



February 28, 2023

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Columbia Gas Transmission, LLC
700 Louisiana Street, Suite 1300
Houston, TX 77002-2700

Sorana Linder
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Re: Columbia Gas Transmission, LLC
Annual Retainage Adjustment Mechanism
Docket No. RP23 - ___ -000

Dear Ms. Bose:

Pursuant to Section 4 of the Natural Gas Act (“NGA”) and Part 154 of the Federal Energy Regulatory Commission’s (“FERC” or “Commission”) regulations,¹ Columbia Gas Transmission, LLC (“Columbia”) respectfully submits for filing proposed revisions to Section 17 of the Currently Effective Rates set forth in Columbia’s FERC Gas Tariff, Fourth Revised Volume No. 1 (“Tariff”).² Revised Section 17 is being submitted to adjust Columbia’s retainage percentage consistent with Columbia’s Retainage Adjustment Mechanism (“RAM”) set forth in Section 35 of the General Terms & Conditions (“GT&C”) of Columbia’s Tariff³ and the uncontested Stipulation and Agreement of Settlement filed with the Commission in Docket No. RP20-1060, *et al.* (“Settlement”),⁴ which reflects the terms of Article X.L.2 (“LAUF Cap”). In this instant filing and as more fully described below, Columbia requests that the Commission accept the revised tariff section, filed herein as Attachment A, to become effective April 1, 2023.

Correspondence

The names, titles and mailing address of the persons to whom correspondence and communications concerning this filing should be directed are as follows:

¹ 18 C.F.R. Part 154 (2023).

² Specifically, Part V.17 – Currently Effective Rates, Retainage Rates (“Section 17”).

³ Part VII.35 – GT&C, Retainage Adjustment Mechanism (RAM) (“Section 35”).

⁴ See *Columbia Gas Transmission, LLC* Order Approving Settlement with Modification, 178 FERC ¶ 61,144 (February 25, 2022) (the “Order”).

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Statement of Nature, Basis and Reasons

Certain of Columbia’s rate schedules require shippers to supply a quantity of gas to Columbia, expressed as a percentage of receipt volume, to compensate Columbia for company-use gas (“Company-Use”) and lost and unaccounted-for quantities (“LAUF”) (collectively, “Retainage”). The amount of such Retainage is determined based upon the Retainage percentages set forth in Section 17 of the Currently Effective Rates included in Columbia’s Tariff (“Retainage Percentages”).⁵ Section 35 of the General Terms and Conditions of Columbia’s Tariff allows Columbia to adjust its Retainage Percentages through its RAM to consider both prospective changes in Retainage requirements and unrecovered Retainage quantities from the preceding period. The instant filing submitted pursuant to Section 35.2⁶ of Columbia’s Tariff, represents Columbia’s annual RAM filing to effectuate an adjustment to Retainage Percentages for prospective changes (“Current Retainage Percentage Component”) and unrecovered quantities (“Unrecovered Retainage Percentage Component”) in addition to implementing the LAUF Cap in the calculation of the Retainage Percentage,⁷ as more fully described below.

⁵ Section 17 lists six (6) separate Retainage Percentages, including: 1) Transportation Retainage; 2) Transportation Retainage – FT-C; 3) Gathering Retainage; 4) Storage Gas Loss Retainage; 5) Ohio Storage Gas Loss Retainage; and 6) Columbia Processing Retainage.

⁶ Part VII.35.2 – GT&C, Retainage Adjustment Mechanism (RAM), Transporter’s RAM Filing (“Section 35.2”).

⁷ Pursuant to Article X.L.2 of the Settlement, Columbia has capped the maximum level of LAUF attributable to Columbia’s Low Pressure System that is included in the Retainage Percentages. *See*, Appendix A, Page 2 of 5, Line No. 6.

Determination of Retainage Percentages

Each of Columbia’s Retainage Percentages are comprised of a Current Retainage Percentage Component and an Unrecovered Retainage Percent Component, with the exception of the Gathering Retainage Percentage, which is discussed further below.

Current Retainage Percentage Component

In accordance with Section 35.4(a)⁸ of Columbia’s Tariff, the Current Retainage Percentage Component is recalculated for each RAM filing and is equal to the estimated total Company-Use and LAUF required during the twelve-month period commencing with the effective date of Columbia’s RAM filing (*i.e.*, April 1, 2023), divided by the total volumetric quantity estimated by Columbia to flow under the applicable rate schedules during the same twelve-month period. The derivation of the Current Retainage Percentage Component for each of the applicable services is set forth in Appendix A.

Lost and Unaccounted-For Quantities

As reflected in the workpapers attached hereto as Appendix A, Columbia’s proposed Current Retainage Percentage Component reflects an increase in LAUF volumes on its system. The increase in LAUF was uncovered as a result of Columbia’s conversion from the NX-19 method to the more-accurate AGA-8 method for calculating supercompressibility as part of measuring the natural gas flowing through meters on Columbia’s system.⁹ As permitted by its FERC-approved tariff,¹⁰ and in order to align itself with peers in the industry,¹¹ Columbia initially implemented this conversion in March 2021. Following the implementation of the AGA-8 method, Columbia

⁸ Part VII.35.4(a) – GT&C, Retainage Adjustment Mechanism (RAM), Retainage Percentage, Current Retainage Percentage Component (“Section 35.4(a)”).

