dry low NO_x combustion turbine (ID No. ES-M/L16) is subject to 40 CFR Part 63 Subpart YYYY but has no requirements per 63.6090 (b)(3) and during the renewal process, Condition 2.1 C.3 was added to the permit referencing these requirements. It should be noted in that the EPA lifted the stay on a formaldehyde emissions limit for Stationary combustion Turbines, effective March 9, 2022. 40 CFR 63.6090 states that existing sources are turbines that commenced construction on or before January 14, 2003. Mr. Bill Scarpinato, Environmental Specialist IV of Transcontinental, provided a purchase order for this turbine that was dated August 31, 2002. Therefore, the turbine is considered existing. 40 CFR 63.6090(b)(4) states that “Existing stationary combustion turbines in all subcategories do not have to meet the requirements of this subpart and of subpart A of this part. No initial notification is necessary for any existing stationary combustion turbine, even if a new or reconstructed turbine in the same category would require an initial notification.” Therefore, it was verified during this inspection that this source does not have to meet the requirements of this rule.

The boiler is subject to 40 CFR Part 63 Subpart DDDDD (15A NCAC 02D .1109 Case-by-Case MACT will be deleted from this permit because the Permittee was required to comply with that regulation through May 19, 2019). The 09113T13 permit condition specifies that the facility should comply with the State 112(j) rule until May 19, 2019. An initial notification was due on May 31, 2013, and the notification of compliance status is due within 60 days of the compliance date. According to the most recent Inspection/Stack Test Observation report dated August 4, 2021, by Dylan Wright of the WSRO, ‘this rule requires this facility to perform a tune-up every 2 years and perform a one-time energy assessment., Transco has complied with the tune-up requirements. The facility has also performed

an energy assessment. The report for the energy assessment (performed by AECOM) is kept on site and dated August 24, 2015. The initial notification to DAQ on May 28, 2013. Notifications of Compliance Status (NOCs) were received on January 26, 2016 (for the tune-up) and September 8, 2015 (for the energy assessment). The facility's two most recent boiler tune-ups were conducted on February 26, 2020, and October 13, 2021. The facility appears to be in compliance with this rule. This permit renewal does not affect this status and compliance is anticipated.'

NSPS –Transco is subject to NSPS, 40 CFR 60, Subpart GG for its existing natural gas-fired dry low NO_x combustion turbine (ID No. ES-M/L16). This rule contains NO_x and SO₂ emissions limits of 203.4 ppm (15% O₂) and 150 ppm (15% O₂) respectively. No monitoring, recordkeeping, or reporting requirements are required for the NO_x limit, but the rule does require the facility to demonstrate compliance with the SO₂ limit by demonstrating that the fuel burned in the turbine meets the definition of natural gas in 40 CFR 60.331(u) using gas quality characteristics in a current, valid purchase contract, tariff sheet, or transportation contract specifying the maximum sulfur content is 20 grains/100 scf or less. According to the most recent Inspection/Stack Test Observation report dated August 4, 2021, by Dylan Wright of the WSRO, *'this facility produced a copy of a tariff dated July 20, 2010, stating that the pipeline gas must meet these requirements.'* This permit renewal does not affect this status and compliance is anticipated.

PSD – 15A NCAC 02Q .0317 avoidance condition for 02D .0530, Prevention of Significant Deterioration (PSD). Transco is required to discharge less than 40 tons VOCs per consecutive 12-month period in the natural gas pipeline blowdown operations (ID No. ES-BDO). VOC emissions shall be calculated monthly and recorded in a logbook and submitted to DAQ in a semi-annual summary report. According to the most recent Inspection/Stack Test Observation report dated August 4, 2021, by Dylan Wright of the WSRO, the most recent report was received at the DAQ-WSRO on July 28, 2021 and was found to be acceptable and compliance was demonstrated. The facility is classified PSD major for NO_x and VOCs and the Permittee currently operates under one PSD avoidance condition for VOCs from its blowdown operations. This permit renewal does not affect this status and compliance is anticipated.

112r – The facility is not subject to Section 112(r) of the Clean Air Act requirements because it does not store any of the regulated substances in quantities above the thresholds in the Rule. This permit renewal does not affect this status.

CAM – The CAM rule (40 CFR 64; 15A NCAC 02D .0614) applies to each pollutant specific emissions unit (PSEU) at major TV facilities that meets all three following criteria:

- the unit is subject to any (non-exempt: e.g. pre November 15, 1990, Section 111 or Section 112 standard) emission limitation or standard for the applicable regulated pollutant.
- the unit uses any control device to achieve compliance with any such emission limitation or standard.
- The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source (i.e., 100 tons per year for criteria pollutants or 10/25 tons per year for HAPs).

There are no permitted control devices at this facility; therefore, CAM is not applicable. This permit renewal does not affect this status.

7. Facility-Wide Air Toxics/Toxic Air Pollutants

The facility is not currently subject to NC Air Toxics as it never triggered a toxics review. It should be noted that the facility is subject to MACT standards and that all subject sources are combustion sources eligible for the exemption offered by 15A NCAC 2Q .0702. This permit renewal does not affect this status.

8. Facility Emissions Review

The facility-wide potential emissions do not change under this TV permit renewal. Actual emissions for criteria pollutants and HAPs for the years 2016 through 2020 are provided in the header of this permit review.

9. Compliance Status

DAQ has reviewed the compliance status of Transco for the last five years. During the most recent inspection/Stack Test Observation Report, dated August 4, 2021, by Dylan Wright of the WSRO, the facility appeared to be in compliance with all applicable requirements. The facility has had no air quality violations within the last five years; however, please see the reports of odor under the above discussion under rule 15A NCAC 02D .1806, Control and Prohibition of Odorous Emissions. There was also a record in IBEAM of an informal NOV being issued July 3, 2018, for the Annual Compliance Certification (ACC) not being submitted by the due date; however, Transco was able to provide evidence that their 2017 ACC was submitted by the due date but to an inaccurate address and therefore the WSRO rescinded the NOV. The facility's 2021 ACC was received on March 1, 2022 and is still under review by the regional office. The ACC for 2020 was received on February 8, 2021. General Condition 3.X requires the facility to report by June 30 of each year the actual emissions of each air pollutant listed in 2Q .0207(a) from each emission source within the facility during the previous calendar year. The last two inventories for CY2019 and CY2020 were received on June 22, 2020, and June 29, 2021, respectively. Compliance is indicated.

10. Public Notice/EPA and Affected State(s) Review

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Consistent with 15A NCAC 02Q .0525, the EPA will have a concurrent 45-day review period. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit shall be provided to EPA. Also, pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice is provided to the public under 02Q .0521 above.

The Public Notice and EPA Review periods began on XXXX XX, 2022. The Public Notice period ended on XXXX XX, 2022 and the EPA Review period ended on XXXX XX, 2022.

No comments were received.

11. Other Regulatory Considerations

- A P.E. seal is NOT required for this renewal application.
- A zoning consistency determination is NOT required for this renewal application.
- A permit fee is NOT required for this renewal application.

12. Recommendations

The permit renewal application for Transcontinental Gas Pipe Line Company, LLC located in Reidsville, Rockingham County has been reviewed by DAQ to determine compliance with all procedures and requirements. DAQ has determined this facility is complying or will achieve compliance, as specified in the permit, with all requirements that are applicable to the affected sources. DAQ recommends the issuance of Air Permit No. 09113T14.