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MISSOURI PUBLIC SERVICE COMMISSION

UTILITY SERVICES DIVISION

SURREBUTTAL TESTIMONY

OF

DAVID MURRAY

MISSOURI-AMERICAN WATER COMPANY

CASE NO. WR-2010-0131

Jefferson City, Missouri
May 2010

****Denotes Highly Confidential Information****

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1 **SURREBUTTAL TESTIMONY**

2 **OF**

3 **DAVID MURRAY**

4 **MISSOURI-AMERICAN WATER COMPANY**

5 **CASE NO. WR-2010-0131**

6 Q. Please state your name.

7 A. My name is David Murray.

8 Q. Are you the same David Murray who previously prepared and caused to be
9 filed in Case No. WR-2010-0131 the Rate of Return (ROR) Section of the
10 Staff's Cost of Service Report and Rebuttal Testimony related to rate of return?

11 A. Yes, I am.

12 Q. What is the purpose of your Surrebuttal Testimony?

13 A. The purpose of my Surrebuttal Testimony is to respond to the
14 Rebuttal Testimonies of Missouri American Water Company (Company, or MAWC)
15 witnesses Pauline M. Ahern and Michi Q. Chao. Ms. Ahern sponsored rate-of-return (ROR)
16 Direct and Rebuttal Testimony in this case dealing mainly with cost of common equity, but
17 also which briefly addressed capital structure. Ms. Chao sponsored
18 Direct and Rebuttal Testimony on capital structure issues.

19 **EXECUTIVE SUMMARY**

20 Q. Please provide an executive summary of your Surrebuttal Testimony.

21 A. I will address Ms. Chao's defense of the use of MAWC's capital structure for
22 ratemaking purposes in this case. I will discuss the concern I have about the logic underlying

1 American Water Works Company, Inc. (American Water or AWW) debt assignment process
2 for the debt capital provided to MAWC. I will also provide an example of the incentive
3 American Water has to invest debt proceeds it raises at American Water Capital Corporation
4 (AWCC) as equity in MAWC rather than through a direct pass-through of loan proceeds to
5 MAWC through an internal loan contract. Commission Staff (Staff) believes that this
6 information, along with other information and concerns contained in Staff's previous
7 testimony filed in this case, demonstrates the appropriateness of using American Water's
8 consolidated capital structure for ratemaking purposes in this case.

9 I will also address Ms. Ahern's criticisms of my decision to supplement my
10 constant-growth DCF analysis with that of a multi-stage DCF analysis. While I agree that a
11 constant-growth DCF using reasonable growth inputs can provide a reliable cost of equity
12 estimate for a water utility company, this is not true when a witness, such as Ms. Ahern, relies
13 entirely on equity analysts' 5-year EPS growth rates as a constant growth rate that is
14 presumed to continue in perpetuity. Staff has demonstrated and continues to believe that
15 investment analysts do not make this assumption when valuing utility stocks in general and
16 water utility stocks specifically. Staff considers it acceptable to rely on current 5-year EPS
17 growth forecasts in a DCF analysis as long as these growth rates are appropriately limited to a
18 5-year period since this is the very time frame they are intended to address. Consequently,
19 Staff decided to use a multi-stage DCF analysis to address this assumption and to capture
20 more representative growth rates for periods greater than five years out.

21 I will also address some of Ms. Ahern's more standard criticisms of Staff's cost of
22 common equity methodology, such as giving preference to the DCF methodology for
23 estimating the cost of equity, the use of current risk-free rates versus projected rates, the

1 appropriateness of expected market returns for a risk premium analysis and the
2 reasonableness of time horizons used to estimate broader market returns.

3 **RESPONSE TO MS. CHAO'S REBUTTAL TESTIMONY**

4 Q. Ms. Chao makes a fairly definitive statement in her Rebuttal Testimony that
5 the use of MAWC's capital structure is appropriate because it acknowledges that
6 "actual dollars that are financing MAWC's jurisdictional rate base to which the rate of return
7 authorized in this proceeding will be applied." What basis does Ms. Chao provide for
8 her statement?

9 A. I am not sure, but apparently Ms. Chao believes that because MAWC has a
10 separate internal balance sheet (not publicly available through American Water's SEC
11 Filings) and internal loan and equity infusion documentation that shows how capital was
12 provided to MAWC, this documentation should be considered proof that MAWC's capital
13 structure represents the actual dollars supporting MAWC's rate base.

