

**BEFORE THE  
PUBLIC SERVICE COMMISSION OF THE  
COMMONWEALTH OF KENTUCKY**

**IN THE MATTER OF:** )  
 )  
**THE APPLICATION OF KENTUCKY-** ) **CASE NO. 2018-00358**  
**AMERICAN WATER COMPANY FOR AN** )  
**ADJUSTMENT OF RATES** )

**DIRECT TESTIMONY  
AND EXHIBITS  
OF  
RICHARD A. BAUDINO**

**ON BEHALF OF  
THE OFFICE OF THE ATTORNEY GENERAL  
&  
LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT**

**J. Kennedy and Associates, Inc.  
570 Colonial Park Drive, Suite 305  
Roswell, GA 30075**

**MARCH 15, 2019**

**BEFORE THE  
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**TABLE OF CONTENTS**

**I. QUALIFICATIONS AND SUMMARY..... 1**

**II. REVIEW OF ECONOMIC AND FINANCIAL CONDITIONS ..... 4**

**III. DETERMINATION OF FAIR RATE OF RETURN..... 18**

**Discounted Cash Flow (“DCF”) Model ..... 21**

**Capital Asset Pricing Model..... 28**

**Conclusions and Recommendations ..... 35**

**IV. RESPONSE TO KAW ROE TESTIMONY ..... 37**

**V. KAW PROPOSED QUALIFIED INFRASTRUCTURE PROGRAM..... 49**

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**DIRECT TESTIMONY OF RICHARD A. BAUDINO**

**I. QUALIFICATIONS AND SUMMARY**

1 **Q. Please state your name and business address.**

2 A. My name is Richard A. Baudino. My business address is J. Kennedy and Associates,  
3 Inc. (“Kennedy and Associates”), 570 Colonial Park Drive, Suite 305, Roswell,  
4 Georgia 30075.

5 **Q. What is your occupation and by whom are you employed?**

6 A. I am a consultant with Kennedy and Associates.

7 **Q. Please describe your education and professional experience.**

8 A. I received my Master of Arts degree with a major in Economics and a minor in  
9 Statistics from New Mexico State University in 1982. I also received my Bachelor of  
10 Arts Degree with majors in Economics and English from New Mexico State in 1979.

11

12 I began my professional career with the New Mexico Public Service Commission Staff  
13 in October 1982 and was employed there as a Utility Economist. During my  
14 employment with the Staff, my responsibilities included the analysis of a broad range  
15 of issues in the ratemaking field. Areas in which I testified included cost of service,

*J. Kennedy and Associates, Inc.*

1 rate of return, rate design, revenue requirements, analysis of sale/leasebacks of  
2 generating plants, utility finance issues, and generating plant phase-ins.

3  
4 In October 1989, I joined the utility consulting firm of Kennedy and Associates as a  
5 Senior Consultant where my duties and responsibilities covered substantially the same  
6 areas as those during my tenure with the New Mexico Public Service Commission  
7 Staff. I became Manager in July 1992 and was named Director of Consulting in  
8 January 1995. Currently, I am a consultant with Kennedy and Associates.

9  
10 Exhibit \_\_\_\_ (RAB-1) summarizes my expert testimony experience.

11 **Q. On whose behalf are you testifying?**

12 A. I am testifying on behalf of the Office of the Attorney General of the Commonwealth  
13 of Kentucky (“AG”) and Lexington-Fayette Urban County Government (“LFUCG”).

14 **Q. What is the purpose of your Direct Testimony?**

15 A. The purpose of my Direct Testimony is to address the allowed return on equity  
16 (“ROE”) for Kentucky-American Water Company (“KAW” or “Company”). In  
17 connection with my recommendation with respect to the allowed ROE for KAW, I  
18 will also respond to the Direct Testimony of Ms. Anne Bulkley, witness for the  
19 Company.

20  
21 In addition to ROE, I have reviewed the Company’s proposed Qualified Infrastructure  
22 Program (“QIP”) and its associated rider mechanism as described in the Direct  
23 Testimonies of KAW witnesses Ms. Melissa Schwarzell and Mr. Brent O’Neill. I will

1 address the regulatory policy issues associated with the Company's proposed QIP and  
2 rider.

3 **Q. Please summarize your conclusions and recommendations.**

4 A. I recommend that the Kentucky Public Service Commission ("KPSC" or  
5 "Commission") adopt a ROE of 9.15% for KAW in this proceeding. In arriving at this  
6 recommendation I performed a Discounted Cash Flow ("DCF") analysis using the  
7 same two proxy groups of companies used by KAW witness Bulkley. I also performed  
8 two Capital Asset Pricing Model ("CAPM") analyses, one based on expected returns  
9 for the stock market and one based on a risk premium using historical market returns.  
10 I relied on the DCF result for my ROE recommendation, although my CAPM analyses  
11 support my 9.15% recommendation as being reasonable.

12  
13 In Section IV of my testimony I will respond to Company witness Bulkley's Direct  
14 Testimony and her ROE recommendation of 10.80%. I will clearly demonstrate that  
15 Ms. Bulkley's recommended ROE of 10.80% grossly overstates a fair rate of return  
16 for KAW and that this recommendation should be rejected.

17  
18 In Section V, I recommend that the Commission reject KAW's proposed QIP rider.  
19 KAW has not provided sufficient evidence in this case that it needs the proposed QIP  
20 rider to support its QIP investments. Although I do not offer a recommendation  
21 regarding the necessity or prudence of the Company's QIP as Mr. O'Neill described  
22 it, if the Commission decides the QIP is reasonable then the future test year will allow  
23 the Company to include portions of its QIP investment and expenses and, if necessary,

1 KAW can always file a future rate case to collect future QIP investments with full  
2 Commission review.

## 3 II. REVIEW OF ECONOMIC AND FINANCIAL CONDITIONS

4 **Q. Mr. Baudino, what has the trend been in long-term capital costs over the last 10**  
5 **years?**

6 A. Since 2007 and 2008, the overall trend in interest rates in the U.S. and the world  
7 economy has been lower. This trend was precipitated by the 2007 financial crisis and  
8 severe recession that followed in December 2007. In response to this economic crisis,  
9 the Federal Reserve ("Fed") undertook an unprecedented series of steps to stabilize  
10 the economy, ease credit conditions, and lower unemployment and interest rates.  
11 These steps are commonly known as Quantitative Easing ("QE") and were  
12 implemented in three distinct stages: QE1, QE2, and QE3. The Fed's stated purpose  
13 of QE was "to support the liquidity of financial institutions and foster improved  
14 conditions in financial markets."<sup>1</sup>

15 **Q. Mr. Baudino, before you continue please provide a brief explanation of how the**  
16 **Fed uses interest rates to improve conditions in the financial markets.**

17 A. Generally, the Fed uses monetary policy to implement certain economic goals. The  
18 Fed explained its monetary policy as follows:

19 Monetary policy in the United States comprises the Federal Reserve's  
20 actions and communications to promote maximum employment, stable  
21 prices, and moderate long-term interest rates--the three economic goals  
22 the Congress has instructed the Federal Reserve to pursue.  
23

---

<sup>1</sup> ([http://www.federalreserve.gov/monetarypolicy/bst\\_crisisresponse.htm](http://www.federalreserve.gov/monetarypolicy/bst_crisisresponse.htm)).

1 The Federal Reserve conducts the nation's monetary policy by  
2 managing the level of short-term interest rates and influencing the  
3 overall availability and cost of credit in the economy.<sup>2</sup>  
4

5 One of the Fed's primary tools for conducting monetary policy is setting the federal  
6 funds rate. The federal funds rate is the interest rate set by the Fed that banks and  
7 credit unions charge each other for overnight loans of reserve balances. Traditionally  
8 the federal funds rate directly influences short-term interest rates, such as the Treasury  
9 bill rate and interest rates on savings and checking accounts. The federal funds rate  
10 has a more indirect effect on long-term interest rates, such as the 30-Year Treasury  
11 bond and private and corporate long-term debt. Long-term interest rates are set more  
12 by market forces that influence the supply and demand of loanable funds.

13 **Q. Please continue with your discussion of the Fed's quantitative easing programs.**

14 A. QE1 was implemented from November 2008 through approximately March 2010.  
15 During this time, the Fed cut its key Federal Funds Rate to nearly 0% and purchased  
16 \$1.25 trillion of mortgage-backed securities and \$175 billion of agency debt  
17 purchases. QE2 was implemented in November 2010 with the Fed announcing that it  
18 would purchase an additional \$600 billion of Treasury securities by the second quarter  
19 of 2011.<sup>3</sup> Beginning in September 2011, the Fed initiated a "maturity extension  
20 program" in which it sold or redeemed \$667 billion of shorter-term Treasury securities  
21 and used the proceeds to buy longer-term Treasury securities. This program, also  
22 known as "Operation Twist," was designed by the Fed to lower long-term interest rates

---

<sup>2</sup> (<https://www.federalreserve.gov/monetarypolicy.htm>)

<sup>3</sup> (<http://www.federalreserve.gov/newsevents/press/monetary/20101103a.htm>)

1 and support the economic recovery. Finally, QE3 began in September 2012 with the  
2 Fed announcing an additional bond purchasing program of \$40 billion per month of  
3 agency mortgage backed securities.

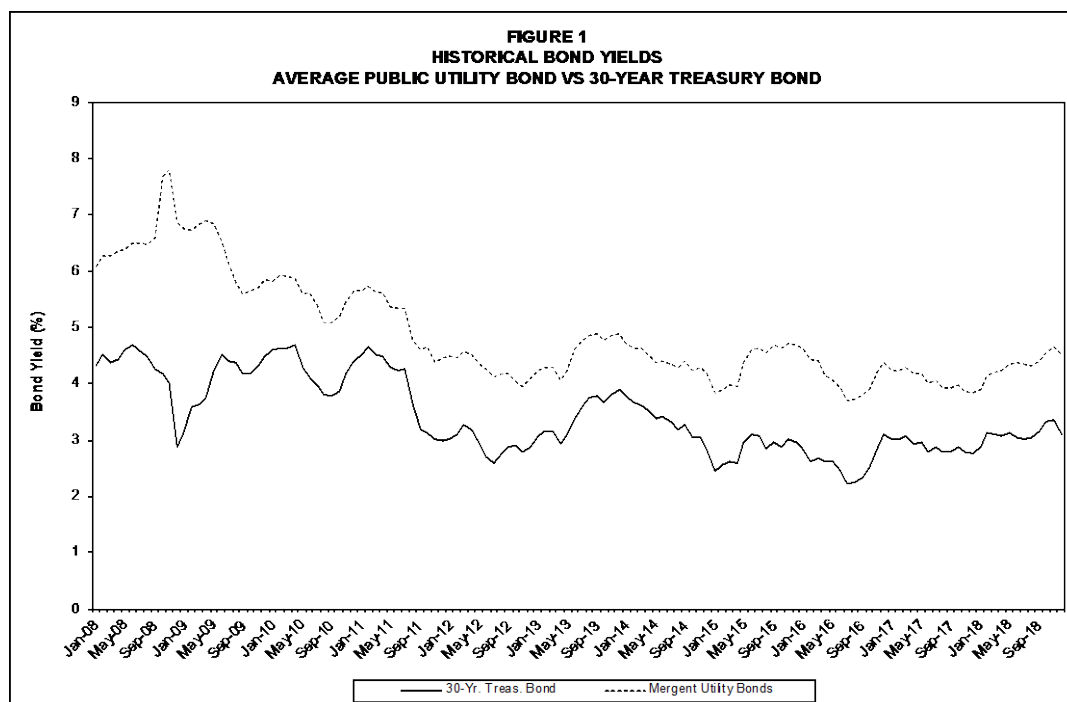
4  
5 The Fed began to pare back its purchases of securities in the last few years. On January  
6 29, 2014 the Fed stated that beginning in February 2014 it would reduce its purchases  
7 of long-term Treasury securities to \$35 billion per month. The Fed continued to reduce  
8 these purchases throughout the year and in a press release issued October 29, 2014  
9 announced that it decided to close this asset purchase program in October.<sup>4</sup>

10  
11 Figure 1 below presents a graph that tracks the 30-Year Treasury Bond yield and the  
12 Mergent average utility bond yield. The time period covered is January 2008 through  
13 February 2019.

---

<sup>4</sup> (<http://www.federalreserve.gov/newsevents/press/monetary/20141029a.htm>)





1

2

3

4

5

6

The Fed's QE program and federal funds rate cuts were effective in lowering the long-term cost of borrowing in the United States. The 30-Year Treasury Bond yield declined from 5.11% in July 2007 to a low of 2.59% in July 2012. The average utility bond yield also fell substantially, from 6.28% in July 2007 to 4.12% in July 2012.

7 **Q.**

**Has the Fed recently indicated any important changes to its monetary policy?**

8 **A.**

Yes. In March 2016, the Fed began to raise its target range for the federal funds rate, increasing it to 1/4% to 1/2% from 0% to 1/4%. Since that time, the Fed increased the federal funds rate several more times, with the most recent increase announced on December 19, 2018. The federal funds rate now stands in the range of 2.25% - 2.50%.

10

11

12

However, in its press release dated January 30, 2019 the Fed decided to hold the federal funds rate unchanged, stating the following:

1 Consistent with its statutory mandate, the Committee seeks to foster  
2 maximum employment and price stability. In support of these goals,  
3 the Committee decided to maintain the target range for the federal  
4 funds rate at 2-1/4 to 2-1/2 percent. The Committee continues to view  
5 sustained expansion of economic activity, strong labor market  
6 conditions, and inflation near the Committee's symmetric 2 percent  
7 objective as the most likely outcomes. In light of global economic and  
8 financial developments and muted inflation pressures, the Committee  
9 will be patient as it determines what future adjustments to the target  
10 range for the federal funds rate may be appropriate to support these  
11 outcomes.  
12

13 The transcript of Federal Reserve Chairman Powell's press conference on January 30,  
14 2019 provided some additional insight into the Fed's most recent thinking with respect  
15 to interest rate increases:

16 At our December meeting, we noted the solid outlook for steady  
17 growth, vigorous job creation, and price stability. We also stressed that  
18 the extent and timing of any rate increases were uncertain and would  
19 depend on incoming data and the evolving outlook. We therefore said  
20 that we would be paying close attention to global economic and  
21 financial developments and assessing their implications for the  
22 economic outlook.  
23

24 Today the FOMC decided that the cumulative effects of those  
25 developments over the last several months warrant a patient, wait-and-  
26 see approach regarding future policy changes. In particular, our  
27 statement today says, 'In light of global economic and financial  
28 developments and muted inflation pressures, the Committee will be  
29 patient as it determines what future adjustments to the target range for  
30 the federal funds rate may be appropriate.'<sup>5</sup>  
31

32 Chairman Powell noted in his remarks that:

33 Inflation readings have been muted, and the recent drop in oil prices is  
34 likely to push headline inflation lower still in coming months. Further,  
35 as we noted in our postmeeting statement, while survey-based  
36 measures of inflation expectations have been stable, financial market  
37 measures of inflation compensation have moved lower. Similarly, the  
38 balance—the risk of financial imbalances appears to have receded, as

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<sup>5</sup> (<https://www.federalreserve.gov/mediacenter/files/FOMCpresconf20190130.pdf>).