⁹ Part VII. 26.8 – GT&C, Measurement, Supercompressibility (“Section 26.8”) provides that the deviation of natural gas from the Ideal Gas Laws may be determined in accordance with the American Gas Association, Par Research Project NX-19 report, titled “Manual for the Determination of Supercompressibility Factors for Natural Gas” (“NX-19”), the AGA Report No. 8, Compressibility Factors of Natural Gas and Other Related Hydrocarbon Gas (1994) (“AGA-8”), or by any other method mutually agreed upon by Columbia and Shipper.

¹⁰ See Section 26.8 (“Transporter may utilize AGA Report No. 8, Compressibility Factors of Natural Gas and Other Related Hydrocarbon Gas (1994), as amended from time to time as determined by Transporter . . .”).

¹¹ Columbia currently has interconnections with the following third-party pipeline operators that utilizes AGA-8 method for calculating supercompressibility: Eastern Gas Transmission & Storage; Texas Eastern Transmission, LP; Algonquin Gas Transmission, LLC; Rover Pipeline, LLC; Tennessee Gas Pipeline Company, LLC, National Fuel Gas Supply Corporation; Rockies Express Pipeline, LLC; Texas Gas Transmission, LLC and Transcontinental Gas Pipeline Company, LLC

began to see increases in LAUF volumes on its system, which continued into calendar year 2022. To mitigate these increases while it fully investigated the potential causes of the increasing LAUF, Columbia reverted non-storage meters back to the NX-19 method. After investigating the traditional causes of system LAUF such as meter inaccuracy, Columbia determined that the use of the AGA-8 method to calculate supercompressibility, which is more accurate than the NX-19 method, has revealed additional volumes on the system.¹²

The AGA-8 method of calculating supercompressibility helps provide for more accurate measurement of gas volumes because it utilizes the actual chemical composition of the gas to calculate supercompressibility; by contrast, the NX-19 method infers chemical makeup through the physical properties of the gas.¹³ Consequently, the use of the AGA-8 method will result in a different supercompressibility value than would result from the use of the NX-19 method if there is a discrepancy between the actual chemical composition of the gas (used by AGA-8 method) and the inferred chemical makeup of the gas (used by the NX-19 method). Greater differences between the actual chemical composition and the inferred chemical makeup of the gas will lead to a greater discrepancy in the calculation of supercompressibility using the respective methods. Differences in the individual attributes of the gas stream such as temperature, pressure, and gas composition can further increase the discrepancy between the volumes derived from using AGA-8 as opposed to NX-19.¹⁴

As part of its LAUF investigation, Columbia examined calculations covering October 2021 through September 2022 to analyze the flow-weighted pressure, temperature, and representative gas composition of the gas flowing on its system. The analysis revealed that the temperature of

¹² Supercompressibility is part of the standardized measurement calculation that corrects for the fact that gas does not follow the ideal gas laws, and converts measured cubic feet into standard cubic feet. AGA-8 was introduced to provide a more accurate supercompressibility calculation but required the full spectrum of gas constituents and remote terminal units with greater computational power. See AGA Report No. 8, Part 1 at Page 1 explaining that the purpose of developing AGA-8 was to extend the capabilities for accurate computation of compressibility factors beyond the temperature, pressure, and composition ranges of NX-19. Columbia completed the necessary system upgrades enabling it to utilize AGA-8 in 2020.

¹³ See *id.*

¹⁴ In this instance, gas composition refers to the British thermal unit (“Btu”) levels of the gas. Pressure and gas composition have a direct relationship with the difference in supercompressibility calculation methods, so higher pressure and/or higher Btu levels result in a larger volume difference when calculating supercompressibility using AGA-8 versus NX-19. Temperature has an inverse relationship, so lower temperatures result in a larger volume difference when calculating supercompressibility using AGA-8 versus NX-19.

the gas at receipt meters was lower than the temperature at delivery meters. Conversely, the pressure and Btu level of the gas at receipt meters was higher than the pressure and Btu levels at delivery meters. As a result, on Columbia's system there is a discrepancy between supercompressibility values calculated using the AGA-8 method as compared to values calculated using the NX-19 method. These discrepancies are generally greater when measuring receipt volumes than delivery volumes given the lower temperatures and higher pressures at receipt meters as compared to delivery meters. Thus, the use of the more-accurate AGA-8 method has revealed that LAUF volumes on Columbia's system are larger than those that would have resulted if the less-accurate NX-19 method had been used.

Columbia is preparing to convert all Columbia-operated non-storage meters back to AGA-8 in April 2023 to coincide with the start of the summer injection season. AGA-8 is the industry standard for supercompressibility and a majority of third-party operated points on Columbia's system have already converted to AGA-8. The use of the AGA-8 method, results in increased estimates of the LAUF component of Columbia's proposed Current Retainage Percentage as compared to the LAUF component that would have been calculated using the former NX-19 method. Columbia submits that its proposed Retainage Percentage is just and reasonable given that the use of the AGA-8 method provides a more accurate measure of LAUF on Columbia's system and the use of the AGA-8 method is expressly contemplated by Columbia's Tariff. Columbia is nevertheless continuing its efforts to mitigate LAUF increases (1) by prioritizing projects and facility improvements, where possible, based on LAUF impact, (2) by re-evaluating analytical methods and gas chromatograph assignments to improve the accuracy of energy calculations, and (3) through the introduction and use of real-time monitoring systems and Machine Learning models for measurement anomaly detection.