14 Over the past several MAWC rate cases and through the course of this case, Staff has
15 gained a deeper understanding of how American Water finances its subsidiaries, which causes
16 Staff to question the veracity of such a statement. However, Staff notes that it is very difficult
17 to ascertain the actual flow of capital funds into and out of MAWC because MAWC does not
18 have a separate cash flow statement and does not file financial statements with the
19 Securities Exchange Commission (SEC) to allow public investors to gain a better
20 understanding of MAWC's financial condition. This is distinctly different from many of
21 Missouri's other regulated utilities that are part of a holding company structure.
22 Union Electric Company, d/b/a Ameren UE (AmerenUE), Laclede Gas Company and
23 Kansas City Power & Light Company all file stand-alone financial statements with the SEC.

1 However, Staff believes enough can be gleaned from the information available on
2 American Water and AWCC through both American Water’s SEC 10-K Filing and MAWC’s
3 response to Staff Data Request No. 0104, which provides information on the various debt
4 issuances made by AWCC and in turn loans to various affiliates, to cast doubt as to the
5 confidence, or lack thereof, that should be placed in the independence of MAWC’s
6 capital structure.

7 Q. Why do you believe the Commission should question whether MAWC’s
8 internal financial statements accurately represent “actual dollars that are financing MAWC’s
9 jurisdictional rate base”?

10 A. A good example of the uncertainty surrounding MAWC’s capital structure and
11 whether the dollars associated with that capital structure is separate and distinct is the fact that
12 AWCC issued ** _____ **, apparently with two different
13 terms and two different costs. The difference in cost between these debt issues is
14 approximately ** _ ** basis points with the longer-term and higher-cost issue assigned to
15 MAWC’s capital structure and debt costs. Staff could understand the higher-cost, longer-term
16 bond being assigned to MAWC if the current debt maturities associated with MAWC were
17 shorter-term in nature, but the nearest maturity was approximately 8 years later than the
18 lower-cost, shorter-term debt that could have been assigned to MAWC. Although MAWC
19 already had two bonds maturing within 3 years of the longer-term, higher-cost bond, this bond
20 was still assigned to MAWC.

21 Because this process appears to be quite subjective, Staff does not consider it to be
22 market-driven based on analysis of MAWC’s capital structure and debt maturities, which

1 supports Staff's position that MAWC is not managed independently from a
2 financial perspective.

3 Q. Does American Water hold debt that could have been loaned to MAWC rather
4 than invested as equity?

5 A. Yes. American Water holds approximately \$1.2 billion of debt. Because
6 American Water infuses equity into its subsidiaries through the use of these funds,
7 American Water makes a conscious decision to infuse these funds as equity investments
8 rather than loan them to its subsidiaries.

9 Q. Do the debt funds received by American Water come from the same pool of
10 debt funds received by American Water's subsidiaries?

11 A. Yes. For example, AWCC loaned American Water ** _____ ** from
12 a ** ____ ** percent debt issuance, most likely for purposes of equity infusions into its
13 subsidiaries, and at the same time loaned MAWC ** _____ ** from the same
14 debt issuance.

15 Q. Has American Water recently made equity infusions into MAWC?

16 A. Yes. Based on representations made by MAWC, Staff understands that
17 MAWC has recently received \$30,000,000 in equity infusions (\$15 million in March and
18 \$15 million in April).

19 Q. Could these funds have been provided to MAWC through a loan directly from
20 AWCC rather than being loaned to American Water and then infused as equity?

21 A. Yes.

22 Q. What would have been the cost of the funds to MAWC if they had been loaned
23 as debt rather than infused as equity by the parent company?

1 A. Because Staff has not reviewed the most recent debt issuances made by
2 AWCC, Staff cannot identify these costs with certainty, but because AWCC was able to
3 issued debt in the 6 to 7 percent range during the summer of 2009, Staff would imagine that
4 the cost would have been in this range.

5 Q. Because American Water chose to make equity infusions rather than loan these
6 funds to MAWC as debt, what impact does this have on the revenue requirement in this case?