1 a number of indicators that showed elevated levels of financial risk  
2 appetite last fall have moved closer to historical norms. In this  
3 environment, we believe we can best support the economy by being  
4 patient in evaluating the outlook before making any future adjustment  
5 to policy.<sup>6</sup>  
6

7 **Q. What do you conclude from these recent pronouncements from the Fed?**

8 A. I conclude that, for now, the Federal Reserve is taking a wait-and-see approach with  
9 respect to increasing interest rates. With low inflation, slowing growth in the United  
10 States, China, and Europe, and tightening financial conditions, the case for increasing  
11 the federal funds rate in 2019 has weakened considerably.

12  
13 Chairman Powell reiterated the Fed's approach in a Wall Street Journal article on  
14 March 8, 2019 in which he stated:

15 'With nothing in the outlook demanding an immediate policy  
16 response,' the central bank has 'adopted a patient, wait-and-see  
17 approach to considering any alteration in the stance of policy,' Mr.  
18 Powell said in remarks to the Stanford Institute of Economic Policy  
19 Research in Stanford, Calif.<sup>7</sup>

20 **Q. What are the Fed's most recent economic projections with respect to the federal**  
21 **funds rate and inflation?**

22 A. The Fed provided certain economic projections that accompanied its December 19,  
23 2018 press release showing the following:

- 24 • Projected federal funds rate of 2.4% for 2018, 2.9% for 2019, 3.1% for 2020,  
25 and 2.8% for the longer run.

---

<sup>6</sup> *Ibid.*

<sup>7</sup> *Fed Chief Says No Need to Change Interest Rates at Present*, Wall Street Journal, March 8, 2019.

- Inflation running at 1.9% for 2018 and 2.0% for 2019 and 2020.<sup>8</sup>

2 **Q. Mr. Baudino, why is it important to understand the Fed's actions over the last 10**  
3 **years?**

4 A. The Fed's monetary policy actions since 2008 were deliberately undertaken to lower  
5 interest rates and support economic recovery. Even with several recent increases in  
6 the federal funds rate, the U.S. economy is still in a relatively low interest rate  
7 environment. This environment has affected the common stocks of regulated utilities,  
8 which are interest rate sensitive due to their high concentration of fixed assets. Thus,  
9 as interest rates increase in the general economy, the prices of utility common stocks  
10 fall and their dividend yields rise. Alternatively, as interest rates fall, the dividend  
11 yields on utility common stocks tend to fall as their prices rise.

12 **Q. Are current interest rates indicative of investor expectations regarding the future**  
13 **direction of interest rates?**

14 A. Yes. Securities markets are efficient and most likely reflect investors' expectations  
15 about future interest rates. As Dr. Roger Morin pointed out in *New Regulatory*  
16 *Finance*:

17 A considerable body of empirical evidence indicates that U.S. capital  
18 markets are efficient with respect to a broad set of information,  
19 including historical and publicly available information.<sup>9</sup>

20  
21 Dr. Morin also noted the following:

22 There is extensive literature concerning the prediction of interest rates.  
23 From this evidence, it appears that the no-change model of interest rates  
24 frequently provides the most accurate forecasts of future interest rates  
25 while at other times, the experts are more accurate. Naïve

---

<sup>8</sup> (<https://www.federalreserve.gov/newsevents/pressreleases/monetary20181219c.htm> )

<sup>9</sup> Morin, Roger A., *New Regulatory Finance*, Public Utilities Reports, Inc. (2006) at 279.

1 extrapolations of current interest rates frequently outperform published  
2 forecasts. The literature suggests that on balance, the bond market is  
3 very efficient in that it is difficult to consistently forecast interest rates  
4 with greater accuracy than a no-change model. The latter model  
5 provides similar, and in some cases, superior accuracy than  
6 professional forecasts.<sup>10</sup>

7  
8 Despite recent increases in the general level of short-term interest rates since the  
9 second half of 2016, the U.S. economy continues to operate in a relatively low interest  
10 rate environment. It is important to realize that investor expectations of higher future  
11 interest rates, if any, are already likely embodied in current securities prices, which  
12 include debt securities and stock prices.

13  
14 Moreover, the current low interest rate environment still favors lower risk regulated  
15 utilities. It would not be advisable for utility regulators to raise ROEs in anticipation  
16 of higher forecasted long-term interest rates that may or may not occur.

17 **Q. How has the increase in the federal funds rate since 2016 affected utility stocks in**  
18 **terms of bond yields and stock prices?**

19 A. Table 1 shows the federal funds rate, the yield on the 30-Year Treasury bond, the yield  
20 on the average utility bond, and the Dow Jones Utility Average (“DJUA”) from  
21 January 2016 through February 2019.

---

<sup>10</sup> *Ibid.* at 172.

**TABLE 1**  
**Bond Yields and DJUA**

	Federal Funds Rate %	30-Year Treasury %	Avg. Utility Bond %	DJUA
<u>2016</u>				
January	0.34	2.86	4.62	611.35
February	0.38	2.62	4.44	620.70
March	0.36	2.68	4.40	668.57
April	0.37	2.62	4.16	654.44
May	0.37	2.63	4.06	659.44
June	0.38	2.45	3.93	716.52
July	0.39	2.23	3.70	711.42
August	0.40	2.26	3.73	666.87
September	0.40	2.35	3.80	668.13
October	0.40	2.50	3.90	675.23
November	0.41	2.86	4.21	632.67
December	0.54	3.11	4.39	645.86
<u>2017</u>				
January	0.65	3.02	4.24	668.87
February	0.66	3.03	4.25	703.16
March	0.79	3.08	4.30	697.28
April	0.90	2.94	4.19	704.35
May	0.91	2.96	4.19	726.62
June	1.04	2.80	4.01	706.91
July	1.15	2.88	4.06	726.48
August	1.16	2.80	3.92	743.24
September	1.15	2.78	3.93	723.60
October	1.15	2.88	3.97	753.20
November	1.16	2.80	3.88	770.39
December	1.30	2.77	3.85	723.37
<u>2018</u>				
January	1.41	2.88	3.91	699.25
February	1.42	3.13	4.15	668.81
March	1.51	3.09	4.21	692.63
April	1.69	3.07	4.24	707.01
May	1.70	3.13	4.36	695.21
June	1.82	3.05	4.37	711.64
July	1.91	3.01	4.38	724.24
August	1.91	3.04	4.33	726.41
September	1.95	3.15	4.41	720.60
October	2.19	3.34	4.56	733.84
November	2.20	3.36	4.65	741.92
December	2.27	3.10	4.51	712.93
<u>2019</u>				
January	2.40	3.04	4.48	727.25
February	2.40	3.02	4.35	756.34

Source: Federal Reserve, Mergent Bond Record, Yahoo! Finance

1 Note that as the federal funds rate rose significantly from January through December  
2 2017, the 30-Year Treasury yield declined from 3.02% to 2.77%. Meanwhile, the  
3 DJUA rose throughout 2017, declined sharply in December and through February  
4 2018, then began to rise and as of February 2019 stood at 756.34, an increase of nearly  
5 24% since the beginning of 2016. This despite several significant increases in the  
6 federal funds rate. I would also add that the yield on the average utility bond in  
7 February 2019 is little changed from its yield in January 2016.

8  
9 From the data I have presented in Table 1, I conclude that several increases in the  
10 federal funds rate have had little medium-term impact on long-term interest rates as  
11 measured by the 30-Year Treasury Bond and the average public utility bond.

12 **Q. How does the investment community regard the utility industry currently?**

13 A. The Value Line Investment Survey's January 11, 2019 report on the Water Utility  
14 Industry concluded as follows:

15 During the recent downturn in the equity markets, the Water Industry  
16 lived up to its reputation of being a safe haven. Since our last report  
17 three months ago, this group has outperformed the broader market  
18 averages by a wide margin.

19  
20 Yields on these income-stocks are not attractive on a relative basis.  
21 Indeed, the yield on a typical water utility stock is lower than the Value  
22 Line median. Also, increases in short-term interest rates has made  
23 Treasury bills more than a viable option for investors seeking current  
24 income.

25 \* \* \*

26  
27 The water utility market in the United States remains very fragmented.  
28 Unlike the publicly traded (privately owned) companies followed in  
29 these pages, most Americans' water service is provided by a small  
30 municipally run utility that number in the tens of thousands.  
31 Unfortunately, many of these are both undercapitalized and inefficient.  
32 This is the main reason for the industry-wide consolidation taking place.

1 American Water Works and Aqua America are two companies that have  
2 been purchasing dozens of these authorities each year. Thus far, it has  
3 been a win-win situation. The larger companies absorb the smaller ones  
4 and wring out substantial cost savings. In addition, they have the  
5 financial wherewithal required to upgrade and modernize the existing  
6 water infrastructure, which is badly in need of repair. Following  
7 decades of neglect, regulators and utilities have been working jointly to  
8 install new pipelines and upgrade and expand wastewater facilities.<sup>11</sup>

9 **Q. What are the current credit ratings and bond ratings for KAW?**

10 A. KAW is an operating subsidiary of American Work Works Company, Inc. (“AWW”)  
11 and does not have its own credit ratings. AWW, KAW’s parent company, currently  
12 has a credit rating of A3 with a negative outlook from Moody’s and an A rating with  
13 a stable outlook from Standard & Poor’s (“S&P”).

14  
15 In its January 4, 2019 Credit Opinion on AWW,<sup>12</sup> Moody’s noted that the company’s  
16 credit profile is supported by:

- 17 • Its market position as the largest US investor owned water utility holding  
18 company.
- 19 • Strong regulatory and operations diversity across 16 states.
- 20 • Improving regulatory support as more states adopt cost recovery trackers.<sup>13</sup>

21 Moody’s also stated that AWW’s credit is constrained by:

---

<sup>11</sup> Value Line Investment Survey’s January 11, 2019 report on the Water Utility Industry.

<sup>12</sup> KAW provided Moody’s and S&P credit reports and opinions in response to the Attorney General’s  
First Set of data requests, Question No. 47 for American Water Works Co.

<sup>13</sup> KAW Response to AG 1-47, Attachments, at 31 of 109 (January 25, 2019).



- 1           • Increasing leverage due to financial policies that target over \$8.0 billion of  
2           capital expenditures, dividend growth approaching 10%, and no planned  
3           equity issuances over the next five years.
- 4           • Cash flow pressures from federal tax reform.
- 5           • Structurally subordinated holding company debt that is about 25% of total  
6           consolidated debt.<sup>14</sup>

7           In Moody's April 2018 Issuer Comment on AWW, it noted that AWW's acquisition  
8           of Pivotal Home Solutions, an unregulated business, was credit negative for the  
9           company.<sup>15</sup>

10  
11          S&P's June 11, 2018 research update affirmed AWW's credit rating of A, noting the  
12          rating affirmation reflected S&P's expectations that the company's strong  
13          commitment to maintain its low-risk, regulated operations between 90% - 95% of  
14          consolidated earnings before interest, taxes, depreciation, and amortization  
15          ("EBITDA") offsets marginally weaker financial measures.<sup>16</sup> S&P also noted:

16                   AWK's operations benefits from constructive mechanisms such as the  
17                   distribution system investment charge (DSIC) and infrastructure  
18                   replacement surcharges in a number of its jurisdictions, which allow  
19                   for the recovery of high capital spending outside of a traditional rate-  
20                   case proceeding and reduces regulatory lag. In addition, some of the  
21                   key jurisdictions benefit from forward-looking test years and revenue  
22                   stabilization mechanisms, which help the company to earn close to its  
23                   allowed return on equity (ROE) year-over-year. The company's

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<sup>14</sup>          KAW Response to AG 1-47, Attachments, at 31 of 109 (January 25, 2019).

<sup>15</sup>          KAW Response to AG 1-47, Attachments, at 13 of 109 (January 25, 2019).

<sup>16</sup>          KAW Response to AG 1-47, Attachments, at 95 of 109 (January 25, 2019).

1 geographic diversity and solid operating efficiency further supports its  
2 business risk profile.<sup>17</sup>  
3

4 S&P assessed AWW's financial risk profile "using our most relaxed financial ratio  
5 benchmarks compared to those used for a typical corporate issuer, reflecting the  
6 company's low-risk, regulated water distribution operations and its overall effective  
7 management of regulatory risk."<sup>18</sup>

8 **Q. Based on your review of KAW's financial and regulatory situation, what are your**  
9 **recommendations to the Commission with respect to the approach to estimating**  
10 **the allowed ROE for KAW in this proceeding?**

11 A. I recommend that the Commission base its allowed ROE in this proceeding on the  
12 midpoint DCF results for the proxy groups of companies used by Ms. Bulkley and  
13 myself. In particular, it is appropriate in this case for the Commission to rely on the  
14 Combined Utility Proxy Group results, which contains both regulated water and  
15 natural gas distribution companies.

16  
17 In the Commission's Order in Case No. 2012-00520 dated October 25, 2013, the  
18 Commission found that the ROE for KAW should be based on a proxy group of water  
19 utilities and not on an alternative proxy group of natural gas distribution companies.  
20 Since the Commission's Order, however, the proxy group of regulated water utilities  
21 has shrunk to five from six in Case No. 2012-00520. In my opinion, a proxy group  
22 with only five companies could be unduly influenced by data outliers, such as expected  
23 growth rates that do not reasonably reflect long-term dividend and earnings growth for

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<sup>17</sup> KAW Response to AG 1-47, Attachments, at 96 of 109 (January 25, 2019).

<sup>18</sup> KAW Response to AG 1-47, Attachments, at 97 of 109 (January 25, 2019).

1 the regulated water industry. In the Combined Utility Proxy Group (“CUPG”), Ms.  
2 Bulkley has included regulated natural gas distribution companies that are reasonably  
3 similar to water distribution companies and has addressed to the extent possible the  
4 Commission’s concerns in its Final Order in Case No. 2012-00520.

5  
6 On pages 51 and 52 of its Order in the above referenced docket, the Commission noted  
7 the following:

8 The water utility group consists of large and small publicly traded water  
9 utilities. While Kentucky-American is a relatively small water utility,  
10 it is part of a large, multi-state operation that has access to investment  
11 capital under conditions that few small water utilities could obtain.  
12 Accordingly, we are of the opinion that a proxy group consisting of  
13 water utilities is a more accurate indicator of risk and market  
14 expectations.

15  
16 Our finding as to an ROE of 9.7 percent also continues to reflect  
17 Kentucky-American's regulatory history, with Kentucky-American's  
18 frequency of rate case applications since 1992 clearly demonstrating  
19 management's focused efforts to minimize regulatory risk and the risk  
20 associated with the recovery of capital investments. Kentucky-  
21 American has applied for rate adjustments on a more frequent basis  
22 than other water utilities within the proxy group, using a forecasted test  
23 period with each rate application. Not only does the ability to use a  
24 forecasted test period tend to reduce the risk associated with the  
25 recovery of capital investments, it is also a mechanism that is  
26 unavailable to several of the utilities in Kentucky-American's proxy  
27 group and their subsidiaries.

28  
29 The Commission’s findings cited above are still relevant in this case with respect to  
30 the Company’s use of a forecasted test period. Indeed, Ms. Bulkley found that 58.8%  
31 of the companies in the CUPG including AWW use future test years, while 50% of  
32 the companies excluding AWW use future test years. Compared to the CUPG, KAW  
33 is slightly less risky due to the Commission’s use of a future test year.