Unrecovered Retainage Percentage Component

In accordance with Section 35.4(b)¹⁵ of Columbia's Tariff, the Unrecovered Retainage Percentage Component is recalculated for each RAM filing and is equal to the actual total Company-Use and LAUF quantities for the preceding calendar year (*i.e.*, 2022), less the Retainage quantities retained

¹⁵ Part VII.35.4(b) – General Terms & Conditions, Retainage Adjustment Mechanism (RAM), Retainage Percentage, Unrecovered Retainage Percentage Component (“Section 35.4(b)”).

by Columbia during the same year, with the result divided by the total volumetric quantities estimated by Columbia to flow during the twelve-month period commencing with the effective date of Columbia’s RAM filing (*i.e.*, April 1, 2023). The derivation of the Unrecovered Retainage Percentage Component for each of the applicable services is set forth in Appendix B. Furthermore, Columbia is continuing its historical practice of including prior period adjustments in the calculation of its Unrecovered Retainage Percentage Component, as set forth in Appendix C.

Proposed Retainage Percentages

All adjustments to Retainage Percentages effectuated through this filing are increases with the exception of the Storage Gas Loss, which Columbia proposes to decrease from 0.436% to 0.405%.

	<u>Current Retainage Percentage</u>	<u>Proposed Retainage Percentage</u>
Transportation	1.831%	2.132%
Transportation – FT-C	0.423%	0.763%
Gathering	0.423%	0.763%
Storage Losses	0.436%	0.405%
Ohio Storage Expansion	0.450%	0.559%

Effective Date and Waiver

Columbia respectfully requests the Commission determine that its proposed Retainage Percentage is just and reasonable and accept revised Section 17, included herein as Attachment A, to become effective April 1, 2023. Columbia respectfully requests the Commission grant any waiver that it deems necessary to accept this filing and to place the filed tariff record into effect as requested herein.

Other Filings Which May Affect This Proceeding

There are no other filings before the Commission that may significantly affect the changes proposed herein.

Contents of Filing

In accordance with Section 154.7(a)(1) of the Commission's regulations, Columbia is submitting the following XML filing package, which includes:

1. This transmittal letter;
2. Workpapers supporting Columbia's filing (Appendices A, B, and C);
3. A clean version of the Tariff sections (Attachment A); and
4. A marked version of the Tariff sections (Attachment B).

Certificate of Service

As required by Sections 154.7(b) and 154.208 of the Commission's regulations, a copy of this filing is being served upon all of Columbia's existing customers and interested state regulatory agencies. A copy of this letter, together with any attachments, is available during regular business hours for public inspection at Columbia's principal place of business.

Pursuant to Section 385.2005 of the Commission's regulations, the undersigned has read this filing and knows its contents, and the contents are true as stated, to the best of her knowledge and belief. Additionally, the undersigned possesses full power and authority to sign such filing.

Any questions regarding this filing may be directed to Jonathan Scullion at (832) 320-5520.

Respectfully submitted,

COLUMBIA GAS TRANSMISSION, LLC



Sorana Linder
Director, Rates, Tariffs & Modernization

Enclosures

APPENDIX A

COLUMBIA GAS TRANSMISSION, LLC
RETAINAGE ADJUSTMENT MECHANISM
SUMMARY OF PROPOSED RETAINAGE RATES EFFECTIVE APRIL 1, 2023

LINE NO.	DESCRIPTION	TRANSPORTATION (1)	FT-C (2)	GATHERING (3)	STORAGE GAS LOSS (4)	OHIO STORAGE GAS LOSS (5)
1	PROPOSED RETAINAGE RATES	2.132%	0.763%	0.763%	0.405%	0.559%
2	CURRENTLY EFFECTIVE RETAINAGE RATES	1.831%	0.423%	0.423%	0.436%	0.450%
3	CHANGE IN RETAINAGE RATES	<u>0.301%</u>	<u>0.340%</u>	<u>0.340%</u>	<u>-0.031%</u>	<u>0.109%</u>

COLUMBIA GAS TRANSMISSION, LLC
RETAINAGE ADJUSTMENT MECHANISM
DERIVATION OF TRANSPORTATION RETAINAGE RATES
EFFECTIVE APRIL 1, 2023