7 A. This will depend on the authorized ROE in this case, but if the \$30,000,000
8 were loaned to MAWC at a cost of 6.5 percent, the revenue requirement for this amount
9 would be \$1,950,000 based only on interest costs. If the \$30,000,000 is treated as equity and
10 has an updated cost of 11.35 percent as estimated by Ms. Ahern, the revenue requirement for
11 this amount would be \$5,531,457 ($.1135 \times \$30,000,000 \times 1.62308$).

12 Q. Why is there such a large difference in the revenue requirement based on these
13 two scenarios?

14 A. First, the requested cost of equity is much higher than the cost of debt.
15 Second, because equity is factored up for taxes, this adds an additional amount to the
16 revenue requirement.

17 Q. What would the revenue requirement be for the \$30,000,000 if it had the cost
18 of equity you estimated?

19 A. \$4,504,047 ($.0925 \times \$30,000,000 \times 1.062308$).

20 Q. MAWC maintains that it needs to make these equity infusions to maintain a
21 balanced capital structure. How do you respond?

22 A Because it is American Water that actually issues equity, it is American Water
23 that needs to maintain a balanced capital structure in order to be able to attract capital at a

1 reasonable cost. There does not appear to be any logical reason why this capital structure
2 should be significantly different than that of MAWC from a capital attraction perspective.
3 Staff cannot determine any conceivable reason, other than to produce a higher revenue
4 requirement, as to why American Water's subsidiaries' capital structures could not receive
5 debt capital from AWCC rather than equity capital from American Water. This would result
6 in the subsidiaries' capital structures being consistent with the consolidated parent company
7 capital structure. The subsidiaries' capital structures would then be at the same optimal level
8 as deemed appropriate for the utility operations from the parent company's perspective.

9 Q. Did you provide any information in your Rebuttal Testimony that supports
10 your position that the cost of equity would be lower if the Commission were to adopt
11 MAWC's less leveraged capital structure rather than American Water's more leveraged
12 capital structure?

13 A. Yes. I provided information from an asset impairment study American Water
14 is required to perform every year in order to determine if the carrying value of its assets must
15 be adjusted for purposes of financial reporting. In this asset impairment study,

16 ** _____
17 _____
18 _____
19 _____ **

20 Q. If American Water had a less leveraged capital structure, is it possible that it
21 would have a better credit rating?

22 A. Yes.

1 Q. Would your recommended cost of common equity have been lower if
2 American Water had a better credit rating?

3 A. Yes. I made a 30 basis point upward adjustment to my proxy group cost of
4 common equity estimate because of the lower credit rating associated with American Water's
5 more leveraged capital structure.

6 Q. Are you suggesting the Commission should adopt MAWC's capital structure
7 for ratemaking purposes in this case?

8 A. No. I am just providing this information to allow it to evaluate the
9 reasonableness of an allowed ROE if it adopted MAWC's capital structure rather than
10 American Water's.

11 **RESPONSE TO MS. AHERN'S REBUTTAL TESTIMONY**

12 Q. Beginning on page 3, line 3, through page 6, line 3, of her Rebuttal Testimony,
13 Ms. Ahern discusses why she believes it is inappropriate to rely on the fact that
14 American Water employs double leverage to recommend the use of American Water's
15 consolidated capital structure for ratemaking purposes. How do you respond?

16 A. As I indicated previously in my response to Ms. Chao's testimony,
17 American Water employs double leverage to create higher equity ratios at its regulated
18 subsidiaries, including MAWC. While I agree with Ms. Ahern that the cost of capital is based
19 on the risk of the investment, I do not agree that American Water is capitalizing its regulated
20 water utility subsidiaries with the amount of leverage they consider optimal. The capital
21 structure that American Water maintains more accurately reflects the cost of capital investors
22 require to invest in regulated water utility operations. Because this is the capital structure that
23 third party investors evaluate when investing in American Water's equity and

1 American Water's debt through AWCC, this is the capital structure that provides a reasonable
2 estimate of the cost of capital to invest in American Water's regulated water utility operations,
3 including MAWC.

4 Q. On page 7, line 7 through page 9, line 31 of her Rebuttal Testimony,
5 Ms. Ahern claims that you should not have relied exclusively on the DCF method to estimate
6 MAWC's cost of common equity. Did you rely exclusively on the DCF model in determining
7 a reasonable recommended ROE in this case?