1 **Q. Has KAW's lack of a QIP or other distribution system investment surcharge,**  
2 **harmed the Company with respect to its recent earned ROEs?**

3 A. No. Please refer to Exhibit \_\_\_(RAB-2), which contains the Company's response to  
4 No. 92 of the Commission Staff 's Second Request For Information ("RFI"). The Staff  
5 RFI requested the monthly ROE for AWW and KAW and the Company's response  
6 includes earned returns from January 2017 through December 2018. The data  
7 provided by the Company showed the following:

- 8 • KAW's earned ROE for 2017 ranged from 9.99% to 12.26%
- 9 • KAW's earned ROE for 2018 ranged from 7.93% to 10.95%

10 KAW's response shows that the Company earned greater than its last Commission-  
11 allowed ROE for all of 2017 and part of 2018 without any sort of QIP. From this data,  
12 I conclude that the absence of QIP does not raise the Company's risk relative to the  
13 proxy groups used by Ms. Bulkley and myself.

### 14 **III. DETERMINATION OF FAIR RATE OF RETURN**

15 **Q. Please describe the methods you employed in estimating a fair rate of return for**  
16 **KAW.**

17 A. I employed a Discounted Cash Flow ("DCF") analysis using the two proxy groups  
18 used by Company witness Bulkley in her ROE analyses. My DCF analyses are based  
19 on the standard constant growth form of the model that employs four different growth  
20 rate forecasts from the Value Line Investment Survey, Yahoo! Finance, and Zacks. I  
21 also employed Capital Asset Pricing Model ("CAPM") analyses using both historical  
22 and forward-looking data. The results from the CAPM tend to support the  
23 reasonableness of my DCF results as well as my ROE recommendation for KAW.

1 **Q. What are the main guidelines to which you adhere in estimating the cost of equity**  
2 **for a firm?**

3 A. The estimated cost of equity should be comparable to the returns of other firms with  
4 similar risk structures and should be sufficient for the firm to attract capital. These are  
5 the basic standards set out by the United States Supreme Court in *Federal Power*  
6 *Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944) and *Bluefield W.W. & Improv.*  
7 *Co. v. Public Service Comm'n*, 262 U.S. 679 (1922).

8  
9 From an economist's perspective, the notion of "opportunity cost" plays a vital role in  
10 estimating the return on equity. One measures the opportunity cost of an investment  
11 equal to what one would have obtained in the next best alternative. For example, let  
12 us suppose that an investor decides to purchase the stock of a publicly traded water  
13 utility. That investor made the decision based on the expectation of dividend payments  
14 and perhaps some appreciation in the stock's value over time; however, that investor's  
15 opportunity cost is measured by what she or he could have invested in as the next best  
16 alternative. That alternative could have been another utility stock, a utility bond, a  
17 mutual fund, a money market fund, or any other number of investment vehicles.

18  
19 The key determinant in deciding whether to invest, however, is based on comparative  
20 levels of risk relative to return. Our hypothetical investor would not invest in a  
21 particular utility company stock if it offered a return lower than other investments of  
22 similar risk. The opportunity cost simply would not justify such an investment. Thus,  
23 the task for the rate of return analyst is to estimate a return that is equal to the return  
24 being offered by other risk-comparable firms.

1 **Q. What are the major types of risk faced by utility companies?**

2 A. In general, risk associated with the holding of common stock can be separated into  
3 three major categories: business risk, financial risk, and liquidity risk. Business risk  
4 refers to risks inherent in the operation of the business. Volatility of the firm's sales,  
5 long-term demand for its product(s), the amount of operating leverage, and quality of  
6 management are all factors that affect business risk. The quality of regulation at the  
7 state and federal levels also plays an important role in business risk for regulated utility  
8 companies.

9

10 Financial risk refers to the impact on a firm's future cash flows from the use of debt in  
11 the capital structure. Interest payments to bondholders represent a prior call on the  
12 firm's cash flows and must be met before income is available to the common  
13 shareholders. Additional debt means additional variability in the firm's earnings,  
14 leading to additional risk.

15

16 Liquidity risk refers to the ability of an investor to quickly sell an investment without  
17 a substantial price concession. The easier it is for an investor to sell an investment for  
18 cash, the lower the liquidity risk will be. Stock markets, such as the New York and  
19 American Stock Exchanges, help ease liquidity risk substantially. Investors who own  
20 stocks that are traded in these markets know on a daily basis what the market prices of  
21 their investments are and that they can sell these investments fairly quickly.

22 **Q. Are there any sources available to investors that quantify the total risk of a**  
23 **company?**

1 A. Bond and credit ratings are tools that investors use to assess the risk comparability of  
 2 firms. Bond rating agencies such as Moody's and S&P perform detailed analyses of  
 3 factors that contribute to the risk of an investment. The result of their analyses is a  
 4 bond and/or credit rating that reflect these risks.

### 5 Discounted Cash Flow ("DCF") Model

6 **Q. Please describe the basic DCF approach.**

7 A. The basic DCF approach is rooted in valuation theory. It is based on the premise that  
 8 the value of a financial asset is determined by its ability to generate future net cash  
 9 flows. In the case of a common stock, those future cash flows generally take the form  
 10 of dividends and appreciation in stock price. The value of the stock to investors is the  
 11 discounted present value of future cash flows. The general equation then is:

$$12 \quad V = \frac{R}{(1+r)} + \frac{R}{(1+r)^2} + \frac{R}{(1+r)^3} + \dots + \frac{R}{(1+r)^n}$$

13 *Where:*             $V = \text{asset value}$   
 14                             $R = \text{yearly cash flows}$   
 15                             $r = \text{discount rate}$

16 This is no different from determining the value of any asset from an economic point  
 17 of view; however, the commonly employed DCF model makes certain simplifying  
 18 assumptions. One is that the stream of income from the equity share is assumed to be  
 19 perpetual; that is, there is no salvage or residual value at the end of some maturity date  
 20 (as is the case with a bond). Another important assumption is that financial markets  
 21 are reasonably efficient; that is, they correctly evaluate the cash flows relative to the  
 22 appropriate discount rate, thus rendering the stock price efficient relative to other  
 23 alternatives. Finally, the model I typically employ also assumes a constant growth rate

1 in dividends. The fundamental relationship employed in the DCF method is described  
2 by the formula:

$$3 \quad k = D_1/P_0 + g$$

4           Where:        *D*<sub>1</sub> = the next period dividend  
5                            *P*<sub>0</sub> = current stock price  
6                            *g* = expected growth rate  
7                            *k* = investor-required return

8 Under the formula, it is apparent that “k” must reflect the investors’ expected return.  
9 Use of the DCF method to determine an investor-required return is complicated by the  
10 need to express investors’ expectations relative to dividends, earnings, and book value  
11 over an infinite time horizon. Financial theory suggests that stockholders purchase  
12 common stock on the assumption that there will be some change in the rate of dividend  
13 payments over time. This version of the DCF model assumes that the rate of growth  
14 in dividends is constant over the assumed time horizon; however, the model could  
15 easily handle varying growth rates if we knew what they were. Finally, the relevant  
16 time frame is prospective rather than retrospective.

17 **Q. What was your first step in conducting your DCF analysis for KAW?**

18 A. My first step was to choose a proxy group of companies with a risk profile that is  
19 reasonably reflective of the risks facing a low risk, regulated water utility such as  
20 KAW. I reviewed the two proxy groups selected by Ms. Bulkley and the selection  
21 criteria she used for each group. The first proxy group was a Water Proxy Group  
22 comprised of five publicly traded water utilities, including KAW’s parent company  
23 American Water Works Company, Inc. The second proxy group was a Combined  
24 Utility Proxy Group consisting of the companies in the Water Proxy Group and natural



1 gas distribution companies. Ms. Bulkley presented her selection criteria for this group  
2 on page 42 of her Direct Testimony.

3  
4 The two proxy groups selected by Ms. Bulkley are reasonable bases to estimate the  
5 ROE for KAW in this case. It is particularly important to use the Combined Utility  
6 Proxy Group for this case since there are only five companies in the Water Proxy  
7 Group. The DCF results for such a small sized proxy group could be influenced by  
8 unrepresentative data for a single company, such as an unsustainably high growth rate  
9 or a low growth rate that does not reflect a company's longer term growth expectations.  
10 I also support Ms. Bulkley's statements that addressed the Commission's prior  
11 concerns about the comparability of natural gas distribution companies to regulated  
12 water utilities on pages 40 through 41 of her Direct Testimony.

13 **Q. How do AWW's credit ratings compare to the credit ratings of the CUPG?**

14 A. Table 2 below presents Moody's and S&P's credit ratings for AWW and the  
15 companies in the CUPG. I obtained these credit ratings on March 6, 2019.

**TABLE 2**  
**Combined Utility Group & AWW Credit Ratings**

	<u>Moody's</u>	<u>S&amp;P</u>
American States Water	A2	A+
Atmos Energy	A2	A
California Water Service Group	NR	A+
Middlesex Water Company	NR	A
New Jersey Resources	Aa3	BBB+
Northwest Natural Holding Co.	A3	A+
ONE Gas, Inc.	A2	A
South Jersey Industries	A2	BBB
Southwest Gas Holdings	A3	BBB+
Spire, Inc.	Baa2	A-
York Water Company	NR	A-
American Water Works	A3	A

1

2

3

AWW's credit ratings fall within the range of credit ratings for the CUPG.

4 **Q.**

**What was your first step in determining the DCF return on equity for the two proxy groups?**

5

6 **A.**

I first determined the current dividend yield,  $D_1/P_0$ , from the basic equation. My general practice is to use six months as the most reasonable period over which to estimate the dividend yield. The six-month period I used covered the months from September 2018 through February 2019. I obtained historical prices and dividends from Yahoo! Finance. The annualized dividend divided by the average monthly price represents the average dividend yield for each month in the period.

7

8

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11

12

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14

The resulting average dividend yield for the Water Proxy Group is 1.87%. These calculations are shown in Exhibit \_\_\_\_ (RAB-3). This exhibit also shows the monthly

1 dividend yield for the Water Proxy Group. The monthly average dividend yield ranged  
2 from 1.97% (September) to 1.75% (February). The falling monthly dividend yields  
3 reflect the increasing prices that investors were willing to pay for the stocks of the  
4 water utilities in the group.

5  
6 The resulting average dividend yield for the CUPG is 2.38% shown on Exhibit  
7 \_\_\_(RAB-5). Unlike the Water Proxy Group, this exhibit shows that the monthly  
8 dividend yields for the CUPG did not show significant variation.

9 **Q. Having established the average dividend yields for the two proxy groups, how did**  
10 **you determine the investors' expected growth rate?**

11 A. The investors' expected growth rate, in theory, correctly forecasts the constant rate of  
12 growth in dividends. The dividend growth rate is a function of earnings growth and  
13 the payout ratio, neither of which is known precisely for the future. We refer to a  
14 perpetual growth rate since the DCF model has no arbitrary cut-off point. We must  
15 estimate the investors' expected growth rate because there is no way to know with  
16 absolute certainty what investors expect the growth rate to be in the short term, much  
17 less in perpetuity.

18  
19 For my analysis in this proceeding, I used three major sources of analysts' forecasts  
20 for growth. These sources are The Value Line Investment Survey, Zacks, and Yahoo!  
21 Finance. These are the sources I typically use for estimating growth for my DCF  
22 calculations.

23 **Q. Please briefly describe Value Line, Zacks, and Yahoo! Finance.**

1 A. The Value Line Investment Survey is a widely used and respected source of investor  
2 information that covers approximately 1,700 companies in its Standard Edition and  
3 several thousand in its Plus Edition. It is updated quarterly and probably represents  
4 the most comprehensive of all investment information services. It provides both  
5 historical and forecasted information on a number of important data elements. Value  
6 Line neither participates in financial markets as a broker nor works for the utility  
7 industry in any capacity of which I am aware.

8  
9 Zacks gathers opinions from a variety of analysts on earnings growth forecasts for  
10 numerous firms including regulated electric utilities. The estimates of the analysts  
11 responding are combined to produce consensus average estimates of earnings growth.  
12 I obtained Zacks' earnings growth forecasts from its web site.

13  
14 Like Zacks, Yahoo! Finance also compiles reports consensus analysts' forecasts of  
15 earnings growth.

16 **Q. Why did you rely on analysts' forecasts in your analysis?**

17 A. Return on equity analysis is a forward-looking process. Five-year or ten-year  
18 historical growth rates may not accurately represent investor expectations for dividend  
19 growth. Analysts' forecasts for earnings and dividend growth provide better proxies  
20 for the expected growth component in the DCF model than historical growth rates.  
21 Analysts' forecasts are also widely available to investors and one can reasonably  
22 assume that they influence investor expectations.

1 **Q. Please explain how you used analysts' dividend and earnings growth forecasts in**  
2 **your constant growth DCF analysis.**

3 Q. Columns (1) through (4) of the upper section of Exhibit \_\_\_(RAB-4) shows the  
4 forecasted dividend and earnings growth rates from Value Line and the earnings  
5 growth forecasts from Zacks and Yahoo! Finance for the Water Proxy Group. It is  
6 important to include dividend growth forecasts in the DCF model since the model calls  
7 for forecasted cash flows received by the investor. Value Line is the only source of  
8 which I am aware that forecasts dividend growth and my approach gives this forecast  
9 equal weight with the three earnings growth forecasts.

10

11 Exhibit \_\_\_(RAB-6), page 1, presents the same data for the CUPG. I chose to present  
12 the average and median values for the Value Line earnings growth rates both with and  
13 without Northwest Natural Holding Co. This is because the Value Line earnings  
14 growth rate for this company is 25.5%. This growth rate is an obvious outlier, is totally  
15 unsustainable, and is unrepresentative of the long-term growth prospects for  
16 Northwest Natural or any other regulated utility company. Including it in the  
17 calculation of the group average would inappropriately inflate the average for the  
18 group.

19 **Q. How did you proceed to determine the DCF return on equity for the proxy**  
20 **groups?**

21 A. To estimate the expected dividend yield ( $D_1$ ), the current dividend yield must be  
22 moved forward in time to account for dividend increases over the next twelve months.  
23 I estimated the expected dividend yield by multiplying the current dividend yield by  
24 one plus one-half the expected growth rate.

1  
2 Exhibit \_\_\_\_ (RAB-4) presents my standard method of calculating dividend yields,  
3 growth rates, and return on equity for the Water Proxy Group. The DCF Return on  
4 Equity Calculation section shows the application of each of four growth rates I used  
5 in my analysis to the current group dividend yield of 1.87% to calculate the expected  
6 dividend yield. I then added the expected growth rates to the expected dividend yield.  
7 In evaluating investor expected growth rates, I use both the average and the median  
8 values for the group under consideration. Method 1 uses the group average expected  
9 growth rate and Method 2 uses the group median expected growth rate. I also used  
10 these approaches for the CUPG in Exhibit \_\_\_\_ (RAB-6), page 2.

11 **Q. What are the results of your constant growth DCF model for the proxy groups?**  
12 A. For the Water Proxy group, the Method 1 results range from 8.25% to 10.65%, with  
13 the average of these results being 9.33%. Using the median growth rates in Method 2,  
14 the results range from 7.92% to 10.95%, with the average of these results being 9.44%.  
15  
16 For the Combined Utility Proxy Group, , the Method 1 results range from 8.38% to  
17 10.29%, with the average of these results being 9.02%. Using the median growth rates  
18 in Method 2, the results range from 8.45% to 11.49%, with the average of these results  
19 being 9.27%.

20 **Capital Asset Pricing Model**

21 **Q. Briefly summarize the Capital Asset Pricing Model ("CAPM") approach.**  
22 A. The theory underlying the CAPM approach is that investors, through diversified  
23 portfolios, may combine assets to minimize the total risk of the portfolio.