LINE NO.	DESCRIPTION	TRANSPORTATION QUANTITIES
1	<u>COMPANY USE GAS REQUIREMENTS</u>	
2	COMPRESSOR STATION - Dth	28,893,096
3	OTHER UTILITY OPERATIONS - Dth	7,454,806
4	TOTAL COMPANY USE GAS REQUIREMENTS - Dth	<u>36,347,902</u>
5	<u>LOST AND UNACCOUNTED FOR REQUIREMENTS</u>	
6	PROJECTED UNACCOUNTED FOR GAS - Dth 1/	<u>17,000,332</u>
7	TOTAL RETAINAGE REQUIREMENTS - Dth (LINE 4 + LINE 6)	<u>53,348,234</u>
8	<u>RATE DETERMINANTS COMPANY GAS USE - Dth</u>	
9	DELIVERED VOLUMES - Dth	2,738,500,328
10	LESS FT-C VOLUMES	(2,926,062)
11	LESS GATHERING VOLUMES	(724,364)
12	COMPANY USE GAS ACTUAL (OVER) / UNDER RETAINAGE - Dth	1,890,042
13	UNACCOUNTED FOR GAS ACTUAL (OVER) / UNDER RETAINAGE - Dth	4,326,034
14	RETAINAGE REQUIREMENTS - Dth (LINE 7)	53,348,234
15	COMPANY GAS USE RATE DETERMINANTS - Dth	<u>2,794,414,212</u>
16	<u>RATE DETERMINANTS LOST AND UNACCOUNTED FOR - Dth</u>	
17	DELIVERED VOLUMES - Dth	2,738,500,328
18	COMPANY USE GAS ACTUAL (OVER) / UNDER RETAINAGE - Dth	1,890,042
19	UNACCOUNTED FOR GAS ACTUAL (OVER) / UNDER RETAINAGE - Dth	4,326,034
18	RETAINAGE REQUIREMENTS - Dth (LINE 7)	53,348,234
19	LOST AND UNACCOUNTED FOR RATE DETERMINANTS - Dth	<u>2,798,064,638</u>
20	<u>CURRENT RETAINAGE RATE</u>	
21	CUG (LINE 4 / LINE 15)	1.301%
22	LAUF (LINE 6 / LINE 19)	<u>0.608%</u>
23	<u>NON FT-C AND GATHERING TRANSPORTATION RETAINAGE RATE</u>	
24	CURRENT RETAINAGE RATE (LINE 21 + LINE 22)	1.909%
25	(OVER)/UNDER RECOVERED RETAINAGE SURCHARGE 2/	0.223%
26	(OVER)/UNDER RECOVERED RETAINAGE SURCHARGE	<u>2.132%</u>
27	<u>FT-C TRANSPORTATION AND GATHERING RETAINAGE RATE</u>	
28	CURRENT LAUF RETAINAGE RATE (LINE 22)	0.608%
29	(OVER)/UNDER RECOVERED LAUF RETAINAGE SURCHARGE 3/	0.155%
30	(OVER)/UNDER RECOVERED RETAINAGE SURCHARGE	<u>0.763%</u>

1/ 17,000,332 Dth represents Columbia's 2023 adjusted projection of 17,300,332 Dth minus 300,000 Dth, which was removed pursuant to the LAUF Cap imposed pursuant to the Columbia Settlement in Docket No. RP20-1060.

2/ For Detail See Appendix B, Page 2, Lines 11 and 16.

3/ For Detail See Appendix B, Page 2, Line 16.

COLUMBIA GAS TRANSMISSION, LLC
RETAINAGE ADJUSTMENT MECHANISM
DERIVATION OF SYSTEM WIDE STORAGE GAS LOSS RETAINAGE RATES
EFFECTIVE APRIL 1, 2023

LINE NO.	DESCRIPTION	QUANTITIES
1	<u>STORAGE LOSSES</u>	
2	ANNUAL TURNOVER - Dth	236,394,666
3	TOTAL STORAGE GAS LOSSES - Dth	1,072,796
4	(OVER)/UNDER RECOVERED VOLUMES - Dth	(112,401)
5	TOTAL - Dth (LINE 2 + LINE 3 + LINE 4)	<u>237,355,061</u>
6	CURRENT RETAINAGE RATES (LINE 3 / LINE 5)	0.452%
7	(OVER)/UNDER RECOVERED SURCHARGE 1/	<u>-0.047%</u>
8	TOTAL EFFECTIVE RETAINAGE RATE (LINE 6 + LINE 7)	<u><u>0.405%</u></u>
9	<u>OHIO STORAGE EXPANSION</u>	
10	ANNUAL TURNOVER - Dth	3,971,599
11	TOTAL STORAGE GAS LOSSES - Dth	25,621
12	(OVER)/UNDER RECOVERED SURCHARGE - Dth	(3,327)
13	TOTAL - Dth (LINE 10 + LINE 11 + LINE 12)	<u>3,993,893</u>
14	TOTAL RETAINAGE RATE (LINE 11 / LINE 13)	0.642%
15	PLUS: RETAINAGE (OVER)/UNDER RECOVERED SURCHARGE 2/	<u>-0.083%</u>
16	TOTAL EFFECTIVE RETAINAGE RATE (LINE 14 + LINE 15)	<u><u>0.559%</u></u>

1/ For Detail See Appendix B, Page 2, Line 23.

2/ For Detail See Appendix B, Page 2, Line 30.