8 A. No. I performed a CAPM to test the reasonableness of my recommended
9 ROE. I chose not to average my CAPM estimates with my DCF estimate because of the
10 significant decline in equity market returns during the 2008 calendar year, which caused a
11 downward bias to cost of equity estimates when adding these lower risk premiums to lower
12 risk-free rates.

13 Q. In the Staff's Cost of Service Report in this case you indicated that you would
14 update your CAPM analysis when Staff received more recent information from the
15 Ibbotson SBBI *2010 Classic Yearbook*. Have you received this information?

16 A. Yes.

17 Q. If Staff's CAPM analysis is updated, what is the indicated cost of common
18 equity for data through the 2009 calendar year?

19 A. Applying the updated earned return spreads to Staff's estimated risk-free rate
20 of 4.57 percent results in an indicated cost of common equity of 8.85 percent using an
21 estimated risk premium based on historical arithmetic average spreads and an indicated cost
22 of common equity of 7.71 percent using an estimated risk premium based on historical
23 geometric average spreads (see attached Revised Schedule 18).

1 Q. What has happened to the level of long-term risk-free rates since you originally
2 performed your CAPM analysis for the Staff's Cost of Service Report?

3 A. The monthly average increased by approximately 10 basis points. The average
4 30-year Treasury bond yield for the month of April was 4.69 percent. If this is averaged with
5 the previous two months, then the average yield would be 4.65 percent. Consequently,
6 changes in risk-free rates would not have a significant impact on a CAPM cost of equity
7 estimate assuming constant betas and risk premiums.

8 Q. If you had used your original CAPM results either by averaging the results
9 with your DCF estimated cost of common equity or using them in a range similar to
10 Ms. Ahern's approach, what impact would this have had on your recommended cost of
11 common equity?

12 A. It would have been lower.

13 Q. What have you noticed over the last several years about cost of equity
14 estimates using risk premium and CAPM methodologies?

15 A. They are quite sensitive to estimations of the equity risk premium estimate,
16 which has always been the subject of much debate by academicians, investors and public
17 policy makers. This sensitivity reaffirms Staff's confidence in the reliability of estimating the
18 cost of equity using the DCF methodology as compared to alternative methodologies such as
19 those Ms. Ahern used. Ms. Ahern's use of multiple methodologies (two of which rely on her
20 high expected market return estimates) with the same unreasonable inputs does not make her
21 cost of equity estimate more reliable. Staff has provided a significant amount of
22 corroborating evidence that supports the reliability of its estimated cost of common equity
23 using the DCF methodology in this case.

1 Q. Does the DCF methodology incorporate all investors' estimated discount rates?

2 A. Yes. The DCF method, as it is used in utility regulatory proceedings, was
3 derived by Myron J. Gordon and introduced for cost-of-common-equity determinations in
4 1962.¹ The original use of this model was for purposes of valuing cash flows to determine the
5 inherent value of an asset, security and/or enterprise. However, in order to value these cash
6 flows, investors must determine a discount rate they believed is appropriate for the risk
7 associated with the cash flows. Considering this, when the DCF model is used to estimate the
8 discount rate; i.e. cost of common equity, in utility rate case proceedings, if the inputs are
9 reasonable then the estimated cost of common equity will represent the average of all discount
10 rates (whether determined by the CAPM or some other model) investors have used to
11 determine a fair price for the stock. Therefore, a proper application of the DCF indirectly
12 incorporates investors' use of all models for discount rate estimation.

13 Q. Ms. Ahern criticizes your use of a multi-stage DCF analysis because Staff did
14 not use such a methodology in past MAWC cases in which you and other Staff members
15 sponsored ROR testimony. Is Ms. Ahern correct that Staff has not used a multi-stage DCF
16 methodology to estimate the cost of equity in MAWC rate cases in the recent past?

17 A. Yes.

18 Q. Is consistency in the application of methodologies an important consideration
19 when assessing the credibility of estimated costs of equity?

20 A. Yes.

21 Q. Should consistency come at the expense of reliability?

¹ Frank K. Reilly and Keith C. Brown, *Investment Analysis and Portfolio Management*, Fifth Edition, The Dryden Press, 1997, p. 438.