1 Diversification allows investors to diversify away all risks specific to a particular  
2 company and be left only with market risk that affects all companies. Thus, the CAPM  
3 theory identifies two types of risks for a security: company-specific risk and market  
4 risk. Company-specific risk includes such events as strikes, management errors,  
5 marketing failures, lawsuits, and other events that are unique to a particular firm.  
6 Market risk includes inflation, business cycles, war, variations in interest rates, and  
7 changes in consumer confidence. Market risk tends to affect all stocks and cannot be  
8 diversified away. The idea behind the CAPM is that diversified investors are rewarded  
9 with returns based on market risk.

10  
11 Within the CAPM framework, the expected return on a security is equal to the risk-  
12 free rate of return plus a risk premium that is proportional to the security's market, or  
13 non-diversifiable, risk. Beta is the factor that reflects the inherent market risk of a  
14 security and measures the volatility of a security relative to the overall market for  
15 securities. For example, a stock with a beta of 1.0 indicates that if the market rises by  
16 15%, that stock will also rise by 15%. This stock moves in tandem with movements  
17 in the overall market. Stocks with a beta of 0.5 will only rise or fall 50% as much as  
18 the overall market. So with an increase in the market of 15%, this stock will only rise  
19 7.5%. Stocks with betas greater than 1.0 will rise and fall more than the overall market.  
20 Thus, beta is the measure of the relative risk of individual securities vis-à-vis the  
21 market.

22  
23 Based on the foregoing discussion, the equation for determining the return for a  
24 security in the CAPM framework is:

1

2

$$K = R_f + \beta(MRP)$$

3

Where:  $K$  = Required Return on equity

4

$R_f$  = Risk-free rate

5

$MRP$  = Market risk premium

6

$\beta$  = Beta

7

8

This equation tells us about the risk/return relationship posited by the CAPM.

9

Investors are risk averse and will only accept higher risk if they expect to receive

10

higher returns. These returns can be determined in relation to a stock's beta and the

11

market risk premium. The general level of risk aversion in the economy determines

12

the market risk premium. If the risk-free rate of return is 3.0% and the required return

13

on the total market is 15%, then the risk premium is 12%. Any stock's required return

14

can be determined by multiplying its beta by the market risk premium. Stocks with

15

betas greater than 1.0 are considered riskier than the overall market and will have

16

higher required returns. Conversely, stocks with betas less than 1.0 will have required

17

returns lower than the market.

18

**Q. In general, are there concerns regarding the use of the CAPM in estimating the return on equity?**

19

20

A. Yes. There is some controversy surrounding the use of the CAPM.<sup>19</sup> There is evidence

21

that beta is not the primary factor in determining the risk of a security. For example,

22

Value Line's "Safety Rank" is a measure of total risk, not its calculated beta

---

<sup>19</sup> For a more complete discussion of some of the controversy surrounding the use of the CAPM, refer to *A Random Walk Down Wall Street* by Burton Malkiel, pp. 219-223, 11th edition.



1 coefficient. Beta coefficients usually describe only a small amount of total investment  
2 risk.

3  
4 There is also substantial judgment involved in estimating the required market return.  
5 In theory, the CAPM requires an estimate of the return on the total market for  
6 investments, including stocks, bonds, real estate, etc. It is nearly impossible for the  
7 analyst to estimate such a broad-based return. Often in utility cases, a market return  
8 is estimated using the S&P 500 or the return on Value Line's stock market composite.  
9 However, these are limited sources of information with respect to estimating the  
10 investor's required return for all investments. In practice, the total market return  
11 estimate faces significant limitations to its estimation and, ultimately, its usefulness in  
12 quantifying the investor required ROE.

13  
14 In the final analysis, a considerable amount of judgment must be employed in  
15 determining the risk-free rate and market return portions of the CAPM equation. The  
16 analyst's application of judgment can significantly influence the results obtained from  
17 the CAPM. My experience with the CAPM indicates that it is prudent to use a wide  
18 variety of data in estimating investor-required returns. Of course, the range of results  
19 may also be wide, indicating the difficulty in obtaining a reliable estimate from the  
20 CAPM.

21 **Q. How did you estimate the market return portion of the CAPM?**

22 A. The first source I used was the Value Line Investment Analyzer Plus Edition, for  
23 February 20, 2019. This edition covers several thousand stocks. The Value Line

1 Investment Analyzer provides a summary statistical report detailing, among other  
2 things, forecasted growth rates for earnings and book value for the companies Value  
3 Line follows as well as the projected total annual return over the next 3 to 5 years. I  
4 present these growth rates and Value Line's projected annual return on page 2 of  
5 Exhibit \_\_\_\_ (RAB-7). I included median earnings and book value growth rates. The  
6 estimated market returns using Value Line's market data range from 11.32% to  
7 13.00%. The average of these market returns is 12.16%.

8 **Q. Why did you use median growth rate estimates rather than the average growth**  
9 **rate estimates for the Value Line companies?**

10 A. Using median growth rates is likely a more accurate approach to estimating the central  
11 tendency of Value Line's large data set compared to the average growth rates. Average  
12 earnings and book value growth rates may be unduly influenced by very high or very  
13 low 3 - 5-year growth rates that are unsustainable in the long run. For example, Value  
14 Line's Statistical Summary shows both the highest and lowest value for earnings and  
15 book value growth forecasts. For earnings growth, Value Line showed the highest  
16 earnings growth forecast to be 89.5% and the lowest growth rate to be -31%. With  
17 respect to book value, the highest growth rate was 85.5% and the lowest was a -30%.  
18 None of these growth rate projections is compatible with long-run growth prospects  
19 for the market as a whole. The median growth rate is not influenced by such extremes  
20 because it represents the middle value of a very wide range of earnings growth rates.

21 **Q. Please continue with your market return analysis.**

22 A. I also considered a supplemental check to the Value Line projected market return  
23 estimates. Duff and Phelps compiled a study of historical returns on the stock market

1 in its 2018 SBBI Yearbook. Some analysts employ this historical data to estimate the  
2 market risk premium of stocks over the risk-free rate. The assumption is that a risk  
3 premium calculated over a long period of time is reflective of investor expectations  
4 going forward. Exhibit \_\_\_\_ (RAB-8) presents the calculation of the market returns  
5 using the historical data.

6 **Q. Please explain how this historical risk premium is calculated.**

7 A. Exhibit \_\_\_\_ (RAB-8) shows both the geometric and arithmetic average of yearly  
8 historical stock market returns over the historical period from 1926 - 2017. The  
9 average annual income return for 30-year Treasury bond is subtracted from these  
10 historical stock returns to obtain the historical market risk premium of stock returns  
11 over long-term Treasury bond income returns. The historical market risk premium  
12 range is 5.2% - 7.1%.

13 **Q. Did you add an additional measure of the historical risk premium in this case?**

14 A. Yes. Duff and Phelps reported the results of a study by Dr. Roger Ibbotson and Dr.  
15 Peng Chen indicating that the historical risk premium of stock returns over long-term  
16 government bond returns has been significantly influenced upward by substantial  
17 growth in the price/earnings (“P/E”) ratio for stocks from 1980 through 2001.<sup>20</sup> Duff  
18 and Phelps noted that this growth in the P/E ratio for stocks was subtracted out of the  
19 historical risk premium because “it is not believed that P/E will continue to increase  
20 in the future.” The adjusted historical arithmetic market risk premium is 6.04%, which

---

<sup>20</sup> 2018 SBBI Yearbook, Duff and Phelps, pp. 10-28 through 10-30.

1 I have also included in Exhibit \_\_\_\_ (RAB-8). This risk premium estimate falls near  
2 the middle of the market risk premium range.

3 **Q. How did you determine the risk free rate?**

4 A. I used the average yields on the 30-year Treasury bond and five-year Treasury note  
5 over the six-month period from September 2018 through February 2019. The 30-year  
6 Treasury bond is often used by rate of return analysts as the risk-free rate, but it  
7 contains a significant amount of interest rate risk. The five-year Treasury note carries  
8 less interest rate risk than the 30-year bond and is more stable than short-term Treasury  
9 bills. Therefore, I have employed both securities as proxies for the risk-free rate of  
10 return. This approach provides a reasonable range over which the CAPM return on  
11 equity may be estimated.

12 **Q. How did you determine the value for beta?**

13 A. I obtained the beta values for the companies in both proxy groups from Value Line.  
14 The average beta for each group is 0.69, which is the number I used in my CAPM  
15 analysis.

16 **Q. Please summarize the CAPM results.**

17 A. From Exhibit \_\_\_\_ (RAB-7), my forward-looking CAPM return on equity estimates  
18 are 9.22% - 9.35%. Using historical risk premiums in Exhibit \_\_\_\_ (RAB-8), the  
19 CAPM results are 6.74% - 8.05%.

1 **Conclusions and Recommendations**

2 **Q. Please summarize the cost of equity results for your DCF and CAPM analyses.**

3 A. Table 3 below summarizes my return on equity results using the DCF and CAPM for  
4 the proxy groups.

<b>TABLE 3</b>	
<b>Summary Of ROE Estimates</b>	
Constant Growth DCF:	
<u>Water Utility Group</u>	
Average Growth Rates	
- High	10.65%
- Low	8.25%
- Average	9.33%
Median Growth Rates:	
- High	10.95%
- Low	7.92%
- Average	9.44%
<u>Combined Utility Group</u>	
Average Growth Rates	
- High	10.29%
- Low	8.38%
- Average	9.02%
Median Growth Rates:	
- High	11.49%
- Low	8.45%
- Average	9.27%
CAPM:	
- 5-Year Treasury Bond	9.22%
- 30-Year Treasury Bond	9.35%
- Historical Returns	6.74% - 8.05%

5

6 **Q. What is your recommended return on equity for KAW?**

7 A. My independent analyses of the return on equity for KAW indicate a reasonable  
8 investor required ROE in the range of 9.02% - 9.27% based on the DCF analyses I  
9 performed. My recommended ROE for KAW is 9.15%, which is the midpoint of the

1 range of DCF results for the CUPG. I explained in Section II of my testimony why I  
2 believe that the larger CUPG likely produces a more reasonable result than the smaller  
3 Water Proxy Group, although the results for both proxy groups are quite close. In my  
4 opinion, a ROE of 9.15% is reasonable for a low-risk water distribution company such  
5 as KAW.

6 **Q. How does KAW's requested common equity ratio compare to the proxy group**  
7 **equity ratios?**

8 A. Ms. Bulkley examined the common equity ratios of the Water Utility Group and the  
9 CUPG and presented her conclusions on page 78 of her Direct Testimony. She  
10 concluded that KAW's requested common equity ratio of 48.654% is reasonable, if  
11 not conservative. Likewise, Company witness Rungren testified that KAW's  
12 requested capital structure "compares favorably to the proxy groups used by Company  
13 witness Ann E. Bulkley to derive her cost of equity estimate for KAWC in this case."<sup>21</sup>

14  
15 I conclude that KAW's requested common equity ratio is comparable to the CUPG  
16 and does not pose any significant additional financial risk to the Company.

17 **Q. How does KAW's current cost of debt compare with the average public utility**  
18 **bond yield from the Mergent Bond Record?**

19 A. In answering this question, I should point out that AG/LFUCG witness Lane Kollen  
20 will address in detail his recommended cost of new debt in the Company's capital  
21 structure. My purpose here is to show that given the credit spread used by Mr. Rungren

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<sup>21</sup> Application, Rungren Direct, at 5.

1 to calculate KAW's proposed cost of new debt, there is no additional risk premium  
2 being paid by KAW compared to the current average cost of public utility debt.

3  
4 On page 8 of his Direct Testimony, Mr. Rungren explained that he added a credit  
5 spread of 1.12% to the projected yield on a 30-year Treasury Bond to estimate the cost  
6 of debt that AWCC would incur for its planned issuance in May 2019. If one adds the  
7 1.12% credit spread to the February 2019 30-Year Treasury Bond yield of 3.02%, the  
8 resulting yield for AWCC and KAW would be 4.14%. This yield is lower than the  
9 February 2019 average public utility bond yield of 4.35% shown in my Table 1. This  
10 shows that KAW is not paying any sort of additional risk premium for its cost of long-  
11 term debt compared to the average regulated utility debt cost. Therefore, Kentucky  
12 ratepayers should not pay any additional risk premium for KAW's allowed ROE in  
13 this case.

#### 14 **IV. RESPONSE TO KAW ROE TESTIMONY**

15 **Q. Please summarize Ms. Bulkley's approach to return on equity.**

16 A. Ms. Bulkley's recommended ROE range is 10.0% to 10.80%, with a recommended  
17 ROE for KAW of 10.8%, the extreme top of the range. Ms. Bulkley used two models  
18 to estimate the cost of equity for KAW: the CAPM and the DCF. The results of her  
19 analyses are included in Figure 1, pages 6 and 7 of her Direct Testimony.

20  
21 With respect to the CAPM, Ms. Bulkley used one current and two projected risk-free  
22 rates and betas from Value Line and Bloomberg to estimate the CAPM for the Water  
23 Proxy Group ("WPG") and the CUPG, both including and excluding AWW. Her

1 CAPM results for the WPG ranged from 12.41% to 13.28%. The results for the CUPG  
2 ranged from 11.31% to 12.14%.

3  
4 With respect to the DCF model, Ms. Bulkley presented results for the two proxy  
5 groups using a 180-day average of stock prices as well as projected prices for the  
6 period 2021 – 2023. She also examined projected equity returns from Value Line for  
7 the period 2021 – 2023. For the WPG, her median DCF results ranged from 8.36% to  
8 9.71%. For the CUPG the results ranged from 9.29% to 9.68%. Projected equity  
9 returns for the WPG ranged from 12.50% to 13.0%.

10 **Q. Before you proceed to the particulars of your review of Ms. Bulkley's analyses,**  
11 **what are your overall conclusions with respect to her recommended ROE range?**

12 A. First and foremost, Ms. Bulkley's CAPM results are so exceedingly high that they  
13 should be rejected out of hand by the Commission. Even the lower end of the range  
14 of her CAPM results, 11.31%, far exceeds recent allowed returns for the operating  
15 companies within AWW. Table 4 below shows the most recent authorized ROEs for  
16 the AWW operating companies as provided by KAW in its response to the  
17 Commission Staff's Second RFI, No. 89. I also include this response as Exhibit  
18 \_\_\_\_ (RAB-9).



**TABLE 4****American Water Works Authorized ROEs**

	<u>Date</u>	<u>Comm. Allowed ROE</u>
California American Water Company	3/22/18	9.20%
Georgia American Water Company	N/A	N/A
Hawaii American Water Company	11/21/11	10.20%
Illinois American Water Company	12/13/16	9.79%
Indiana American Water Company	1/28/15	9.75%
Iowa American Water Company	2/27/17	9.60%
Kentucky American Water Company	8/28/16	Not specified
Maryland American Water Company	5/26/15	10.00%
Michigan American Water Company	N/A	N/A
Missouri American Water Company	5/28/18	Not specified
New Jersey American Water Company	10/29/18	9.60%
New York American Water Company	5/18/17	9.10%
Pennsylvania American Water Company	1/1/18	Not specified
Tennessee American Water Company	11/20/12	10.00%
Virginia American Water Company	5/17	9.25%
West Virginia American Water Company	2/16	9.75%
Average ROE Award		9.66%

Source: KAW response to Commission Staff's 2nd RFI, No. 89

1

2

3

Please note that I provided the “Not specified” values to replace the numbers included by the Company in its response. This was because of settlements in which the ROE was not specified or agreed to. The ROE values the Company included in this response were its calculations of the ROE that would have resulted from its assumptions, but they were not authorized by the Commission in those cases.