COLUMBIA GAS TRANSMISSION, LLC
RETAINAGE ADJUSTMENT MECHANISM
PROJECTED THROUGHPUT
APRIL 2023 - MARCH 2024

<u>LINE NO.</u>	<u>RATE SCHEDULE</u>	<u>VOLUMES (Dth)</u>
1	FTS/NTS	2,113,209,268
2	FT-C	2,926,062
3	TPS	32,449,473
4	SST	551,953,004
5	ITS	3,782,863
6	OPT	32,028,650
7	GTS	<u>2,151,008</u>
8	TOTAL THROUGHPUT	<u><u>2,738,500,328</u></u>

APPENDIX B

COLUMBIA GAS TRANSMISSION, LLC
RETAINAGE ADJUSTMENT MECHANISM
(OVER)/UNDER RECOVERED RETAINAGE SURCHARGE
APPLICABLE TO TRANSPORTATION AND STORAGE SERVICES

<u>TRANSPORTATION RETAINAGE SURCHARGE</u>	<u>FT- C TRANSPORTATION RETAINAGE SURCHARGE</u>	<u>STORAGE RETAINAGE SURCHARGE</u>	<u>OHIO STORAGE RETAINAGE SURCHARGE</u>
0.223%	0.155%	-0.047%	-0.083%

COLUMBIA GAS TRANSMISSION, LLC
RETAINAGE ADJUSTMENT MECHANISM
DERIVATION OF (OVER)/UNDER RECOVERED RETAINAGE SURCHARGE
FOR THE PERIOD 1/1/22 THROUGH 12/31/22

LINE NO.		DTH
1	<u>TRANSPORTATION SURCHARGE DERIVATION</u>	
2	Beginning Balance	3,331,914
3	Volumes Collected 1/1/22 - 12/31/22	(2,377,245)
4	Surplus of 2020 Remaining Balance	27,171
5	Balance to be Collected 1/1/23 through 3/31/23	<u>981,840</u>
6	<u>Current Year Activity:</u>	
7	GUG Volumes Retained Under Transportation Rate Schedules	(35,332,742)
8	Actual CUG Incurred Under Transportation Rate Schedules	<u>37,222,784</u>
9	(Over)/Under Recovered CUG Surcharge Volume	1,890,042
10	Rate Determinants for the 12 month period ended March 2023	2,794,414,212
11	(Over)/Under Recovered CUG Retainage Surcharge	<u>0.068%</u>
12	LAUF Volumes Retained Under Transportation Rate Schedules	(10,474,666)
13	Actual LAUF Incurred Under Transportation Rate Schedules	<u>14,800,700</u>
14	(Over)/Under Recovered LAUF Surcharge Volume	4,326,034
15	Rate Determinants for the 12 month period ended March 2023	<u>2,798,064,638</u>
16	(Over)/Under Recovered LAUF Retainage Surcharge	<u>0.155%</u>
17	<u>STORAGE SURCHARGE DERIVATION</u>	
18	Volumes Retained Under Storage Rate Schedules	(1,185,197)
19	Storage Gas Loss	<u>1,072,796</u>
20	(Over)/Under Recovered Surcharge	(112,401)
21	(Over)/Under Recovered Surcharge Volume 1/1/22 - 12/31/22	(112,401)
22	Rate Determinants for the 12 month period ended March 2023	<u>237,355,061</u>
23	(Over)/Under Recovered Retainage Surcharge	<u>-0.047%</u>
24	<u>OHIO STORAGE SURCHARGE DERIVATION</u>	
25	Volumes Retained Under Ohio Storage Rate Schedules	(28,948)
26	Storage Gas Loss	<u>25,621</u>
27	(Over)/Under Recovered Surcharge	(3,327)
28	(Over)/Under Recovered Surcharge Volume 1/1/22 - 12/31/22	(3,327)
29	Rate Determinants for the 12 month period ended March 2023	<u>3,993,893</u>
30	(Over)/Under Recovered CUG Retainage Surcharge	<u>-0.083%</u>

COLUMBIA GAS TRANSMISSION, LLC
RETAINAGE ADJUSTMENT MECHANISM
COMPARISON OF RETAINED VS. ACTUAL VOLUMES FOR THE PERIOD 1/1/2022 THROUGH 12/31/2022