1 A. No. Considering the fact that finance and capital markets are dynamic, it is
2 important for a witness to consistently test whether his or her cost of equity estimation
3 methods are consistent with the theory in which they are based. Additionally, if the witness'
4 costs of common equity are not corroborated by information available in the investment
5 community or by other analyses done for purposes other than recommending an ROE in a rate
6 case, then this should cause one to question if they are "in the ballpark."

7 Q. Is Ms. Ahern correct that some of the factors that you considered for purposes
8 of deciding to supplement your single-stage DCF analysis with a multi-stage DCF analysis
9 were also present in past MAWC rate cases?

10 A. Yes. Although the sustainability of equity analysts' 5-year EPS forecasts was
11 highly suspect in previous MAWC rate cases, Staff attempted to provide a reliable cost of
12 common equity estimate by estimating a constant-growth rate that was below the equity
13 analysts' 5-year EPS forecasts.

14 Q. Did Staff do so again in this case?

15 A. Yes. Staff estimated a constant growth rate that is tempered by considering
16 historical and projected growth rates.

17 Q. Why did Staff decide to supplement its analysis in this case with a multi-stage
18 DCF estimate?

19 A. Because Staff has gained more knowledge about the water utility industry and
20 the investment communities' views of the water utility industry, which lead Staff to conclude
21 that investors do not use equity analysts' 5-year EPS growth rates for purposes of a
22 sustainable, perpetual growth rate in a multi-stage DCF analysis, or a single-stage constant
23 growth DCF analysis for that matter.

1 Q. Is Ms. Ahern correct that the water utility industry is a mature industry?

2 A. Yes, but this doesn't mean that publicly-traded utility companies within the
3 industry do not go through cycles that cause variations in equity analysts' projected 5-year
4 EPS growth rates, which according to Ms. Ahern is the growth rate that should be assumed
5 for a single-stage, constant-growth DCF estimate. As Ms. Ahern correctly identifies, the
6 average projected 5-year EPS growth rates for Staff's proxy groups over the last three rate
7 cases has ranged from 7.33 percent to 8.59 percent, an approximate 125 basis point
8 difference. Whereas, Staff's estimated constant growth rate estimate has varied
9 approximately 50 basis points. Although I agree with Ms. Ahern that water utility operations
10 are a mature industry, I do not agree that this translates into the presumption that water utility
11 companies will grow at analysts' projected 5-year EPS growth rates perpetually into the
12 future. Staff's multi-stage DCF analysis correctly considers the 5-year growth rates to be just
13 that - 5-year growth rates - and then assumes a linear transition period from years six through
14 ten and then a perpetual growth rate of 4.50 percent from years eleven through infinity
15 (200 years in Staff's analysis because infinite models are not possible).

16 Q. Has Ms. Ahern done anything "different" from her past MAWC testimonies?

17 A. Yes. Ms. Ahern now includes a natural gas utility proxy group in her
18 estimation of the cost of common equity for water utility companies. However, because I
19 believe her inclusion of this proxy group results in a more accurate and reliable DCF estimate
20 because analysts' 5-year projected EPS growth rates for the natural gas utility industry are
21 more consistent with perpetual growth rates, I am not specifically disputing her decision to do
22 this. I think her decision to add this proxy group has improved the accuracy of her final cost
23 of common equity estimate for water utility operations. If Ms. Ahern had not included this

1 proxy group, her cost of equity estimate for MAWC would have been 12.52 percent compared
2 to her current 11.60 percent estimate.

3 Q. Ms. Ahern criticizes your use of expected nominal GDP growth for the
4 perpetual growth rate in your multi-stage DCF analysis because it does not comport with data
5 from the most recent 10 years from the Bureau of Economic Analysis website. How do
6 you respond?

7 A. I do recognize that the estimation of a perpetual growth rate is not an exact
8 science so there may be periods in which GDP and utility growth are not consistent. In fact, it
9 is generally recognized that utilities will out-perform the broader market during recessionary
10 periods and underperform the broader market during periods of more normal economic
11 growth. Staff provided data in the recent AmerenUE rate case, Case No. ER-2010-0036,
12 which showed that the electric utility industries' average EPS, dividends per share (DPS), and
13 book value per share (BVPS) was approximately half the growth in GDP over the period 1947
14 through 1999. However, because Staff is not aware of any long-term industry growth rate
15 estimates for water utility companies, Staff decided to use the conventional growth rate
16 estimation methodology of assuming a perpetual growth rate based on long-term economic
17 growth.