8

9

The Commission-authorized ROEs ranged from 9.10% to 10.20% with an average of 9.66%. The highest value, 10.20%, was authorized in 2011 and even this value is

10

1 substantially less than the lowest CAPM ROE calculated by Ms. Bulkley. It is also  
2 60 basis points lower than Ms. Bulkley's recommended ROE for KAW.

3  
4 Turning to her DCF results, the median values for the CUPG are well within the range  
5 of allowed ROEs in Table 4, as is the top of her DCF range for the WPG. Yet, Ms.  
6 Bulkley apparently excluded the entirety of her median DCF results in formulating her  
7 recommended ROE range to the Commission.

8  
9 To conclude my preliminary comments, Ms. Bulkley's CAPM results provide no  
10 useful information to the Commission regarding the investor required ROE for a low-  
11 risk water utility such as KAW. Even the lowest CAPM result calculated by Ms.  
12 Bulkley is unreasonably high. I recommend that the Commission discard Ms.  
13 Bulkley's CAPM results and instead look to the DCF model for more helpful  
14 information on the authorized ROE for the Company in this case.

15 **Q. Would Ms. Bulkley's recommended ROE of 10.80% harm Kentucky ratepayers?**

16 A. It most certainly would. I estimate that Ms. Bulkley's recommended ROE of 10.80%  
17 would cost Kentucky ratepayers an additional yearly amount of \$4.755 million in their  
18 rates compared to my 9.15% ROE recommendation.

19 **Q. On page 9 of her Direct Testimony, Ms. Bulkley recommended that the allowed**  
20 **ROE reflect forward looking assumptions, such as the forecasted risk-free rate**  
21 **in her CAPM. Please address this recommendation.**

22 A. In Section II of my Direct Testimony I explained why regulators should rely on  
23 current, not forecasted interest rates for the determination of the allowed ROE. We  
24 don't know if, when or how much 30-Year Treasury Bonds will increase this year,

1 much less next year. In fact, my Table 1 shows that 30-Year Treasury yields increased  
2 to 3.36% in November 2018, then declined to 3.02% in February of this year. The  
3 Federal Reserve appears to be putting its increases in the federal funds rate on hold for  
4 now as well. I believe that the Commission would be well advised to consider current  
5 data, which includes current stock prices and bond yields in making its ROE  
6 determination in this case.

7 **Q. Beginning on page 69 of her Direct Testimony, Ms. Bulkley presented a discussion**  
8 **of business risks that she contended should be considered in considering where**  
9 **KAW's ROE should fall within her recommended range of result. Please**  
10 **summarize your understanding of these considerations.**

11 A. Ms. Bulkley presented the risks and other considerations that she believes should be  
12 taken into account in setting the allowed cost of equity for KAW. These risks  
13 considerations include:

- 14 • KAW capital expenditure program (pages 70 through 74)
- 15 • Revenue decoupling (page 74)
- 16 • Future test year (page 75)
- 17 • Effect of the proposed QIP

18 Ms. Bulkley concluded on pages 75 and 76 of her Direct Testimony that if rates in this  
19 proceeding are set using a future test year, then the Company has comparable risk to  
20 the proxy groups. She also concluded that KAW has higher risk in terms of not having  
21 a revenue decoupling mechanism. Finally, Ms. Bulkley concluded that if the  
22 Commission does not approve the QIP, then KAW has higher risk than the proxy  
23 groups due to its significant capital expenditure program.

24 **Q. Please respond to Ms. Bulkley's view of KAW's risk vis-à-vis the two proxy**  
25 **groups you both used to estimate the ROE.**

1 A. I disagree with Ms. Bulkley's assessment of the relative risks of the proxy groups and  
2 KAW.

3  
4 First, with respect to the use of a future test year, KAW has slightly less risk than the  
5 proxy groups because not all of the companies in the proxy groups utilize future test  
6 years. Ms. Bulkley's analysis indicated that 58% of the WPG and 50% of the  
7 companies in the CUPG use future test years. Thus, considering these groups as a  
8 whole, they have slightly more risk than KAW. The Commission has consistently  
9 allowed the use of a future test year.

10  
11 Second, with respect to the use of revenue decoupling, KAW did not request revenue  
12 decoupling in this proceeding. It is inappropriate to give KAW a higher ROE than the  
13 midpoint of the CUPG range due to a factor that the Company did not otherwise  
14 mention in this case.

15  
16 Third, as I described earlier in my testimony, KAW has not suffered any adverse  
17 consequences from not having a QIP or distribution investment surcharge in its rates.  
18 In fact, the resolution of KAW's last rate case resulted in a withdrawal of its request  
19 for a QIP-type mechanism. The Company has earned robust common equity returns  
20 since 2017 without the QIP, and the use of a future test year in this case will enable  
21 KAW to include infrastructure investments through June 30, 2020.

22  
23 Fourth, with respect to KAW's capital expenditure program it is up to the Company  
24 to prudently manage its expenditures and the timing of its rate cases to ensure that it

1 collects its prudent costs of providing service to its ratepayers while maintaining a  
2 competitive return on its investments. Although KAW does indeed have a significant  
3 projected capital expenditure program, KAW's use of a future test year can mitigate  
4 the risk of this program.

5  
6 In conclusion, Ms. Bulkley has not shown that KAW's ROE should be set at the upper  
7 end of a recommended ROE range because of additional risks that she described. I  
8 continue to recommend that the Commission use the midpoint of the ROE range from  
9 the DCF results for the CUPG I presented in Section III of my testimony.

10 **Q. Should the Commission consider raising KAW's ROE to reflect any effects from**  
11 **the Tax Cut and Jobs Act ("TCJA")?**

12 A. No. The TCJA was discussed in the credit reports from Moody's and S&P and is thus  
13 accounted for in AWW's A3/A rating. Given that KAW does not have credit ratings  
14 of its own, it is reasonable to assume that the Company would carry a similar credit  
15 rating as its parent company. Since AWW's credit ratings fall within the range of  
16 credit ratings for the companies in the CUPG, no additional consideration need be  
17 given for the effect of the TCJA on KAW's allowed ROE.

18 **DCF**

19 **Q. Briefly summarize Ms. Bulkley's approach to the DCF model.**

20 A. Ms. Bulkley used 30-, 90-, and 180-day periods to average stock prices for the  
21 companies in the WPG and CUPG and utilized forecasted earnings growth from Value  
22 Line, Zacks, and Yahoo! Finance. She also used forecasted stock prices from Value  
23 Line to calculate forecasted DCF results for the two proxy groups. Finally, Ms.

1 Bulkley reported Value Line's forecasted ROEs for the two proxy groups for the  
2 period 2021 – 2023.

3  
4 Ms. Bulkley also adjusted DCF results for the WPG and CUPG by excluding certain  
5 low-end ROE results that were less than 7.0%. She did not make any exclusions for  
6 excessively high ROE results. She described her method of excluding ROE estimates  
7 beginning on page 57 of her Direct Testimony.

8 **Q. Is Ms. Bulkley's approach to excluding low-end DCF results from her two proxy**  
9 **groups reasonable?**

10 A. No. Ms. Bulkley's approach is asymmetric and biased because it only excludes DCF  
11 results that fall below 7.0%. She made no attempt to examine and exclude excessively  
12 high DCF estimates from her proxy groups. This one-sided approach to excluding  
13 DCF results overstates the median and mean values in her analyses.

14  
15 I have identified certain of Ms. Bulkley's DCF estimates that should be excluded due  
16 to the fact that they are excessively high:

- 17 • Referring to Attachment AEB-2, the mean ROE results for Northwest Natural  
18 Gas Company range from 16.14% - 16.42%. The mean ROE results for South  
19 Jersey Industries range from 14.70% - 15.02%.
- 20 • Referring to Attachment AEB-4, the mean ROE result for Northwest Natural  
21 Gas Company is 17.01% and for South Jersey Industries is 15.31%.

22 Given the Commission-authorized returns I presented in Table 4, there is no question  
23 that these DCF estimates calculated by Ms. Bulkley are extreme outliers and merely  
24 serve to inflate the median and mean estimates for the CUPG.

1 **Q. Did you calculate the average DCF results for the CUPG in Attachments AEB-2**  
 2 **and AEB-4 excluding the excessively high DCF results you just presented?**

3 A. Yes. Excluding the unreasonably high DCF estimates in Attachment AEB-2 results  
 4 in a group average DCF in the range of 9.09% - 9.24%. Excluding the unreasonably  
 5 high DCF estimates in Attachment AEB-4 results in a group average DCF estimate of  
 6 9.47. These results all include AWW. Please refer to Table 5 below for the details of  
 7 these calculations.

**TABLE 5**  
**Bulkley CUPG DCF Results Excluding High-End Outliers**

	30-Day <u>DCF</u>	90-Day <u>DCF</u>	180-Day <u>DCF</u>	Projected <u>DCF</u>
American States Water	7.21%	7.25%	7.33%	8.17%
American Water Works	10.78%	10.84%	10.89%	11.49%
Atmos Energy	9.14%	9.19%	9.29%	9.34%
California Water Service Group	10.66%	10.69%	10.73%	11.27%
Middlesex Water Company	7.31%	7.40%	7.56%	8.03%
New Jersey Resources	10.50%	10.56%	10.72%	10.44%
Northwest Natural Holding Co.	16.14%	16.26%	16.42%	17.01%
ONE Gas, Inc.	9.60%	9.72%	9.87%	9.64%
South Jersey Industries	14.70%	14.77%	15.02%	15.31%
Southwest Gas Holdings	8.36%	8.41%	8.55%	8.72%
Spire, Inc.	8.08%	8.19%	8.26%	7.86%
York Water Company	9.23%	9.16%	9.16%	9.71%
<b>Average (Mean)</b>	9.09%	9.14%	9.24%	9.47%
<b>Median</b>	9.18%	9.17%	9.23%	9.49%

Source: Attachments AEB-2 and AEB-4,  
 Northwest Natural Holding Co. and South Jersey Industries excluded

8

9 **Q. Attachments AEB-3 and AEB-4 contain DCF analyses that utilize Value Line's**  
 10 **projected stock prices for the companies in the WPG and the CUPG for the**  
 11 **period 2021 – 2023. Should the Commission give these analyses any weight in**  
 12 **determining the allowed ROE for KAW in this proceeding?**

1 A. No. These projections have no role in the determination of the allowed ROE for KAW.  
2 This is because investors in today's marketplace cannot purchase the common stock  
3 of any of the companies in the proxy groups at Value Line's projected stock prices 3  
4 to 5 years into the future. Investors reveal their willingness and ability to pay for these  
5 stocks based on today's prices. If stockholders were certain that Value Line's  
6 projected prices were going to occur, then they likely would have already bid current  
7 stock prices to those levels. Using projected prices 3 – 5 years into the future is a  
8 highly speculative and inaccurate way to estimate the investor required return today.  
9 I strongly recommend that the Commission reject Ms. Bulkley's projected DCF  
10 analyses using forecasted stock prices.

11 **Q. Should the Commission consider Value Line's projected returns on book**  
12 **common equity presented in Attachment AEB-5?**

13 A. No, definitely not. Recently allowed ROEs for AWW's subsidiaries as well as the  
14 DCF ROE estimates using today's stock prices are all much lower than Value Line's  
15 forecasted ROEs in Attachment AEB-5. Investors are much more likely to be  
16 influenced by this current data in determining their expected ROEs for the companies  
17 in the two proxy groups.

18 **CAPM**

19 **Q. Briefly summarize the main elements of Ms. Bulkley's CAPM approach.**

20 A. On page 65 of her Direct Testimony, Ms. Bulkley explained that she used three  
21 different 30-Year Treasury Bond yields as proxies for the risk-free rate: the then-  
22 current yield of 3.09%, a forecasted yield for 2018 through 2020 of 3.52%, and a  
23 forecasted yield for 2020 through 2024 of 4.20%. She explained further on page 66



1 that she obtained beta values for the companies in the WPG and CUPG from  
2 Bloomberg and Value Line. Finally, Ms. Bulkley estimated the market return for the  
3 companies in the S&P 500 using a DCF model, the result of which was 15.19%.

4  
5 Figure 12 of her Direct Testimony shows that the CAPM results ranged from 11.31%  
6 to 13.28%.

7 **Q. Is it appropriate to use forecasted or projected bond yields in the CAPM?**

8 A. No. As I explained in Section II of my Direct Testimony, current interest rates and  
9 bond yields embody all the relevant market data and expectations of investors,  
10 including expectations of changing future interest rates. The forecasted bond yields  
11 used by Ms. Bulkley are speculative at best and may never come to pass. Current  
12 interest rates provide tangible and verifiable market evidence of investor return  
13 requirements today, and these are the interest rates and bond yields that should be used  
14 in both the CAPM analyses. Any expectations that investors may have regarding  
15 forecasted interest rates are already incorporated into current securities prices.

16 **Q. You noted earlier that Ms. Bulkley used forecasted 30-year Treasury bond yields**  
17 **of 3.52% and 4.20%. As of February 2019, the current yield was 3.02%. What**  
18 **does this suggest with respect to investors currently holding 30-year treasury**  
19 **bonds?**

20 A. It suggests that investors today should expect to incur huge capital losses in the value  
21 of their investments in long-term Treasury bonds, which suggests economic  
22 irrationality on their part. There is no sound basis for such an assumption.

23

1 The price of a bond moves in the opposite direction of its yield. In other words, given  
2 a certain current bond coupon and price, if the required yield on that bond increases  
3 then the price of the bond goes down. Alternatively, if the required yield declines then  
4 the price of the bond increases. This relationship can be illustrated with the following  
5 simplified example. Assume a current 30-year Treasury bond has a coupon of \$3.00  
6 and a price of \$100, resulting in a current yield of 3.00%. If interest rates were to rise  
7 in the economy such that the required yield on the 30-year Treasury increased to  
8 3.50%, then the price of our existing 30-year Treasury bond would fall to \$85.71 from  
9 \$100, given the coupon of \$3.00. This represents a loss to our current bond investor  
10 of 14.30%.

11  
12 The point here is that if investors were certain that there would soon be a substantial  
13 increase in interest rates, the rational response would be to immediately discount what  
14 they were willing to pay currently for the 30-year Treasury bond rather than pay \$100  
15 and suffer certain significant losses to the value of their bonds.

16 **Q. Should Ms. Bulkley have considered shorter-term Treasury yields in her CAPM**  
17 **analyses?**

18 A. Yes. In theory, the risk-free rate should have no interest rate risk. 30-year Treasury  
19 Bonds do tend to face interest rate risk, which is the risk that interest rates could rise  
20 in the future and lead to a capital loss for the bondholder. Typically, the longer the  
21 duration of the bond, the greater the interest rate risk. The 5-year Treasury note has  
22 much less interest rate risk than the 30-year Treasury Bond and may be considered one  
23 reasonable proxy for a risk-free security.

