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Rate of Return and Capital Structure Christopher C. Walters MoPSC Staff Surrebuttal Testimony WR-2023-0006 July 21, 2023

MISSOURI PUBLIC SERVICE COMMISSION

FINANCIAL AND BUSINESS ANALYSIS

FINANCIAL ANALYSIS DEPARTMENT

SURREBUTTAL TESTIMONY

OF

CHRISTOPHER C. WALTERS

CONFLUENCE RIVERS UTILITY OPERATING COMPANY, INC.

CASE NO. WR-2023-0006

Jefferson City, Missouri July 2023

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1	SURREBUTTAL TESTIMONY OF
2	CHRISTOPHER C. WALTERS
3	CONFLUENCE RIVERS UTILITY OPERATING COMPANY, INC.
4	CASE NO. WR-2023-0006
5	I. <u>INTRODUCTION</u>
6	Q. Please state your name and business address.
7	A. My name is Christopher C. Walters. My business address is 16690 Swingley
8	Ridge Road, Suite 140, Chesterfield, MO 63017.
9	Q. Are you the same Christopher C. Walters who previously filed Rebuttal
10	Testimony in this proceeding on June 29, 2023?
11	A. Yes. I filed Rebuttal Testimony on June 29, 2023 on behalf of the Staff of the
12	Missouri Public Service Commission ("Commission").
13	Q. What is the purpose of your Surrebuttal Testimony?
14	A. The purpose of my Surrebuttal Testimony is to address the various
15	concerns and criticisms offered in the Rebuttal Testimony of Confluence witness
16	Mr. Dylan D'Ascendis.
17	My silence on any issue raised by Confluence, or any other party, should not be
18	considered as tacit agreement with Confluence on that issue.
19	II. <u>RESPONSE TO MR. D'ASCENDIS</u>
20	Q. Please describe Mr. D'Ascendis' concerns with your Proxy Group.
21	A. Mr. D'Ascendis disagrees with my inclusion of gas utilities in the proxy group
22	because water and wastewater utilities have "specific risks not borne by gas or electric

Q.

companies."¹ He makes reference to the Safe Drinking Water Act, monitoring of water supply 1 levels by the Environmental Protection Agency and government bodies, as well as the level of 3 capital intensity by comparing how many dollars of net plant is required to generate one dollar of revenue, as well as average depreciation rates, between water, gas, and electric utilities.² 4

5

Please respond.

6 A. I can appreciate Mr. D'Ascendis' comparative analysis. However, I disagree 7 with his conclusion. First, while he acknowledges cherry-picked risk factors specific to 8 water utilities, he does not take into consideration any specific risks borne by gas or 9 electric utilities. The market has already taken those risks into consideration. For example, a 10 comparison of betas for water and gas utilities provided in my Exhibit CCW-14 filed with my 11 Direct Testimony shows that the average and median water utility betas are 0.80 and 0.775, 12 respectively. The average and median gas utility betas are 0.886 and 0.85, respectively. In 13 addition, a comparison of the water and gas proxy companies' credit ratings show that water 14 utilities are generally rated higher than gas utilities.

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In addition, water utilities are, generally, thinly traded and covered by fewer analysts relative to gas or electric utilities. Including gas utility companies in a proxy group for water utility rate cases is used by rate of return experts on the utility side³ and the intervenor side.⁴

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Q. Please describe Mr. D'Ascendis' concerns with your discounted cash flow ("DCF") analysis.

¹See Mr. D'Ascendis' Rebuttal Testimony at page 10, line 8.

²*Ibid*.at 11-12, Chart 1 and Chart 2.

³See Indiana Utility Regulatory Commission, Cause No. 45870, Indiana-American Water Company, Inc., Petitioner's Exhibit No. 7, pages 27-29.

⁴See Arkansas Public Service Commission, Docket No. 22-064-U, Direct Testimony of Christopher C. Walters at page 29; Missouri Public Service Commission, Case No. WR-2017-0285, Direct Testimony of Michael P. Gorman at pages 14-15.