18 Q. Is there reason to believe that the long-term perpetual growth rate of the water
19 utility industry would be somewhat below that of the broader economy?

20 A. Yes. As of March 31, 2010, the S&P 500 had a dividend yield of
21 approximately 1.87 percent.² This compares to the average dividend yield of my water proxy

² <http://www.standardandpoors.com/prot/servlet/BlobServer?blobheadername3=MDT-Type&blobkey=id&blobcol=urldata&blobheadername1=content-type&blobheadervalue3=UTF-8&blobheadervalue1=application/excel&blobheadername2=Content->

1 group of 3.35 percent and the average dividend yield of the water utility companies provided
2 in the May 2010 AUS Utility Reports of approximately 3.30 percent. Generally, the higher
3 the dividend yield, the less growth in EPS expected from the industry. Considering that the
4 S&P 500 is considered to be a proxy for the broader economy, it would be logical to conclude
5 that the perpetual growth rate for water utility industry may be below the long-term expected
6 economic growth rate.

7 Q. Did you discover any information from equity analysts that provided
8 corroboration for at least the level of your perpetual growth rate for your water utility
9 proxy group?

10 A. Yes. As Staff discussed in Rebuttal Testimony in this case, Staff discovered
11 that equity analysts use perpetual growth rates in the range of 4.0 to 5.0 percent when
12 estimating a fair stock price for American Water and Aqua America. In fact, Goldman Sachs
13 used a single-stage DCF that used a constant growth rate of 5.0 percent. If Staff applied this
14 constant growth rate to its estimated dividend yield of approximately 3.35 percent, this would
15 result in an approximate cost of equity of 8.35 percent.

16 Q. Do you believe the cost of equity for water utility companies could be
17 this low?

18 A. Yes. Although my ROE recommendation was based on a proxy group
19 estimated cost of common equity of 8.65 percent to 9.25 percent, the lower end of a
20 multi-stage DCF estimate would indicate a cost of equity as low as 8.35 percent.
21 Additionally, assuming a 55 percent common equity ratio, the ** __ ** asset impairment
22 study assumed a cost of equity of ** __. ** percent.

1 Q. Ms. Ahern indicates that your use of a current risk-free rate in your application
2 of the CAPM is inappropriate because it is not prospective. Do current bond yields reflect
3 investors' expectations of changes in interest rates in the future?

4 A. Yes. This is the same logic that is used in the DCF methodology for
5 estimating the dividend yield. The expected dividend is applied to recent stock prices to
6 determine the dividend yield. The expected dividend is not applied to expected or predicted
7 stock prices. The current stock prices reflect all known information, which is the premise for
8 the efficient market hypothesis. Current bond yields similarly reflect all known information.

9 Q. Ms. Ahern believes you should have used a prospective equity risk premium
10 estimate such as she used when applying the CAPM. Do you believe a prospective equity risk
11 premium could provide reliable estimates?

12 A. Yes, *assuming* the use of a reasonable expected equity market return.
13 However, estimating expected market returns can be just as controversial as debating the
14 appropriate growth rates to apply to a utility proxy group in a DCF analysis. In fact, many
15 estimates of expected returns on the S&P 500 are based on the use of the same principles of
16 the DCF methodology used to estimate the cost of common equity of utility companies.

17 Q. Did you provide any data that would call into question Ms. Ahern's use of a
18 13.65 percent expected total market return for the purposes of her prospective
19 CAPM estimate?

20 A. Yes. The Missouri State Employees' Retirement System (MOSERS) only
21 expects a long-term return of 8.50 percent for large domestic stocks. Being that MOSERS is
22 a large institutional investor responsible for making investment decisions involving billions of
23 dollars, Staff believes this is a good barometer for broader market expectations.

1 Q. Did Ms. Ahern question the usefulness of the MOSERS' expected return
2 because of the length of the investment horizon used for these expected returns?

3 A. Yes. Ms. Ahern indicated that she didn't believe that it was appropriate to use
4 the MOSERS' expected returns since it applied to a period of only ten years.