1 **Q. Turning to Ms. Bulkley’s estimate of the market required rate of return, how**  
2 **does her estimate compare to yours?**

3 A. My estimates of the market required return are as follows:

- 4 • Value Line 3-5 Year Total Return: 13.0%
- 5 • Value Line Growth Rates: 11.32%
- 6 • S&P Average Historical Returns: 10.2% - 12.1%

7 Ms. Bulkley's lone market return estimate of 15.19% is extraordinarily high compared  
8 to historical norms and is far higher than the two forward-looking market return  
9 estimates I presented. I recommend that the Commission give Ms. Bulkley's inflated  
10 market return little weight in this proceeding.

#### 11 **V. KAW PROPOSED QUALIFIED INFRASTRUCTURE PROGRAM**

12 **Q. Please summarize KAW’s proposed QIP and associated rider.**

13 A. KAW witness Brent O’Neill provided the details of the Company’s QIP in his Direct  
14 Testimony. KAW witness Melissa Schwarzell provided the details of the QIP rider in  
15 her Direct Testimony. It is not the purpose of my testimony in this case to address the  
16 reasonableness or prudence of the Company’s proposed QIP as described by Mr.  
17 O’Neill. Rather, I will address the specifics of the rider mechanism as described by  
18 Ms. Schwarzell and the regulatory principles that should guide the Commission’s  
19 consideration as to whether the rider should be approved in this case.

20

21 Beginning on page 31 of her Direct Testimony Ms. Schwarzell listed some of the key  
22 points in terms of how the QIP rider would operate as follows:

- 23 • The rider would collect only “qualified, non-revenue producing plant  
24 investment” that is incremental to recovery in the most recent base rate case.

- 1           • The QIP rider surcharge would be established on an annual prospective basis,  
2           which means a forecast would be used. Annual filings would be made at least  
3           90 days prior to the commencement of the annual QIP period.
- 4           • The Annual Filing would list each QIP project “for the Commission’s review”  
5           for eligibility and prudence.
- 6           • The Annual Filing would include the total revenue requirement associated with  
7           the proposed projects and a QIP Percentage that would be charged to  
8           customers.
- 9           • KAW’s proposed QIP mechanism would include a Balancing Adjustment  
10          Filing to be made within 90 days after the conclusion of each QIP period. The  
11          Balancing Adjustment would be the difference between actual billed revenues  
12          from the rider and the actual revenue requirement. This difference would be  
13          the balancing adjustment percentage. The balancing adjustment percentage  
14          would be added to or subtracted from the current QIP percentage rate and the  
15          resulting balanced QIP rate would then go into effect 180 days after the end of  
16          the prior QIP period.
- 17          • The QIP rider would be reset to zero as of the effective date of new based rates  
18          from future filed rate proceedings.

19 **Q. What is your recommendation with respect to the Company’s proposed QIP**  
20 **rider?**

21 A. I recommend that the Commission reject KAW’s proposed QIP rider.

22

23 **Q. In general terms, please explain why the Company's proposed QIP rider should**  
24 **be rejected.**

1 A. I am not in favor of automatic adjustment clauses, such as the QIP, as a general matter.  
2 Automatic adjustment clauses that allow the pass-through of capital costs simply do  
3 not allow the requisite amount of regulatory scrutiny needed, such as that received in  
4 full rate proceeding. In a rate case the Commission, its Staff, and other parties have  
5 time to conduct a detailed examination and review all of the elements of a utility's  
6 revenue requirement to ensure that the costs ratepayers are required to pay are  
7 prudently incurred. KAW's proposed QIP would enable the Company to pass through  
8 significant new costs without the benefit of this detailed and necessary regulatory  
9 scrutiny. Although KAW, AWW, and its shareholders would certainly benefit from  
10 increased cash flows from such automatic clauses, ratepayers are far less assured that  
11 costs subject to this treatment are prudently incurred.

12

13 **Q. Let us now move to your specific conclusions with respect to KAW's proposed**  
14 **QIP. Please provide a summary of the major problems and defects of the**  
15 **Company's proposal.**

16 A. The defects inherent in KAW's proposed QIP are as follows:

17

18 1. First and foremost, KAW failed to show that its proposed QIP rider is  
19 necessary.

20 2. KAW's proposed categories of QIP-eligible plant are overly broad and  
21 represent a significant expansion of the Distribution System Investment Charge  
22 ("DSIC") that this Commission rejected in Case No. 2012-00520.

23 3. KAW's proposed QIP fails to include an adequate review process that would  
24 ensure reasonableness of costs for eligible facilities.

1           4.       KAW's proposed QIP fails to provide adequate protections to customers from  
2           unreasonable costs and unnecessary rate increases.

3   **Q.    To begin with, did KAW make a proper showing that a QIP of the magnitude it**  
4   **is proposing is necessary?**

5   A.    No. KAW failed to provide any evidence of financial need for the sort of expansive  
6    QIP it is proposing in this proceeding. Table 6 below shows KAW's earned ROEs  
7    from 2010 through 2018.

**TABLE 6**  
**KAW Historical ROE**

2010	9.34%
2011	11.69%
2012	9.22%
2013	7.90%
2014	9.48%
2015	8.71%
2016	9.93%
2017	10.94%
2018	9.54%

Source: AG First RFI, No. 55  
2018 ROE is preliminary

8  
9       Exhibit \_\_\_(RAB-2) also shows that KAW earned robust ROEs throughout 2017 and  
10      2018 without a QIP. For all of 2017 and much of 2018, KAW earned more than its  
11      last Commission-authorized ROE of 9.7%. During these years KAW apparently was  
12      able to continue to invest in its system and provide reliable service to its Kentucky  
13      customers. Furthermore, thanks to the Commission's consistent use of a future test  
14      year for KAW, the Company is able to include projected system investments through  
15      June 30, 2020 in its test year in this case.

16

1 Historical experience shows that KAW has been able to provide reliable service to its  
2 customers without diminished rates of return from ongoing system investments.

3 **Q. With respect to water main breaks, has KAW experienced an increase in the**  
4 **frequency of water main breaks and leaks over the last 10 years?**

5 A. No. Please refer to Exhibit \_\_\_(RAB-10), which contains the Company's response to  
6 the AG's First Request for Information, No. 85. The response noted: "KAWC's  
7 frequency of water main breaks and leaks has varied over the past 10 years and it is  
8 difficult to determine a trend from year to year over that period due to the impact of a  
9 variety of factors on main breaks that leads to leaks." From this data provided by the  
10 Company, KAW cannot justify a QIP rider based on increasing water main breaks and  
11 leaks over the last 10 years.

12 **Q. Does KAW recognize its ongoing responsibility and commitment to**  
13 **infrastructure replacement even without a QIP rider?**

14 A. Yes. Exhibit \_\_\_(RAB-11) contains KAW's response to the AG's First Set of RFI,  
15 No. 91. The Company's response noted the following:

16 As Mr. Rowe and Mr. O'Neill note, while the Company has made  
17 strides toward reducing the pipe replacement cycle and achieving a  
18 robust infrastructure program, more progress needs to be made.  
19 Likewise, the Commission has consistently allowed general rate case  
20 recovery of critical water infrastructure investment in Kentucky and  
21 has utilized a forecasted test year for many years.  
22

23 Like any regulated utility, KAW has a responsibility to make ongoing investments in  
24 its system in order to provide ratepayers safe and reliable service at just and reasonable  
25 rates. This is the case whether or not the Commission grants KAW a QIP rider. The  
26 Commission has made this ongoing responsibility easier with the use of a future test  
27 period since 1992. Thus, KAW has not shown why the Commission should deviate

1 from it past practice of utilizing traditional rate cases with future test periods as the  
2 most reasonable way to collect revenues associated with system infrastructure  
3 replacements.

4 **Q. Regarding your second point, you noted that KAW's proposed QIP rider is**  
5 **overly broad and represents a significant expansion of the DSIC that the**  
6 **Commission rejected in Case No. 2012-00520. Please provide additional support**  
7 **for this statement.**

8 A. Please refer to Exhibit \_\_\_(RAB-12). This exhibit contains the Company's response  
9 to the Commission Staff's Third Request for Information, No. 45. The Staff requested  
10 that the Company provide a comparison between the DSIC the Company proposed in  
11 Case No. 2012-00520 and the proposed QIP rider in this case.

12  
13 The response shows that KAW's proposed QIP in this case has greatly expanded on  
14 the number of eligible plant accounts from its prior proposed DSIC. In its prior  
15 proposal, KAW proposed including only 4 plant accounts for eligible recovery. In this  
16 case, KAW proposed that 13 accounts be included for eligible recovery. In addition,  
17 the Company's prior DSIC proposal had a cumulative cap on rate increases of 10%.  
18 The current QIP rider proposal has no cap on rate increases, either cumulative or  
19 yearly.

20  
21 Indeed, the proposed QIP and associated rider represent a large increase in the number  
22 of eligible plant accounts and the eligible investment spending from the DSIC that was  
23 rejected by the Commission. In addition, there is no cap on the total amount of rate  
24 increases, either yearly or in total, which could be passed through to ratepayers from  
25 the QIP rider.



1 **Q. Did KAW provide any estimate of the revenue or rate impact of its proposed**  
2 **QIP?**

3 A. KAW provided a sample revenue requirement for the first five years of the QIP in  
4 response to the AG's First Request For Information, No. 61. This forecast is based on  
5 the Company's current forecasted spending level, the cost of capital requested by the  
6 Company in this case, and assumes the QIP structure and mechanics as recommended  
7 by the Company. KAW qualified the calculation, noting that the revenue requirement  
8 impact of the QIP during the first five years of the program "will depend on a number  
9 of variables."

10  
11 Exhibit \_\_\_\_ (RAB-13) contains the spreadsheet submitted by the Company. By Year  
12 5 of the proposed QIP, Kentucky ratepayers would be paying \$9.3 million of additional  
13 charges through the QIP rider. Of course, as the Company stated in its response, this  
14 is an estimate at this time. Given KAW's future test year sales revenues at present  
15 rates of \$85.481 million, the additional projected revenues from the QIP represent an  
16 additional rate increase of 10.9%.

17 **Q. Regarding your third point, does the Company's proposed QIP provide for a**  
18 **reasonable review process to ensure that QIP-eligible costs are prudently**  
19 **incurred?**

20 A. No. KAW's proposed QIP lacks a mechanism for Commission, Staff, and intervenor  
21 review to determine if costs passed through the QIP have been prudently incurred.  
22 The additional QIP-qualified investments would be passed through to customers with  
23 a limited initial review period of 90 days before the costs, which are forecasted, would  
24 be included in the QIP rider. Forecasted costs would be trued up with the Balancing  
25 Adjustment. However, the review period of 90 days is not only too short to allow for

1 a prudence and reasonableness determination, the costs would be presented on a  
2 forecasted basis. The Commission, Staff, and intervenors would have no opportunity  
3 to review the actual costs being collected from ratepayers during the QIP rider period  
4 each year. There may be an opportunity after the filing of the Balancing Adjustment,  
5 but the Company provided no proposed review process that would allow for a  
6 thorough review of costs. Neither is there any process for discovery, testimony filing,  
7 and adjudication before the Commission for the Staff and other parties to challenge  
8 the prudence and reasonableness of the QIP costs.

9 **Q. Regarding your fourth point, please expand upon the lack of customer**  
10 **protections from unreasonable costs and rate increases.**

11 A. I have touched on this point already in my prior responses. As proposed, KAW's QIP  
12 and associated rider provide an essentially open-ended means through which KAW  
13 can pass through costs associated with 13 different plant accounts with limited review  
14 by Staff and intervenors, no process for challenging those costs, no cap on yearly rate  
15 increases, and no cap on cumulative rate increases. KAW's proposed QIP tips the  
16 scales heavily in favor of shareholders and against Kentucky ratepayers. I recommend  
17 that the Commission reject the Company's proposed QIP and associated rider.

18 **Q. If the Commission were to consider implementing a QIP-type of rider mechanism**  
19 **in this case, what are the major points that should be considered and thoroughly**  
20 **evaluated before its implementation in Kentucky?**

21 A. Most importantly, it is vital to consider Kentucky's experience with this type of rider  
22 with Atmos Energy Corporation. Atmos' Pipeline Replacement Rider ("PRP") was  
23 approved in Case No. 2009-00354 and included a forecasted test period with annual  
24 updates and short review times for parties and the Commission. Atmos initially stated

1 the program was to be for 15-years and replace 250 miles of bare steel pipe and  
2 services at an estimated cost of \$124 million. As the Commission noted in its Order  
3 in Case No. 2017-00349, Atmos later informed the Commission that there would be  
4 350 miles to replace at a cost of \$438 million.<sup>22</sup> The Commission acknowledged that  
5 pipeline replacement programs have been in the public interest due to the fact they  
6 alleviate actual safety concerns.<sup>23</sup> Nevertheless, the Commission determined it needed  
7 to cap the annual cost of the PRP due to the utilities' escalating investment costs and  
8 also required recovery be on a historic, not a forecasted, period.<sup>24</sup>

9  
10 The concerns I expressed earlier with capital riders generally were realized by the  
11 Commission as it relates to Atmos Energy. The scope and cost of Atmos' original  
12 PRP escalated significantly and required additional Commission consideration,  
13 evaluation, and ultimate revision to the PRP. If the Commission approves a QIP-type  
14 of mechanism over the AG's, LFUCG's and my recommendations, the Commission  
15 can look to its experience in Atmos, along with the following recommendations to  
16 ensure Kentucky ratepayers have certain essential protections.

17  
18 I recommend that the following principles and elements be part of any QIP that the  
19 Commission approves for KAW:

---

<sup>22</sup> Commission Order, *Electronic Application of Atmos Energy Corporation For An Adjustment Of Rates And Tariff Modifications*, Case No. 2017-00349, at 37–43 (May 3, 2018).

<sup>23</sup> *Ibid.*

<sup>24</sup> *Ibid.*

- 1           1.       The QIP should be limited to a 2-year Pilot Program.
- 2           2.       QIP-eligible facilities should be limited to distribution mains only that are non-  
3 revenue producing and non-expense reducing plant and that serve to replace existing  
4 plant.
- 5           3.       The yearly cap on QIP-related rider rate increases from current authorized  
6 tariff rates should be limited to 2.5%. The cumulative cap on customer QIP-related  
7 rate increases over currently authorized tariff rates should be limited to 5%.
- 8           4.       The return on equity for QIP-eligible facilities should be reduced by 1% from  
9 the Commission's authorized ROE in this case.
- 10          5.       KAW should be required to file a base rate proceeding within 2 years of QIP  
11 rider implementation. At that time, the QIP rider should be reset to zero and all  
12 facilities included in the QIP rider should be included in base rates.
- 13          6.       KAW should only be allowed to include QIP-related costs in its rider on an  
14 historical cost basis, not a prospective or forecasted basis.
- 15          7.       The Commission should allow for a reasonable review process of costs  
16 included in KAW's QIP filing so that Staff and intervenors can review the costs,  
17 engage in discovery, and if necessary file testimony and exhibits challenging the  
18 Company's QIP filing.

19 **Q.    Please explain why the QIP rider should be limited to a 2-Year pilot program,**

20 A.    A 2-year Pilot QIP rider is a reasonable first step for the Commission, its Staff, and  
21 the other parties to gauge the effectiveness and workability of the QIP for KAW. It is  
22 important to bear in mind that a QIP rider represents a significant change in the way  
23 KAW has been regulated by the Commission. Further, the Commission has rejected

1 this type of mechanism in the past for KAW. If the Commission is persuaded by the  
2 evidence presented by the Company in this case, then I recommend that it take a  
3 careful and considered approach to implementing a QIP. The Company's open-ended  
4 approach to a QIP, where there is essentially no cut-off to its operation, should be  
5 rejected.