1	A. First, he takes issue with my use of a multi-stage DCF model. Second, he takes
2	issue with the constant growth DCF based on the sustainable growth methodology. Finally, he
3	takes issue with the fact that, while I rely on a significant amount of data from Value Line in a
4	plethora of analyses, I did not rely on Value Line as a source of projected growth rates.
5	Q. Please respond to Mr. D'Ascendis' concern regarding your use of a projected
6	gross domestic product ("GDP") growth rate in your multi-stage DCF analysis.
7	A. As a matter of principle, no company's earnings and/or dividends can grow
8	faster than the economy in which it sells goods and services into perpetuity. In the long run,
9	earnings growth will be limited by several factors, including, but not limited to, competition
10	and market saturation. Mr. D'Ascendis' conclusion that GDP growth is not an upper limit
11	for company and industry growth defies the economic and financial literature of which I am
12	aware. In addition to the texts cited in my Direct Testimony in support of the premise that GDP
13	is a long-term cap on growth, I would like to refer Mr. D'Ascendis to the following excerpts.
14	First, as detailed in the Chartered Financial Analyst ("CFA") Institute's curriculum:
15 16 17 18 19 20 21	For earnings growth to exceed GDP growth, the ratio of corporate profits to GDP must trend upward over time. It should be clear that the share of profits in GDP cannot rise forever. At some point, stagnant labor income would make workers unwilling to work and would also undermine demand, making further profit growth unsustainable. <i>Thus, in the long run, real earnings growth cannot exceed the growth rate of potential GDP</i> . ⁵ (Emphasis added.)
22	Additionally, Dr. Morin details in his book, New Regulatory Finance, as follows:
23 24 25	It is useful to remember that eventually all company growth rates, especially utility services growth rates, converge to a level consistent with the growth rate of the aggregate economy.
26	* * *

⁵See CFA Program Curriculum, 2014 Level II Vol.1, "Ethical and Professional Standards, Quantitative Methods, and Economics" Reading 15 – Economic Growth and the Investment Decision, pages 608-609.

1 2 3	[] it is quite possible that a company's dividends can grow faster than the general economy for five years, <i>but it is quite implausible for such growth to continue into perpetuity</i> . ⁶ (Emphasis added.)
4	Thus, my use of projected GDP growth as an upper limit for company or industry growth is
5	wholly defensible, regardless of it not being a market measure. Mr. D'Ascendis has provided
6	no substantive evidence to refute the findings of the academic and practitioner texts cited here
7	and in my Direct Testimony on the matter. As such, Mr. D'Ascendis' concerns should
8	be ignored.
9	Q. Please respond to Mr. D'Ascendis' concern regarding your lack of reliance on
10	Value Line growth rate projections.
11	A. Mr. D'Ascendis' assertion that I failed to include projected earnings
12	growth rates from <i>Value Line</i> should be ignored. I relied on a significant amount of three (3)
13	to five (5) year projected data from Value Line in my DCF analyses. The entire set of projected
14	data in my Exhibits CCW-6 and CCW-7 come from Value Line projections. The results were
15	certainly considered in my recommended return on equity ("ROE") based on the DCF results.
16	Q. Speaking of the sustainable growth DCF analysis presented on those
17	two exhibits, did Mr. D'Ascendis also take issue with that analysis?
18	A. Yes, he did. Specifically, he takes issue with the assumption that
19	future earnings growth is inversely related to the dividend payout ratio. He cites studies
20	performed by Zhou and Ruland (2006) and Gwilym, et al. (2006), both of which cite the
21	Arnott and Asness (2003) study, in support of his argument. ⁷
22	Q. Please respond.

⁶See Roger A. Morin, New Regulatory Finance, pages 308-309. ⁷See Mr. D'Ascendis' Rebuttal Testimony at page 20, line 7.