5 Q. How long was the period for Ms. Ahern's expected market return of
6 13.65 percent?

7 A. Three-to-five years. Therefore, Ms. Ahern's criticism of the MOSERS'
8 expected return as being too short of a period for purposes of testing the reasonableness of my
9 estimated cost of equity is even more relevant to the use of 3-5 year expected total returns in
10 her analysis.

11 Q. For purposes of her estimated constant-growth rate in her DCF estimated cost
12 of equity, how long a period do these projected growth rates cover?

13 A. Only five years. Because the use of a single-stage, constant-growth DCF
14 assumes that these 5-year growth rates will continue in perpetuity, Staff believes that this
15 assumption causes unreliable cost of equity estimates. Further, Staff has provided
16 information from investment analysts that demonstrate that these analysts do not make this
17 assumption when valuing utility stocks.

18 Q. Ms. Ahern believes it is improper to estimate the cost of common equity using
19 geometric averages rather than arithmetic averages. How do you respond?

20 A. Because I have already addressed much of Staff's position on this issue in
21 Rebuttal Testimony, I will only briefly address this issue. While Staff believes there is merit
22 to using arithmetic averages to estimate the cost of common equity for a short investment
23 horizon, such as one year, utility stocks are considered long-term investments and the estimate

1 of utilities' costs of common equity should therefore be based on estimated risk premiums
2 based on longer holding periods. Consequently, it is more appropriate to estimate the cost of
3 common equity using geometric averages.

4 Q. Ms. Ahern discussed authorized ROEs in her Rebuttal Testimony. Do you
5 have any additional information that the Commission may find useful for purposes of its
6 decision regarding fair and reasonable allowed ROE in this case?

7 A. Yes. MAWC provided an updated response to Staff Data Request 0015.1 that
8 indicates the allowed ROEs for litigated cases in which American Water's subsidiaries were
9 involved. According to this response (see Attachment A), the average allowed ROE for the
10 seven litigated cases from August 8, 2008 through December 8, 2009 was 10.17 percent.

11 Q. Was Staff able to investigate the details of these cases?

12 A. Due to time constraints, Staff was unable to investigate the details of these
13 cases. If the Commission desires more information on these cases, Staff will do this research.

14 **SUMMARY AND CONCLUSIONS**

15 Q. Please summarize the conclusions of your Surrebuttal Testimony.

16 A. My conclusions regarding the capital structure and cost of common equity are
17 listed below:

- 18 1. The use of MAWC's capital structure as proposed by MAWC is
19 inappropriate. It does not reflect American Water's actual
20 support of the capital of its subsidiary, MAWC. The calculation
21 of the cost of capital for MAWC should be based on
22 American Water's actual consolidated capital structure as of
23 September 30, 2009, as shown on Staff's Corrected Schedule 7
24 attached to its Rebuttal testimony; and
- 25 2. My cost of common equity stated in Staff's
26 Corrected Schedule 22 attached to its Rebuttal testimony, which
27 is 8.95 percent to 9.55 percent, would produce a fair and

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

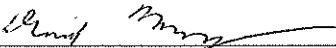
In the Matter of Missouri-American Water)
Company's Request for Authority to Implement a)
General Rate Increase for Water and Sewer)
Services Provided in Missouri Service Areas)

Case No. WR-2010-0131

AFFIDAVIT OF DAVID MURRAY

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

David Murray, of lawful age, on his oath states: that he has participated in the preparation of the foregoing Surrebuttal Testimony in question and answer form, consisting of 19 pages to be presented in the above case; that the answers in the foregoing Surrebuttal Testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true and correct to the best of his knowledge and belief.

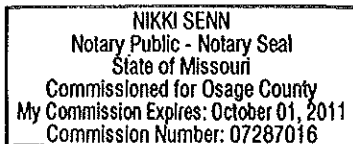


David Murray

Subscribed and sworn to before me this 6th day of May, 2010.