6 **Q. Why should investment costs collected through the QIP rider be limited to**  
7 **distribution mains?**

8 A. KAW's proposal to include costs covering 13 different plant accounts is an  
9 unreasonable expansion of its rejected DSIC proposal. If the replacement of older  
10 mains on the Company's system is a priority, then only those older mains that that do  
11 not produce new and expanded revenues for the Company should be included at the  
12 initial stage of a QIP rider program. This represents a measured approach that should  
13 both help the Company accelerate its main replacement program and limit the ongoing  
14 yearly rate increases Kentucky ratepayers would have to pay.

15 **Q. Please explain why the QIP rider should have yearly and cumulative rate caps.**

16 A. Kentucky ratepayers need to be protected from excessive future rate increases that may  
17 flow through a QIP rider. KAW's proposed QIP rider provides no such protection. In  
18 order to mitigate future rate increases to Kentucky ratepayers, I recommend that the  
19 yearly increase to the Company's tariff rates from a QIP rider be limited to 2.5% and  
20 that the total cumulative increase be limited to 5%. The 2.5% yearly increase is  
21 slightly greater than the rate of inflation, which was 1.9% in 2018, and in my opinion  
22 is a reasonable yearly increase for rates under the QIP, if the Commission should  
23 approve such a mechanism.

1 **Q. Why should the ROE for QIP-eligible facilities be reduced by 1%?**

2 A. A reduction in the return on common equity for QIP-eligible plant recognizes an  
3 important balancing of interests between shareholders and ratepayers. A QIP  
4 mechanism represents a shift in the current regulatory paradigm in favor of the utility's  
5 shareholders. QIP-eligible plant will be receiving a current return as well as  
6 depreciation treatment in an expedited manner when compared with a traditional rate  
7 case. Such treatment is a clear benefit to shareholders, other things held equal.  
8 Therefore, it is reasonable for the Commission to recognize a reduction in the return  
9 on equity for plant included in KAW's QIP rider. A reduction of 1% is a reasonable  
10 and conservative adjustment and assists in mitigating the rate impact to customers  
11 during the effective period of the QIP rider. Once KAW files for a base rate case,  
12 plant included in the QIP rider should be rolled into its rate base and receive a full  
13 return on equity.

14 **Q. Explain the basis for requiring KAW to file a base rate case no later than 2 years**  
15 **after the implementation of the QIP.**

16 A. At some point, the Commission should assess the workability and reasonableness of a  
17 QIP rider within a base rate case proceeding. The Company's proposed QIP has no  
18 provision for any such review by the Commission. Conceivably, KAW could stay out  
19 of a base rate case indefinitely, especially considering the expansive categories of plant  
20 that it intends to include in its proposed QIP. A requirement that KAW file a rate case  
21 within 2 years of the implementation of a QIP ensures that the Commission, Staff, and  
22 other parties can review the reasonableness of cost recovery from ratepayers.

23 **Q. Please explain why QIP-eligible investment should be recovered on an historical,**  
24 **rather than prospective basis?**

1 A. Historical costs would avoid the Balancing Adjustment filing envisioned in KAW's  
2 proposed QIP rider. Actual historical costs would also lead to more accurate review  
3 of QIP investment costs by the Commission, Staff, and other parties. KAW's proposal  
4 requires two sets of review each year: one for the initial yearly filing and another for  
5 the Balancing Adjustment. The Commission already affords KAW the opportunity of  
6 filing a future test period in its rate cases. Requiring the Company to file QIP-eligible  
7 costs on an historical basis is an important balancing of interests between shareholders  
8 and ratepayers.

9 **Q. Finally, please explain the importance of having a well-defined process for review**  
10 **and litigation of QIP rider costs.**

11 A. This really is a matter of all parties understanding the "rules of the game," so to speak,  
12 and to have a fair process in place for a complete review of costs being passed through  
13 to Kentucky ratepayers. This review period must allow for discovery by the parties,  
14 the filing of testimony by Staff and the intervenors, and adjudication by the  
15 Commission. It is unlikely that 90 days would be enough for such a process to take  
16 place. The Commission could allow the Company to file 90 days before the QIP rate  
17 goes into effect, subject to refund pending the outcome of the Commission's review.

18 **Q. Does this complete your Direct Testimony?**

19 A. Yes.

**BEFORE THE  
PUBLIC SERVICE COMMISSION OF THE  
COMMONWEALTH OF KENTUCKY**

**IN THE MATTER OF:** )  
 )  
**THE APPLICATION OF KENTUCKY-** ) **CASE NO. 2018-00358**  
**AMERICAN WATER COMPANY FOR AN** )  
**ADJUSTMENT OF RATES** )

**EXHIBITS  
OF  
RICHARD A. BAUDINO**

**ON BEHALF OF  
THE OFFICE OF THE ATTORNEY GENERAL  
&  
LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT**

**J. Kennedy and Associates, Inc.  
570 Colonial Park Drive, Suite 305  
Roswell, GA 30075**

**MARCH 15, 2019**



**AFFIDAVIT**

STATE OF GEORGIA        )


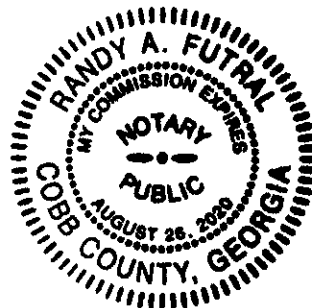
COUNTY OF FULTON        )

RICHARD A. BAUDINO, being duly sworn, deposes and states: that the attached is his sworn testimony and that the statements contained are true and correct to the best of his knowledge, information and belief.



Richard A. Baudino

Sworn to and subscribed before me on this  
15<sup>th</sup> day of March 2019.

  
\_\_\_\_\_  
Notary Public

**EXHIBIT \_\_\_\_ (RAB-1)**

## RESUME OF RICHARD A. BAUDINO

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### EDUCATION

#### **New Mexico State University, M.A.**

Major in Economics  
Minor in Statistics

#### **New Mexico State University, B.A.**

Economics  
English

Thirty-six years of experience in utility ratemaking and the application of principles of economics to the regulation of electric, gas, and water utilities. Broad based experience in revenue requirement analysis, cost of capital, rate of return, cost and revenue allocation, and rate design.

### REGULATORY TESTIMONY

Preparation and presentation of expert testimony in the areas of:

Cost of Capital for Electric, Gas and Water Companies  
Electric, Gas, and Water Utility Cost Allocation and Rate Design  
Revenue Requirements  
Gas and Electric industry restructuring and competition  
Fuel cost auditing  
Ratemaking Treatment of Generating Plant Sale/Leasebacks

## RESUME OF RICHARD A. BAUDINO

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### EXPERIENCE

1989 to

**Present:** Kennedy and Associates: Director of Consulting, Consultant - Responsible for consulting assignments in revenue requirements, rate design, cost of capital, economic analysis of generation alternatives, electric and gas industry restructuring/competition and water utility issues.

1982 to

**1989:** New Mexico Public Service Commission Staff: Utility Economist - Responsible for preparation of analysis and expert testimony in the areas of rate of return, cost allocation, rate design, finance, phase-in of electric generating plants, and sale/leaseback transactions.

### CLIENTS SERVED

#### Regulatory Commissions

Louisiana Public Service Commission  
Georgia Public Service Commission  
New Mexico Public Service Commission

#### Other Clients and Client Groups

Ad Hoc Committee for a Competitive Electric Supply System	Maryland Energy Group
Air Products and Chemicals, Inc.	Occidental Chemical
Arkansas Electric Energy Consumers	PSI Industrial Group
Arkansas Gas Consumers	Large Power Intervenors (Minnesota)
AK Steel	Tyson Foods
Armco Steel Company, L.P.	West Virginia Energy Users Group
Aqua Large Users Group	The Commercial Group
Assn. of Business Advocating Tariff Equity	Wisconsin Industrial Energy Group
Atmos Cities Steering Committee	South Florida Hospital and Health Care Assn.
Canadian Federation of Independent Businesses	PP&L Industrial Customer Alliance
CF&I Steel, L.P.	Philadelphia Area Industrial Energy Users Gp.
Cities of Midland, McAllen, and Colorado City	Philadelphia Large Users Group
Cities Served by Texas-New Mexico Power Co.	West Penn Power Intervenors
Climax Molybdenum Company	West Penn Power Intervenors
Connecticut Industrial Energy Consumers	Duquesne Industrial Intervenors
Crescent City Power Users Group	Met-Ed Industrial Users Gp.
Cripple Creek & Victor Gold Mining Co.	Penelec Industrial Customer Alliance
General Electric Company	Penn Power Users Group
Holcim (U.S.) Inc.	Columbia Industrial Intervenors
IBM Corporation	U.S. Steel & Univ. of Pittsburg Medical Ctr.
Industrial Energy Consumers	Multiple Intervenors
Kentucky Industrial Utility Consumers	Maine Office of Public Advocate
Kentucky Office of the Attorney General	Missouri Office of Public Counsel
Lexington-Fayette Urban County Government	University of Massachusetts - Amherst
Large Electric Consumers Organization	WCF Hospital Utility Alliance
Newport Steel	West Travis County Public Utility Agency
Northwest Arkansas Gas Consumers	Steering Committee of Cities Served by Oncor
	Utah Office of Consumer Services
	Healthcare Council of the National Capital Area
	Vermont Department of Public Service

**Expert Testimony Appearances  
of  
Richard A. Baudino  
As of March 2019**

<b>Date</b>	<b>Case</b>	<b>Jurisdict.</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
10/83	1803, 1817	NM	New Mexico Public Service Commission	Southwestern Electric Coop.	Rate design.
11/84	1833	NM	New Mexico Public Service Commission Palo Verde	El Paso Electric Co.	Service contract approval, rate design, performance standards for nuclear generating system
1983	1835	NM	New Mexico Public Service Commission	Public Service Co. of NM	Rate design.
1984	1848	NM	New Mexico Public Service Commission	Sangre de Cristo Water Co.	Rate design.
02/85	1906	NM	New Mexico Public Service Commission	Southwestern Public Service Co.	Rate of return.
09/85	1907	NM	New Mexico Public Service Commission	Jornada Water Co.	Rate of return.
11/85	1957	NM	New Mexico Public Service Commission	Southwestern Public Service Co.	Rate of return.
04/86	2009	NM	New Mexico Public Service Commission	El Paso Electric Co.	Phase-in plan, treatment of sale/leaseback expense.
06/86	2032	NM	New Mexico Public Service Commission	El Paso Electric Co.	Sale/leaseback approval.
09/86	2033	NM	New Mexico Public Service Commission	El Paso Electric Co.	Order to show cause, PVNGS audit.
02/87	2074	NM	New Mexico Public Service Commission	El Paso Electric Co.	Diversification.
05/87	2089	NM	New Mexico Public Service Commission	El Paso Electric Co.	Fuel factor adjustment.
08/87	2092	NM	New Mexico Public Service Commission	El Paso Electric Co.	Rate design.
10/87	2146	NM	New Mexico Public Service Commission	Public Service Co. of New Mexico	Financial effects of restructuring, reorganization.
07/88	2162	NM	New Mexico Public Service Commission	El Paso Electric Co.	Revenue requirements, rate design, rate of return.

**Expert Testimony Appearances  
of  
Richard A. Baudino  
As of March 2019**

<b>Date</b>	<b>Case</b>	<b>Jurisdiction</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
01/89	2194	NM	New Mexico Public Service Commission	Plains Electric G&T Cooperative	Economic development.
1/89	2253	NM	New Mexico Public Service Commission	Plains Electric G&T Cooperative	Financing.
08/89	2259	NM	New Mexico Public Service Commission	Homestead Water Co.	Rate of return, rate design.
10/89	2262	NM	New Mexico Public Service Commission	Public Service Co. of New Mexico	Rate of return.
09/89	2269	NM	New Mexico Public Service Commission	Ruidoso Natural Gas Co.	Rate of return, expense from affiliated interest.
12/89	89-208-TF	AR	Arkansas Electric Energy Consumers	Arkansas Power & Light Co.	Rider M-33.
01/90	U-17282	LA	Louisiana Public Service Commission	Gulf States Utilities	Cost of equity.
09/90	90-158	KY	Kentucky Industrial Utility Consumers	Louisville Gas & Electric Co.	Cost of equity.
09/90	90-004-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Cost of equity, transportation rate.
12/90	U-17282 Phase IV	LA	Louisiana Public Service Commission	Gulf States Utilities	Cost of equity.
04/91	91-037-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Transportation rates.
12/91	91-410-EL-AIR	OH	Air Products & Chemicals, Inc., Armco Steel Co., General Electric Co., Industrial Energy Consumers	Cincinnati Gas & Electric Co.	Cost of equity.
05/92	910890-EI	FL	Occidental Chemical Corp.	Florida Power Corp.	Cost of equity, rate of return.
09/92	92-032-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Cost of equity, rate of return, cost-of-service.
09/92	39314	ID	Industrial Consumers for Fair Utility Rates	Indiana Michigan Power Co.	Cost of equity, rate of return.

**Expert Testimony Appearances  
of  
Richard A. Baudino  
As of March 2019**

<b>Date</b>	<b>Case</b>	<b>Jurisdct.</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
09/92	92-009-U	AR	Tyson Foods	General Waterworks	Cost allocation, rate design.
01/93	92-346	KY	Newport Steel Co.	Union Light, Heat & Power Co.	Cost allocation.
01/93	39498	IN	PSI Industrial Group	PSI Energy	Refund allocation.
01/93	U-10105	MI	Association of Businesses Advocating Tariff Equality (ABATE)	Michigan Consolidated Gas Co.	Return on equity.
04/93	92-1464-EL-AIR	OH	Air Products and Chemicals, Inc., Armco Steel Co., Industrial Energy Consumers	Cincinnati Gas & Electric Co.	Return on equity.
09/93	93-189-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Transportation service terms and conditions.
09/93	93-081-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Cost-of-service, transportation rates, rate supplements; return on equity; revenue requirements.
12/93	U-17735	LA	Louisiana Public Service Commission Staff	Cajun Electric Power Cooperative	Historical reviews; evaluation of economic studies.
03/94	10320	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric Co.	Trimble County CWIP revenue refund.
4/94	E-015/GR-94-001	MN	Large Power Intervenors	Minnesota Power Co.	Evaluation of the cost of equity, capital structure, and rate of return.
5/94	R-00942993	PA	PG&W Industrial Intervenors	Pennsylvania Gas & Water Co.	Analysis of recovery of transition costs.
5/94	R-00943001	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania charge proposals.	Evaluation of cost allocation, rate design, rate plan, and carrying
7/94	R-00942986	PA	Armco, Inc., West Penn Power Industrial Intervenors	West Penn Power Co.	Return on equity and rate of return.
7/94	94-0035-E-42T	WV	West Virginia Energy Users' Group	Monongahela Power Co.	Return on equity and rate of return.