A. As an initial matter, no one model is perfect, and at times can be more or
less accurate than other models depending on various factors, such as economic conditions. As
Mr. D'Ascendis states in his Direct Testimony, "the use of multiple generally accepted common
equity cost rate models also adds reliability and accuracy when arriving at a recommended
common equity cost rate." ⁸ I agree, using multiple methods provides a more comprehensive,
and therefore, more reliable perspective on investors' return requirements. For this reason
alone, it is important to perform a thorough analysis, and apply informed, reasoned judgement
in the interpretation of the results. The use of multiple DCF models and considering those
results is consistent with that approach.
In addition, using the retention growth methodology is a recognized reasonable method
for estimating sustainable dividend growth and should not be ignored.
As noted by the CFA Institute's curriculum text:
We define the sustainable growth rate as the rate of dividend (and earnings) growth that can be sustained for a given level of return on equity, assuming that the capital structure is constant through time and that additional common stock is not issued. The reason for studying this concept is that it can help in estimating the stable growth rate in a Gordon growth model valuation, or the mature growth rate in a multistage DDM in which the Gordon growth formula is used to find the terminal value of the stock.
The expression to calculate the sustainable growth rate is:
$g = b \ge ROE^9$
Notably, the same CFA text observes that, in light of the Arnott and Asness (2003) study cited
by Mr. D'Ascendis, "caution is appropriate in assuming that dividends displace earnings." ¹⁰
However, that same text concludes that "[n]evertheless, the equation can be useful as a simple

⁸See Mr. D'Ascendis' Direct Testimony at page 21, line 15.
⁹See CFA Program Curriculum, 2014, Level II, Volume 4, "Dividend Discount Valuation," at page 264.
¹⁰See CFA Program Curriculum, 2014, Level II, Volume 4, "Dividend Discount Valuation," at pages 265-266.

Q.

expression for approximating the average rate at which dividends can grow over a long 1 2 horizon."¹¹ Further, Brigham and Houston state that, "Companies that retain a high percentage 3 of their earnings rather than paying them out as dividends generate more retained earnings and thus need less external capital."¹² 4

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Please summarize Mr. D'Ascendis' concerns with your risk premium analysis.

Mr. D'Ascendis' primary concerns with my Risk Premium analysis are A. presented on page 53 of his Rebuttal Testimony. First, he takes issue with the time period 8 covered under my study by making reference to the market-to-book ("M/B") discussion in my 9 Direct Testimony. In addition, he argues that my Risk Premium analysis did not take into 10 consideration the inverse relationship between the equity risk premium and interest rates. Mr. D'Ascendis is also concerned with my reliance on current utility bond yields rather than projected utility bond yields.

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Please comment on Mr. D'Ascendis' M/B ratio argument challenging the Q. reliability of your risk premium study.

15 A. The only aspect of an M/B ratio I used in my study was to determine that my study time period included a period when utility stock prices traded at a premium to book value. 16 17 This was used as observable evidence to show that during the observed 30-plus year time 18 period, utilities had access to capital at reasonable terms and prices because they could issue 19 shares above book value. This is a potential indication that the authorized ROEs were perceived 20 as fair compensation by the market based on observable valuations of utility stocks. 21 Conversely, during periods where M/B ratios are below one (1), a utility could not sell stock to

¹¹*Ibid.* at 266.

¹²See Fundamentals of Financial Management, Eugene F. Brigham and Joel F. Houston, Eleventh Edition 2007, Thomson South-Western, a Division of Thomson Corporation at page 558.

the market without diluting the value of existing shareholders. Under those circumstances, 1 2 utilities likely would not choose to sell stock to the market. 3 0. Please respond to Mr. D'Ascendis' assertion that you ignored a known inverse 4 relationship between interest rates and risk premiums. 5 Mr. D'Ascendis is critical of my Risk Premium studies, stating that I ignored an A.

inverse relationship of nominal interest rates and equity risk premiums. This assertion is 6 7 misleading. While I did not rely on a regression analysis to measure a relationship, I used above-average equity risk premiums of 5.93% (Treasury) and 4.53% (Utility).¹³ In other words, 8 9 I relied on an above-average risk premium and a below-average interest rate. This is the very 10 definition of an inverse relationship, and it is incorporated in my analysis. The result of my 11 inverse relationship not being what Mr. D'Ascendis desired does not make it invalid.

12 Q. Please respond to Mr. D'Ascendis' concern that you did not rely on projected 13 utility bond yields in your risk premium analysis.