LINE NO.	DESCRIPTION	Beginning Balance (1) Dth	JAN 2022 (2) Dth	FEB 2022 (3) Dth	MAR 2022 (4) Dth	APR 2022 (5) Dth	MAY 2022 (6) Dth	JUN 2022 (7) Dth	JUL 2022 (8) Dth	AUG 2022 (9) Dth	SEP 2022 (10) Dth	OCT 2022 (11) Dth	NOV 2022 (12) Dth	DEC 2022 (13) Dth	SUBTOTAL (14) Dth	PRIORS (15) Dth	SURPLUS (16) Dth	TOTAL (17) Dth
1	Transportation																	
2	Company Gas Used																	
3	Retained Volumes		(3,603,248)	(2,951,296)	(2,920,001)	(2,720,506)	(2,829,711)	(2,792,096)	(2,844,678)	(2,782,136)	(2,663,816)	(2,674,257)	(3,046,770)	(3,426,043)	(35,254,558)	(391)	(77,793)	(35,332,742)
4	Actual Company Used Gas		4,380,714	3,724,061	3,427,648	2,502,931	2,416,776	2,660,300	2,973,692	2,848,075	2,811,324	2,702,551	3,133,291	3,630,296	37,211,659	11,125	0	37,222,784
5	Net Unrecovered Volumes		777,466	772,765	507,647	(217,575)	(412,935)	(131,796)	129,014	65,939	147,508	28,294	86,521	204,253	1,957,101	10,734	(77,793)	1,890,042
6	Unaccounted For Gas																	
7	Retained Volumes		(1,089,706)	(891,976)	(881,486)	(810,369)	(843,190)	(831,787)	(847,448)	(828,815)	(793,568)	(796,733)	(908,087)	(1,021,774)	(10,544,939)	(98)	70,371	(10,474,666)
8	Actual LAUF Volumes		2,116,941	1,146,759	1,549,132	1,695,545	1,433,769	1,266,250	1,586,147	1,143,648	654,621	86,599	692,910	1,017,347	14,289,673	511,027	0	14,800,700
9	Net Unrecovered Volumes		1,027,235	254,783	667,651	885,176	590,579	434,463	738,699	314,833	(238,947)	(710,134)	(215,177)	(4,427)	3,744,734	510,929	70,371	4,326,034
10	Total Unrecovered Volumes		1,804,701	1,027,548	1,175,298	667,601	177,644	302,667	867,713	380,772	(91,439)	(681,840)	(128,656)	199,826	5,701,835	521,663	(7,422)	6,216,076
11	Gathering																	
12	Company Gas Used																	
13	Retained Volumes		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Actual Company Used Gas		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Net Unrecovered Volumes		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Unaccounted For Gas																	
17	Retained Volumes		(3,537)	(3,118)	(1,516)	(439)	(125)	(309)	(318)	(312)	(298)	(265)	(215)	(207)	(10,659)	(209)	0	(10,868)
18	Actual LAUF Volumes		3,537	3,118	1,516	439	125	309	318	312	298	265	215	207	10,659	209	0	10,868
19	Net Unrecovered Volumes		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Total Unrecovered Volumes		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Storage																	
22	Company Gas Used																	
23	Retained Volumes		(8,172)	(8,121)	(21,714)	(98,944)	(205,995)	(201,423)	(167,325)	(150,743)	(159,398)	(89,239)	(40,415)	(20,478)	(1,171,967)	34	(13,264)	(1,185,197)
24	Storage Losses		72,388	53,978	48,587	51,251	84,035	98,577	106,911	112,298	120,301	121,128	110,117	93,225	1,072,796	0	0	1,072,796
25	Net Unrecovered Volumes		64,216	45,857	26,873	(47,693)	(121,960)	(102,846)	(60,414)	(38,445)	(39,097)	31,889	69,702	72,747	(99,171)	34	(13,264)	(112,401)
26	Ohio Storage Expansion																	
27	Company Gas Used																	
28	Retained Volumes		(286)	(104)	(312)	(2,120)	(5,187)	(1,573)	(3,758)	(563)	(3,110)	(2,155)	(1,723)	(1,572)	(22,463)	0	(6,485)	(28,948)
29	Storage Losses		1,600	1,206	1,084	1,112	2,317	2,530	2,503	2,616	2,911	2,977	2,616	2,149	25,621	0	0	25,621
30	Net Unrecovered Volumes		1,314	1,102	772	(1,008)	(2,870)	957	(1,255)	2,053	(199)	822	893	577	3,158	0	(6,485)	(3,327)
31	Total Unrecovered Volumes		1,870,231	1,074,507	1,202,943	618,900	52,814	200,778	806,044	344,380	(130,735)	(649,129)	(58,061)	273,150	5,605,822	521,697	(27,171)	6,100,348
32	RAM Surcharge Balance 2020		(27,824)	358	459	(192)									(27,199)	28	27,171	0
33	2020 Surcharge - Company Use Retention		612,915	(262,858)	(215,156)	(212,657)									(77,756)	(37)	77,793	0
34	2020 Surcharge - Unaccounted For Retention		(624,933)	263,940	216,501	214,802									70,310	61	(70,371)	0
35	2020 Surcharge - Storage Retention		(8,673)	(988)	(982)	(2,625)									(13,268)	4	13,264	0
36	2020 Surcharge - Ohio Storage Expansion Retention		(7,133)	264	96	288									(6,485)	0	6,485	0
37	RAM Surcharge Balance 2021		3,359,738				(253,382)	(250,823)	(248,568)	(257,133)	(253,743)	(240,568)	(249,989)	(292,142)	(331,550)	0	0	981,840
38	2021 Surcharge - Company Use Retention		2,629,332				(199,072)	(207,055)	(204,299)	(208,148)	(203,571)	(194,913)	(195,682)	(223,010)	(250,922)	0	0	742,660
39	2021 Surcharge - Unaccounted For Retention		871,169				(66,346)	(69,016)	(68,100)	(69,382)	(67,857)	(64,971)	(65,222)	(74,258)	(83,396)	0	0	242,621
40	2021 Surcharge - Storage Retention		(133,853)				11,517	23,978	23,446	19,477	17,547	18,554	10,387	4,704	2,383	0	0	(1,860)
41	2021 Surcharge - Ohio Storage Expansion Retention		(6,910)				519	1,270	385	920	138	762	528	422	385	0	0	(1,581)
42	Cumulative RAM Balance		3,331,914	5,202,503	6,277,469	7,480,220	7,845,738	7,647,729	7,599,939	8,148,850	8,239,487	7,868,184	6,969,066	6,618,863	6,560,463	7,082,188	7,082,188	7,082,188