Notary Public



**Missouri-American Water Company
Case No. WR-2010-0131**

**Capital Asset Pricing Model (CAPM) Costs of Common Equity Estimates
Based on Historical Return Differences Between Common Stocks and Long-Term U.S. Treasuries
for the Comparable Water Utility Companies**

	(1)	(2)	(3)	(4)	(5)	(6)
			Arithmetic Average Market Risk Premium (1926-2009)	Geometric Average Market Risk Premium (1926-2009)	Arithmetic CAPM Cost of Common Equity (1926-2009)	Geometric CAPM Cost of Common Equity (1926-2009)
Company Name	Risk Free Rate	Company's Value Line Beta				
American States Water Company	4.57%	0.80	6.00%	4.40%	9.37%	8.09%
Aqua America Inc.	4.57%	0.65	6.00%	4.40%	8.47%	7.43%
California Water Service Group	4.57%	0.75	6.00%	4.40%	9.07%	7.87%
York Water Company	4.57%	0.65	6.00%	4.40%	8.47%	7.43%
Average		0.71			8.85%	7.71%

Column 1 = The appropriate yield is equal to the average 30-year U.S. Treasury Bond yield for December 2009, January and February 2010 which was obtained from the St. Louis Federal Reserve website at <http://research.stlouisfed.org/fred2/series/GS30/22>.

Column 2 = Beta is a measure of the movement and relative risk of an individual stock to the market as a whole as reported by the Value Line Investment Survey: Ratings & Reports, January 22, 2010.

Column 3 = The Market Risk Premium represents the expected return from holding the entire market portfolio less the expected return from holding a risk free investment. The appropriate Market Risk Premium for the period 1926 - 2008 was determined to be 5.60% based on an arithmetic average as calculated in Ibbotson Associates, Inc.'s Stocks, Bonds, Bills, and Inflation: 2009 Yearbook.

Column 4 = The Market Risk Premium represents the expected return from holding the entire market portfolio less the expected return from holding a risk free investment. The appropriate Market Risk Premium for the period 1926 - 2008 was determined to be 3.9% based on a geometric average as calculated in Ibbotson Associates, Inc.'s Stocks, Bonds, Bills, and Inflation: 2009 Yearbook.

Column 5 = (Column 1 + (Column 2 * Column 3)).

Column 6 = (Column 1 + (Column 2 * Column 4)).

**Annual Return on Equity for American Water
Regulated Subsidiaries for 2008
1/21/2010, Updated 4/27/2010
Recent Final Orders - Subsidiaries**

Company/State	2008 Earned Return on Equity (%)	Awarded Return on Equity (%)	Effective Date of Rate Order	Docket / Case Number	Litigated Settled	
Arizona-American Water Company	Note 5	0.00%	9.90%	12/8/2009	W-01303A-08-0227	Litigated
California-American Water Company		0.00%	10.20%	5/11/2009	A 08-05-003	Litigated
Hawaii-American Water Company		8.18%	10.60%	10/10/2008	2007-00180	Settled
Illinois American Water Company		0.53%	10.35%	8/8/2008	07-0507	Litigated
Indiana American Water Company	Note 3	7.76%	N/A	N/A	N/A	N/A
Iowa American Water Company		4.91%	10.40%	2/3/2008	RPU-07-3	Settled
Kentucky-American Water Company		10.63%	10.00%	6/1/2009	2008-00427	Settled
Long Island American Water Company		10.59%	9.50%	4/1/2008	07-W-0508	Settled
Maryland-American Water Company		4.70%	10.75%	9/1/2009	9187	Settled
New Jersey-American Water Company		7.95%	10.30%	12/8/2008	WR-08010020	Litigated
New Mexico-American Water Company		1.48%	10.25%	5/14/2009	08-00134-UT	Litigated
Ohio-American Water Company		0.00%	10.88%	11/13/2008	07-1112-WS-AIR	Settled
Pennsylvania American Water Company		9.00%	10.80%	11/7/2009	R-2009-2097323	Settled
Tennessee-American Water Company		2.29%	10.20%	10/1/2008	08-00039	Litigated
Virginia American Water Company	Note 1	7.30%	10.50%	12/1/2008	PUE-2008-00009	Settled
West Virginia American Water Company		4.71%	10.00%	3/26/2009	08-0900-W-42T	Litigated
Totals		5.87%				

All Earned Return inputs taken from 2008 audited financials for all subsidiaries

Note 1 - Two Virginia state subsidiaries combined into one for audits.

Note 2 - Audited financials not available for Texas American Water Company

Note 3 - No rate case orders were received in Indiana during the specified time periods

Note 4 - Audited Financials are not yet available for subsidiaries for CY 2009

Note 5 - Arizona Staff recommended a 10.7% ROE in Case # W-01303A-09-0343