14 A. Mr. D'Ascendis asserts that a projected A-rated public utility bond yield can be estimated by piecing together forecasts for Aaa-rated corporate bond yields adjusted for 15 recent spreads between A-rated utility bond yields and Aaa-rated corporate bond vields.¹⁴ 16 17 Mr. D'Ascendis has not provided any evidence to suggest that investors or practitioners assume 18 current yield spreads between corporate bond yields and utility bond yields to be constant over 19 the intermediate term. Making such an assumption yields Mr. D'Ascendis' personal forecast 20 for A-rated utility bond yields, not necessarily that of investors.

21

22

Further, I would note that the current Treasury yield at the time of my analysis (3.72%) was nearly identical to the projected Treasury yield (3.70%). In a similar fashion to

¹³See Mr. Walters' Direct Testimony at page 42.¹⁴See Mr. D'Ascendis' Rebuttal Testimony at pages 32-33.

1	Mr. D'Ascendis, assuming the recent yield spread between Treasury yields and A-rated utility
2	bond yields hold, the projected A-rated utility bond yield would be nearly identical to the
3	current bond yield. Mr. D'Ascendis' concerns here are misplaced and should be ignored.
4	Q. Please summarize Mr. D'Ascendis' concerns with your capital asset pricing
5	model ("CAPM") analysis.
6	A. Mr. D'Ascendis expresses four general concerns with my CAPM analysis:
7	(1) I did not consider a long-term projected risk-free rate; (2) my choice and calculation of my
8	market returns are flawed; (3) he disagrees with my use of the Vasicek adjusted and historical
9	betas; and (4) I did not include an empirical CAPM ("ECAPM") analysis.
10	Q. Please respond to Mr. D'Ascendis with regard to his concern you did not rely
11	on the longest available projection for the risk-free rate in your CAPM analysis.
12	A. Relying on long-term projections introduced a much higher risk of forecasting
13	error and bias which could likely lead to an overstatement of the cost of equity than near-term
14	projections. Exhibit CCW-SR-1 illustrates this point. On this exhibit, under Columns 1 and 2,
15	I show the actual market yield for Treasury bonds at the time a projection is made, and the
16	corresponding projection for Treasury bond yields six quarters into the future, respectively.
17	As shown in Columns 1 and 2, over the last several years, Treasury yields were
18	projected to increase relative to the actual Treasury yields at the time of the projection. In
19	Column 4, I show what the Treasury yield actually turned out to be six quarters after the
20	forecast. In Column 5, I show the actual yield change at the time of the projections relative to
21	the projected yield change.
22	As shown in this exhibit, economists have over-projected bond vields by an average of

As shown in this exhibit, economists have over-projected bond yields by an average of 70 basis points (0.70%) in forecasts that are six quarters into the future. Relying on a much longer forecasted interest rate would introduce a greater chance of forecasting error and very

likely overstate the indicated cost of equity estimate as a result. For these reasons,
 Mr. D'Ascendis' concern should be ignored.

Q. Please respond to Mr. D'Ascendis' assertion that you violated the
efficient-market hypothesis ("EMH") by not incorporating the longest available projected
risk-free rate.

A. Mr. D'Ascendis' assertion is misplaced and inconsistent with his own
testimony. Under the semi-strong form of the EMH, which Mr. D'Ascendis is asserting, it
is assumed securities prices reflect all publicly available information and past market data.
Because Blue Chip¹⁵ is a paid subscription, not all investors necessarily have access to the data
and, therefore, it would be hard to classify the projections offered by Blue Chip as public, a
classification that is required under the semi-strong form of EMH.

Further, to the extent Mr. D'Ascendis failed to include all publicly available data, both historical and projected, he too violated the EMH. In addition, because he did not consider the historical return on the market, or historical market risk premium as part of his CAPM analysis, he has further violated the EMH and overstated the required return on equity for the Company. Therefore, Mr. D'Ascendis' assertion that I violated the EMH is contradictory to his own testimony and analysis.

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Q. Do you have any general comments in response to Mr. D'Ascendis with regard to the methods used to calculate the expected market return, and ultimately, the expected market risk premium?

¹⁵Blue Chip is a paid subscription service that publishes its *Financial Forecasts* and *Economic Indicators* reports. The projections offered in those reports are generally based on the responses of business executives, financial institutions, and academics to surveys sent out by Blue Chip.