APPENDIX C

COLUMBIA GAS TRANSMISSION, LLC
DETAIL OF PRIOR PERIOD RAM ADJUSTMENTS
JANUARY 2022 THROUGH DECEMBER 2022

LINE NO.	CUSTOMER NAME	NET Dth ADJUSTMENT (1)
1	<u>PRIOR PERIOD GAS ADJUSTMENTS</u>	
2	COMPRESSOR AND AUXILIARY	10,809
3	FREE GAS TO ROYALTY CUSTOMERS	316
4	TOTAL GAS ADJUSTMENTS (Lines 4,14, Appendix B, Page 3, Priors)	<u>11,125</u>
5	<u>PRIOR PERIOD RETAINAGE ADJUSTMENTS</u>	
6	Centerpoint 2	2
7	Columbia Gas of Kentucky, Inc.	(225)
8	Columbia Gas Of Maryland, Inc.	(5)
9	Columbia Gas of Ohio, Inc.	36
10	Columbia Gas Of Pennsylvania, Inc.	(47)
11	Columbia Gas of Virginia, Inc.	1
12	Constellation Energy Generation, LLC	1
13	Cumberland Gas Marketing Co.	2
14	Diversified Energy Marketing LLC	(730)
15	Eastern Energy Field Services Inc.	103
16	Greylock Marketing, LLC	308
17	Interstate Gas Supply, Inc.	(8)
18	Mountaineer Gas Company	(151)
19	New York State Electric & Gas Corporation	3
20	Northeast Ohio Natural Gas Corp.	(9)
21	Range Resources - Appalachia, LLC	54
22	Sequent Energy Management LLC	(11)
23	Snyder Armclar Gas Company, L.P.	(34)
24	Snyder Brothers, Inc.	46
25	Stand Energy Corporation	(10)
26	Symmetry Energy Solutions, LLC.	4
27	Twin Eagle Resource Management, LLC	8
28	UGI Energy Services, LLC	1
29	Washington Gas Light Company	<u>25</u>
30	TOTAL PRIOR RETAINED ADJUSTMENTS (Lines 3,7,13,17,23,28,32, Appendix B, Page 3, Priors)	<u>(636)</u>

COLUMBIA GAS TRANSMISSION, LLC
DETAIL OF PRIOR PERIOD RAM ADJUSTMENTS
JANUARY 2022 THROUGH DECEMBER 2022

LINE NO.	CUSTOMER NAME	NET Dth ADJUSTMENT (1)
31	<u>PRIOR PERIOD VOLUME ADJUSTMENTS</u>	
32	Antero Resources Corporation	19
33	Arsenal Resources Energy LLC	486
34	Aspire Energy of Ohio, LLC	388
35	BioUrja Trading, LLC	(31,000)
36	BP Energy Company	4,267
37	CarbonBetter, LLC	1,431
38	Castleton Commodities Merchant Trading L.P.	(6,014)
39	Centerpoint 2	(639)
40	Chevron Natural Gas, a division of Chevron U.S.A. Inc.	1
41	CNX Gas Company LLC	8,565
42	Colonial Energy, Inc.	11,481
43	Columbia Gas of Kentucky, Inc.	(18,557)
44	Columbia Gas Of Maryland, Inc.	(583)
45	Columbia Gas of Ohio, Inc.	296,572
46	Columbia Gas Of Pennsylvania, Inc.	(4,705)
47	Columbia Gas of Virginia, Inc.	37
48	Columbia Gas Transmission, LLC	187,507
49	Columbia Gulf Transmission, LLC	(8,737)
50	Constellation Energy Generation, LLC	12,504
51	Core Appalachia Midstream LLC	(379)
52	Cranberry Pipeline Corporation	(6,412)
53	Cumberland Gas Marketing Co.	(421)
54	Cumberland Valley Resources, LLC	(260)
55	Direct Energy Business Marketing, LLC	(5,068)
56	Diversified Energy Marketing LLC	41,388
57	Diversified Midstream, LLC	7,100
58	Diversified Production LLC	141
59	Dominion Cove Point LNG, LP	75,359
60	East Kentucky Midstream, L.L.C.	18,538
61	Eastern Energy Field Services Inc.	(8,256)
62	Eco-Energy Natural Gas, LLC	(3,050)
63	EDF Trading North America, LLC	2,016
64	Enhanced Energy Services of America, LLC	(40)
65	EQT Energy, LLC	69
66	eServices Energy Management LLC	(553)
67	Greylock Marketing, LLC	(17,959)
68	Hilcorp Energy I, L.P.	3,157
69	IDT Energy, Inc.	2
70	Infinite Energy, Inc.	3,588

COLUMBIA GAS TRANSMISSION, LLC
DETAIL OF PRIOR PERIOD RAM ADJUSTMENTS
JANUARY 2022 THROUGH DECEMBER 2022

LINE NO.	CUSTOMER NAME	NET Dth ADJUSTMENT (1)
71	Interstate Gas Supply, Inc.	(23,583)
72	J. D. Drilling Company	9
73	Jefferson Gas, LLC	(807)
74	Johnson County Gas Company, Inc.	7
75	Just Energy Solutions Inc.	(1)
76	K.I.D.N. Marketing, Ltd.	(536)
77	Kaiser Marketing Appalachian, LLC	(286)
78	Kentucky United Energy, LLC	(6,369)
79	KNG Energy, Inc.	37
80	KO Transmission Company	(9,251)
81	Macquarie Energy LLC	2,750
82	Mercuria Energy America, LLC	444
83	Mid-Atlantic Energy LLC	122
84	MIECO LLC	(1,418)
85	Millennium Pipeline Company, L.L.C.	(108)
86	Mirabito Natural Gas, LLC	30
87	Mountaineer Gas Company	(12,479)
88	New York State Electric & Gas Corporation	167
89	NextEra Energy Marketing, LLC	(6)
90	NJR Energy Services Company	256
91	North American Power and Gas, LLC	(1,150)
92	Northeast Ohio Natural Gas Corp.	(490)
93	Pacific Summit Energy LLC	100
94	Palmco Energy OH LLC	(2)
95	Peninsula Energy Services Company, Inc.	(10)
96	Physical Storage Activity	147,731
97	Range Resources - Appalachia, LLC	(868)
98	Riley Natural Gas Company	(2,531)
99	Sequent Energy Management LLC	(7,968)
100	Snyder Armclar Gas Company, L.P.	2,487
101	Snyder Brothers, Inc.	(30,659)
102	South Jersey Resources Group, LLC	4,706
103	Southern Energy L.L.C.	634
104	SouthStar Energy Services LLC	(67)
105	Spotlight Energy, LLC	(7)
106	Sprague Operating Resources LLC	(115)
107	Stand Energy Corporation	2,967
108	SWN Energy Services Company, LLC	(137)
109	Symmetry Energy Solutions, LLC.	(24,392)
110	Texas Eastern Transmission, LP	2,492

COLUMBIA GAS TRANSMISSION, LLC
DETAIL OF PRIOR PERIOD RAM ADJUSTMENTS
JANUARY 2022 THROUGH DECEMBER 2022

LINE NO.	CUSTOMER NAME	NET Dth ADJUSTMENT (1)
111	Twin Eagle Resource Management, LLC	(4,141)
112	UGI Energy Services, LLC	(2,059)
113	United Energy	(7)
114	UNITED ENERGY TRADING, LLC	5
115	Vineyard Oil & Gas Company	11
116	Vitol Inc.	(87,698)
117	Volunteer Energy Services, Inc.	4,589
118	Washington Gas Light Company	7,346
119	XOOM Energy Ohio, LLC	(3)
120	TOTAL PRIOR PERIOD VOLUME ADJUSTMENTS	<u>521,725</u>
121	LESS 1/	
122	TOTAL GAS ADJUSTMENTS	11,125
123	TOTAL PRIOR RETAINED ADJUSTMENTS	(636)
124	TOTAL VOLUME ADJUSTMENTS (Lines 8,18, Appendix B, Page 3, Priors)	<u>511,236</u>
125	<u>PRIOR PERIOD VOLUME OBA ADJUSTMENTS WITH AFFILIATES</u>	
126	Columbia Gulf Transmission, LLC	(8,737)
127	Millennium Pipeline Company, L.L.C.	(108)

1/ Adjustments to gas used or retainage are offset in unaccounted for.

Attachment A

Clean Tariff Records

*Columbia Gas Transmission, LLC
FERC Gas Tariff, Fourth Revised Volume No. 1*

Tariff Sections

V.17 Currently Effective Rates, Retainage Rates

Version

16.0.0

RETAINAGE PERCENTAGES

Transportation Retainage	2.132%
Transportation Retainage – FT-C 1/	0.763%
Gathering Retainage	0.763%
Storage Gas Loss Retainage	0.405%
Ohio Storage Gas Loss Retainage	0.559%
Columbia Processing Retainage 2/	0.000%

1/ Retainage percentage applicable to service under Rate Schedule FT-C (Firm Transportation Service – Commonwealth).

2/ The Columbia Processing Retainage shall be assessed separately from the processing retainage applicable to third party processing plants set forth in Section 25.3 (f) of the General Terms and Conditions.

Attachment B

Marked Tariff Records

*Columbia Gas Transmission, LLC
FERC Gas Tariff, Fourth Revised Volume No. 1*

Tariff Sections

V.17 Currently Effective Rates, Retainage Rates

Version

16.0.0

RETAINAGE PERCENTAGES

Transportation Retainage	1.831 <u>2.132</u> %
Transportation Retainage – FT-C 1/	0.423 <u>0.763</u> %
Gathering Retainage	0.423 <u>0.763</u> %
Storage Gas Loss Retainage	0.436 <u>0.405</u> %
Ohio Storage Gas Loss Retainage	0.450 <u>0.559</u> %
Columbia Processing Retainage 2/	0.000%

1/ Retainage percentage applicable to service under Rate Schedule FT-C (Firm Transportation Service – Commonwealth).

2/ The Columbia Processing Retainage shall be assessed separately from the processing retainage applicable to third party processing plants set forth in Section 25.3 (f) of the General Terms and Conditions.