Yes. Regardless of the method used to calculate the expected market return. 1 A. 2 they all produce expected market risk premiums in the range of 6.00% to 8.00%. These 3 estimates of the market risk premium are fully supported by financial texts and empirical 4 research. For example, Dr. Morin notes several studies of the market risk premium in his 5 book, Modern Regulatory Finance, have concluded that a market risk premium in the range of 5.0% to 8.0% is a reasonable estimate for the United States.¹⁶ For example, the Duarte 6 7 and Rosa study he cites, concludes that it is "quite difficult to improve upon when considering out-of-sample performance measures."¹⁷ Dr. Morin also notes that a survey 8 9 of professional practices showed that 71% of textbooks/tradebooks used a historical 10 average as the market risk premium, and 60% of financial advisors used a market risk premium in the range of 7.0% to 7.4%, or a long-term arithmetic average.¹⁸ My market risk 11 12 premiums, regardless of the method used to calculate the expected market return 13 component, are supported by substantial empirical evidence. Mr. D'Ascendis' concerns 14 should be ignored.

15

16

Please respond to Mr. D'Ascendis with regard to his concerns about your use of Q. the "Historical Average Estimate" to calculate the expected market return.

Mr. D'Ascendis' concerns with the "historical average estimate" based on 17 A. 18 the historical real return on the market plus projected inflation are also misplaced. With 19 regard to relying on historical estimates of the market risk premium, Dr. Morin states in his 20 book, New Regulatory Finance:

¹⁶Dr. Morin references studies by Duarte & Rosa; Professors Ross, Westerfield, and Jordan; Mahera; and Brealey, Myers, and Allen. See Modern Regulatory Finance, Dr. Roger Morin, at pages 190-192.

¹⁷See Modern Regulatory Finance, Dr. Roger Morin, at page 191, citing the Duarte and Rosa study.

¹⁸See Modern Regulatory Finance, Dr. Roger Morin, at 190, footnote 35.

1	"Although realized returns for a particular time-period can deviate substantially from
2	what was expected, it is reasonable to believe that long-run average realized returns provide an
3	unbiased estimate of what were expected returns. This is the fundamental rationale behind the
4	historical risk premium approach. Analysts and regulators often assume that the average
5	historical risk premium over long periods is the best proxy for the future risk premium." ¹⁹
6	Dr. Morin concludes that "[t]here are two broad approaches to estimating the risk
7	premium: retrospective and prospective. Each has its own strengths and weaknesses, hence
8	the need to utilize both methods." ²⁰ For these reasons, I conclude that my reliance on multiple
9	estimates of the market risk premium is balanced and reasonable.
10	Q. Please respond to Mr. D'Ascendis with regard to your use of Vasicek betas from
11	S&P Capital IQ.
12	A. S&P Capital IQ is one of the most cited sources of financial data and other
13	relevant utility industry information by rate of return witnesses in cost of capital testimony
14	throughout the country. Further, S&P Capital IQ is one of the most recognized names in
15	finance. Investors rely on data from S&P Capital IQ, particularly in the utility sector, to inform
16	their investment making decisions.
17	Q. Is there financial literature discussing the Vasicek method of adjusting beta in
18	comparison to the Blume method employed by Value Line?
19	A. Yes. In an article titled "An Examination of Blume and Vasicek Betas"
20	published in the journal The Financial Review, Martin Lally discusses the merits of
21	both methods of adjusting beta. An observation made by Lally as it relates to the utility
22	industry is as follows:

¹⁹Morin, Dr. Roger A., "New Regulatory Finance," at page 156. ²⁰*Ibid.* at page 162.

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1 2	A dramatic example of this is in U.S. electric utilities. A typical such firm has an estimated beta (unadjusted) of around 0.4 (Value Line, 1993). By
3	virtue of being typical, the Vasicek estimate, with prior corresponding to this industry will also be 0.4 . By contrast, Plume adjusts the 0.4 to 0.6 i.e. 0.32
4 5	+ 0.67(0.4) The result is a dramatic overestimate by Blume because a
6	singularly relevant fact is ignored, i.e., membership of an industry whose
7	average estimated, and therefore presumably also true, beta is well below one.
8	Given that these firms have output prices that are set so as to recover costs,
9	including the cost of equity, and they have substantial equity investment, then
10 11	the implications of using Blume betas (i.e., not partitioning into industries) for measuring costs of equity are particularly severe ²¹
11	tor measuring costs of equity are particularly severe.
12	Mr. D'Ascendis' concerns with Vasicek-adjusted betas should be disregarded.
13	Q. Please respond to Mr. D'Ascendis with regard to you not performing an
14	ECAPM analysis.
15	A. Mr. D'Ascendis simply states that my CAPM methodology is flawed because,
16	among other reasons, I did not perform an ECAPM analysis. ²² I explained in detail why I
17	disagree with the use of an ECAPM, particularly with an adjusted beta, in my Rebuttal
18	Testimony. Mr. D'Ascendis has offered nothing substantive to alter my opinion on the matter.
19	Q. Is it necessary to perform an ECAPM at this time?
20	A. No, as I explain in my Rebuttal Testimony, the purpose of the adjustments
21	presented in the ECAPM is to raise the intercept and flatten the security market line ("SML").
22	The applications of the "traditional" CAPM offered by the witnesses in this proceeding are
23	anything but "traditional" given the extensive use of projected long-term yields and adjusted
24	betas, both of which raise the intercept and flatten the SML.
25	For example, the use of a projected 30-year Treasury yield is a departure from the
26	traditional CAPM in two regards. First, projected yields as those employed by the witnesses in

²¹See The Financial Review, Vol. 33 (1998) at pages 183-198, "An Examination of Blume and Vasicek Betas," Martin Lally. (emphasis added) ²²D'Ascendis Rebuttal at 35, line 14.

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2 the CAPM. Second, long-term yields, as employed by the witnesses in this proceeding, are 3 generally higher than short-term yields, which were used in the traditional form of the CAPM. Each of these revised inputs accomplishes a key goal of the ECAPM by raising the intercept 4 5 and flattening the slope of the SML. Further, as I demonstrated in my Direct Testimony, the 6 use of an adjusted beta as published by Value Line also raises the intercept and flattens the slope of the SML. As such, the application of the "traditional" CAPM in this proceeding has 7 8 accomplished the goal of the ECAPM by implementing several inputs that raise the intercept 9 and flatten the SML. Specifically, I am referring to forecasted long-term Treasury yields being 10 used in favor of short-term spot yields and adjusted betas. Therefore, I maintain my position 11 on the ECAPM. Q. Mr. D'Ascendis takes issue with your failure to adjust your recommendation 12 13 upward to account for size. Does his Rebuttal Testimony change your position on the matter? 14 A. No. I continue to maintain my conclusion that a size adjustment is unnecessary. 15 Furthermore, there is empirical evidence which concludes that, while size premiums are 16 present in industrial companies, such a size premium is not present in utility companies, nor

indicate my endorsement of that position.

are they appropriate to include in valuing utilities.²³ The size adjustment, as proposed by

My silence with regard to any position taken by any party in this proceeding does not

this proceeding are generally higher than spot yields which were used in the traditional form of

21 22 Q. Does this conclude your Surrebuttal Testimony?

Mr. D'Ascendis, is not appropriate and should be denied.

A. Yes, it does.

²³ Wong, Annie, 1993, Utility stocks and the size effect: An empirical analysis, Journal of the Midwest Finance Association, 95-101.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

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In the Matter of Confluence Rivers Utility Operating Company, Inc.'s Request for Authority to Implement a General Rate Increase for Water Service and Sewer Service Provided in Missouri Service Areas

Case No. WR-2023-0006

AFFIDAVIT OF CHRISTOPHER C. WALTERS

STATE OF MISSOURI) SS. COUNTY OF ST. LOUIS

COMES NOW CHRISTOPHER C. WALTERS and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing Surrebuttal Testimony of Christopher C. Walters; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

CHRISTOPHER C. WALTERS

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of St. Louis, State of Missouri, at my office in Chesterfield, on this 17th day of July 2023.

MARIA E. DECKER Notary Public - Notary Se STATE OF MISSOURI St. Louis City mission Expires: May 5, 2025 Commission # 13706793

Maria E. Duffer Notary Public