**Expert Testimony Appearances  
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Richard A. Baudino  
As of March 2019**

<b>Date</b>	<b>Case</b>	<b>Jurisdiction</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
8/94	8652	MD	Westvaco Corp. Co.	Potomac Edison	Return on equity and rate of return.
9/94	930357-C	AR	West Central Arkansas Gas Consumers	Arkansas Oklahoma Gas Corp.	Evaluation of transportation service.
9/94	U-19904	LA	Louisiana Public Service Commission	Gulf States Utilities	Return on equity.
9/94	8629	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Transition costs.
11/94	94-175-U	AR	Arkansas Gas Consumers	Arkla, Inc.	Cost-of-service, rate design, rate of return.
3/95	RP94-343-000	FERC	Arkansas Gas Consumers	NorAm Gas Transmission	Rate of return.
4/95	R-00943271	PA	PP&L Industrial Customer Alliance	Pennsylvania Power & Light Co.	Return on equity.
6/95	U-10755	MI	Association of Businesses Advocating Tariff Equity	Consumers Power Co.	Revenue requirements.
7/95	8697	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Cost allocation and rate design.
8/95	95-254-TF U-2811	AR	Tyson Foods, Inc.	Southwest Arkansas Electric Cooperative	Refund allocation.
10/95	ER95-1042-000	FERC	Louisiana Public Service Commission	Systems Energy Resources, Inc.	Return on Equity.
11/95	I-940032	PA	Industrial Energy Consumers of Pennsylvania	State-wide - all utilities	Investigation into Electric Power Competition.
5/96	96-030-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Revenue requirements, rate of return and cost of service.
7/96	8725	MD	Maryland Industrial Group	Baltimore Gas & Electric Co., Potomac Electric Power Co. and Constellation Energy Corp.	Return on Equity.
7/96	U-21496	LA	Louisiana Public Service Commission	Central Louisiana Electric Co.	Return on equity, rate of return.
9/96	U-22092	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.



**Expert Testimony Appearances  
of  
Richard A. Baudino  
As of March 2019**

<b>Date</b>	<b>Case</b>	<b>Jurisdct.</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
1/97	RP96-199-000	FERC	The Industrial Gas Users Conference	Mississippi River Transmission Corp.	Revenue requirements, rate of return and cost of service.
3/97	96-420-U	AR	West Central Arkansas Gas Corp.	Arkansas Oklahoma Gas Corp.	Revenue requirements, rate of return, cost of service and rate design.
7/97	U-11220	MI	Association of Business Advocating Tariff Equity	Michigan Gas Co. and Southeastern Michigan Gas Co.	Transportation Balancing Provisions.
7/97	R-00973944	PA	Pennsylvania American Water Large Users Group	Pennsylvania-American Water Co.	Rate of return, cost of service, revenue requirements.
3/98	8390-U	GA	Georgia Natural Gas Group and the Georgia Textile Manufacturers Assoc.	Atlanta Gas Light	Rate of return, restructuring issues, unbundling, rate design issues.
7/98	R-00984280	PA	PG Energy, Inc. Intervenor	PGE Industrial	Cost allocation.
8/98	U-17735	LA	Louisiana Public Service Commission	Cajun Electric Power Cooperative	Revenue requirements.
10/98	97-596	ME	Maine Office of the Public Advocate	Bangor Hydro-Electric Co.	Return on equity, rate of return.
10/98	U-23327	LA	Louisiana Public Service Commission	SWEPCO, CSW and AEP	Analysis of proposed merger.
12/98	98-577	ME	Maine Office of the Public Advocate	Maine Public Service Co.	Return on equity, rate of return.
12/98	U-23358	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity, rate of return.
3/99	98-426	KY	Kentucky Industrial Utility Customers, Inc.	Louisville Gas and Electric Co	Return on equity.
3/99	99-082	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Utilities Co.	Return on equity.
4/99	R-984554	PA	T. W. Phillips Users Group	T. W. Phillips Gas and Oil Co.	Allocation of purchased gas costs.
6/99	R-0099462	PA	Columbia Industrial Intervenor	Columbia Gas of Pennsylvania	Balancing charges.
10/99	U-24182	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Cost of debt.

**Expert Testimony Appearances  
of  
Richard A. Baudino  
As of March 2019**

<b>Date</b>	<b>Case</b>	<b>Jurisdct.</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
10/99	R-00994782	PA	Peoples Industrial Intervenors	Peoples Natural Gas Co.	Restructuring issues.
10/99	R-00994781	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Restructuring, balancing charges, rate flexing, alternate fuel.
01/00	R-00994786	PA	UGI Industrial Intervenors	UGI Utilities, Inc.	Universal service costs, balancing, penalty charges, capacity Assignment.
01/00	8829	MD	Maryland Industrial Gr.	Baltimore Gas & Electric Co.	Revenue requirements, cost allocation, rate design.
02/00	R-00994788	PA	Penn Fuel Transportation	PFG Gas, Inc., and	Tariff charges, balancing provisions.
05/00	U-17735	LA	Louisiana Public Service Comm.	Louisiana Electric Cooperative	Rate restructuring.
07/00	2000-080	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric Co.	Cost allocation.
07/00	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket E)	LA	Louisiana Public Service Commission	Southwestern Electric Power Co.	Stranded cost analysis.
09/00	R-00005654	PA	Philadelphia Industrial And Commercial Gas Users Group.	Philadelphia Gas Works	Interim relief analysis.
10/00	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket B)	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Restructuring, Business Separation Plan.
11/00	R-00005277 (Rebuttal)	PA	Penn Fuel Transportation Customers	PFG Gas, Inc. and North Penn Gas Co.	Cost allocation issues.
12/00	U-24993	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
03/01	U-22092	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Stranded cost analysis.
04/01	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket B) (Addressing Contested Issues)	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Restructuring issues.
04/01	R-00006042	PA	Philadelphia Industrial and Commercial Gas Users Group	Philadelphia Gas Works	Revenue requirements, cost allocation and tariff issues.

**Expert Testimony Appearances  
of  
Richard A. Baudino  
As of March 2019**

<b>Date</b>	<b>Case</b>	<b>Jurisdct.</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
11/01	U-25687	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
03/02	14311-U	GA	Georgia Public Service Commission	Atlanta Gas Light	Capital structure.
08/02	2002-00145	KY	Kentucky Industrial Utility Customers	Columbia Gas of Kentucky	Revenue requirements.
09/02	M-00021612	PA	Philadelphia Industrial And Commercial Gas Users Group	Philadelphia Gas Works	Transportation rates, terms, and conditions.
01/03	2002-00169	KY	Kentucky Industrial Utility Customers	Kentucky Power	Return on equity.
02/03	02S-594E	CO	Cripple Creek & Victor Gold Mining Company	Aquila Networks – WPC	Return on equity.
04/03	U-26527	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
10/03	CV020495AB	GA	The Landings Assn., Inc.	Utilities Inc. of GA	Revenue requirement & overcharge refund
03/04	2003-00433	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric	Return on equity, Cost allocation & rate design
03/04	2003-00434	KY	Kentucky Industrial Utility Customers	Kentucky Utilities	Return on equity
4/04	04S-035E	CO	Cripple Creek & Victor Gold Mining Company, Goodrich Corp., Holcim (U.S.) Inc., and The Trane Co.	Aquila Networks – WPC	Return on equity.
9/04	U-23327, Subdocket B	LA	Louisiana Public Service Commission	Southwestern Electric Power Company	Fuel cost review
10/04	U-23327 Subdocket A	LA	Louisiana Public Service Commission	Southwestern Electric Power Company	Return on Equity
06/05	050045-EI	FL	South Florida Hospital and HealthCare Assoc.	Florida Power & Light Co.	Return on equity
08/05	9036	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Revenue requirement, cost allocation, rate design, Tariff issues.
01/06	2005-0034	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Power Co.	Return on equity.

**Expert Testimony Appearances  
of  
Richard A. Baudino  
As of March 2019**

<b>Date</b>	<b>Case</b>	<b>Jurisdict.</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
03/06	05-1278-E-PC-PW-42T	WV	West Virginia Energy Users Group	Appalachian Power Company	Return on equity.
04/06	U-25116 Commission	LA	Louisiana Public Service	Entergy Louisiana, LLC	Transmission Issues
07/06	U-23327 Commission	LA	Louisiana Public Service	Southwestern Electric Power Company	Return on equity, Service quality
08/06	ER-2006-0314	MO	Missouri Office of the Public Counsel	Kansas City Power & Light Co.	Return on equity, Weighted cost of capital
08/06	06S-234EG	CO	CF&I Steel, L.P. & Climax Molybdenum	Public Service Company of Colorado	Return on equity, Weighted cost of capital
01/07	06-0960-E-42T Users Group	WV	West Virginia Energy	Monongahela Power & Potomac Edison	Return on Equity
01/07	43112	AK	AK Steel, Inc.	Vectren South, Inc.	Cost allocation, rate design
05/07	2006-661	ME	Maine Office of the Public Advocate	Bangor Hydro-Electric	Return on equity, weighted cost of capital.
09/07	07-07-01	CT	Connecticut Industrial Energy Consumers	Connecticut Light & Power	Return on equity, weighted cost of capital
10/07	05-UR-103	WI	Wisconsin Industrial Energy Group, Inc.	Wisconsin Electric Power Co.	Return on equity
11/07	29797	LA	Louisiana Public Service Commission	Cleco Power :LLC & Southwestern Electric Power	Lignite Pricing, support of settlement
01/08	07-551-EL-AIR	OH	Ohio Energy Group	Ohio Edison, Cleveland Electric, Toledo Edison	Return on equity
03/08	07-0585, 07-0585, 07-0587, 07-0588, 07-0589, 07-0590, (consol.)	IL	The Commercial Group	Ameren	Cost allocation, rate design
04/08	07-0566	IL	The Commercial Group	Commonwealth Edison	Cost allocation, rate design
06/08	R-2008-2011621	PA	Columbia Industrial Intervenors	Columbia Gas of PA	Cost and revenue allocation, Tariff issues
07/08	R-2008-2028394	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy	Cost and revenue allocation, Tariff issues

**Expert Testimony Appearances  
of  
Richard A. Baudino  
As of March 2019**

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07/08	R-2008-2039634	PA	PPL Gas Large Users Group	PPL Gas	Retainage, LUFG Pct.
08/08	6680-UR-116	WI	Wisconsin Industrial Energy Group	Wisconsin P&L	Cost of Equity
08/08	6690-UR-119	WI	Wisconsin Industrial Energy Group	Wisconsin PS	Cost of Equity
09/08	ER-2008-0318	MO	The Commercial Group	AmerenUE	Cost and revenue allocation
10/08	R-2008-2029325	PA	U.S. Steel & Univ. of Pittsburgh Med. Ctr.	Equitable Gas Co.	Cost and revenue allocation
10/08	08-G-0609	NY	Multiple Intervenors	Niagara Mohawk Power	Cost and Revenue allocation
12/08	27800-U	GA	Georgia Public Service Commission	Georgia Power Company	CWIP/AFUDC issues, Review financial projections
03/09	ER08-1056	FERC	Louisiana Public Service Commission	Entergy Services, Inc.	Capital Structure
04/09	E002/GR-08-1065	MN	The Commercial Group	Northern States Power	Cost and revenue allocation and rate design
05/09	08-0532	IL	The Commercial Group	Commonwealth Edison	Cost and revenue allocation
07/09	080677-EI	FL	South Florida Hospital and Health Care Association	Florida Power & Light	Cost of equity, capital structure, Cost of short-term debt
07/09	U-30975	LA	Louisiana Public Service Commission	Cleco LLC, Southwestern Public Service Co.	Lignite mine purchase
10/09	4220-UR-116	WI	Wisconsin Industrial Energy Group	Northern States Power	Class cost of service, rate design
10/09	M-2009-2123945	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities	Smart Meter Plan cost allocation
10/09	M-2009-2123944	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Company	Smart Meter Plan cost allocation
10/09	M-2009-2123951	PA	West Penn Power Industrial Intervenors	West Penn Power	Smart Meter Plan cost allocation
11/09	M-2009-2123948	PA	Duquesne Industrial Intervenors	Duquesne Light Company	Smart Meter Plan cost allocation
11/09	M-2009-2123950	PA	Met-Ed Industrial Users Group Penelec Industrial Customer Alliance, Penn Power Users Group	Metropolitan Edison, Pennsylvania Electric Co., Pennsylvania Power Co.	Smart Meter Plan cost allocation

**Expert Testimony Appearances  
of  
Richard A. Baudino  
As of March 2019**

<b>Date</b>	<b>Case</b>	<b>Jurisdiction</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
03/10	09-1352-E-42T	WV	West Virginia Energy Users Group	Monongahela Power	Return on equity, rate of return Potomac Edison
03/10	E015/GR-09-1151	MN	Large Power Intervenors	Minnesota Power	Return on equity, rate of return
04/10	2009-00459	KY	Kentucky Industrial Utility Consumers	Kentucky Power	Return on equity
04/10	2009-00548 2009-00549	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric, Kentucky Utilities	Return on equity.
05/10	10-0261-E-GI	WV	West Virginia Energy Users Group	Appalachian Power Co./ Wheeling Power Co.	EE/DR Cost Recovery, Allocation, & Rate Design
05/10	R-2009-2149262	PA	Columbia Industrial Intervenors	Columbia Gas of PA	Class cost of service & cost allocation
06/10	2010-00036	KY	Lexington-Fayette Urban County Government	Kentucky American Water Company	Return on equity, rate of return, revenue requirements
06/10	R-2010-2161694	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities	Rate design, cost allocation
07/10	R-2010-2161575	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Co.	Return on equity
07/10	R-2010-2161592	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Co.	Cost and revenue allocation
07/10	9230	MD	Maryland Energy Group	Baltimore Gas and Electric	Electric and gas cost and revenue allocation; return on equity
09/10	10-70	MA	University of Massachusetts-Amherst	Western Massachusetts Electric Co.	Cost allocation and rate design
10/10	R-2010-2179522	PA	Duquesne Industrial Intervenors	Duquesne Light Company	Cost and revenue allocation, rate design
11/10	P-2010-2158084	PA	West Penn Power Industrial Intervenors	West Penn Power Co.	Transmission rate design
11/10	10-0699-E-42T	WV	West Virginia Energy Users Group	Appalachian Power Co. & Wheeling Power Co.	Return on equity, rate of Return
11/10	10-0467	IL	The Commercial Group	Commonwealth Edison	Cost and revenue allocation and rate design
04/11	R-2010-2214415	PA	Central Penn Gas Large Users Group	UGI Central Penn Gas, Inc.	Tariff issues, revenue allocation
07/11	R-2011-2239263	PA	Philadelphia Area Energy Users Group	PECO Energy	Retainage rate

**Expert Testimony Appearances  
of  
Richard A. Baudino  
As of March 2019**

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08/11	R-2011-2232243	PA	AK Steel	Pennsylvania-American Water Company	Rate Design
08/11	11AL-151G	CO	Climax Molybdenum	PS of Colorado	Cost allocation
09/11	11-G-0280	NY	Multiple Intervenors	Corning Natural Gas Co.	Cost and revenue allocation
10/11	4220-UR-117	WI	Wisconsin Industrial Energy Group	Northern States Power	Cost and revenue allocation, rate design
02/12	11AL-947E	CO	Climax Molybdenum, CF&I Steel	Public Service Company of Colorado	Return on equity, weighted cost of capital
07/12	120015-EI	FL	South Florida Hospitals and Health Care Association	Florida Power and Light Co.	Return on equity, weighted cost of capital
07/12	12-0613-E-PC	WV	West Virginia Energy Users Group	American Electric Power/APCo	Special rate proposal for Century Aluminum
07/12	R-2012-2290597	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities Corp.	Cost allocation
09/12	05-UR-106	WI	Wisconsin Industrial Energy Group	Wisconsin Electric Power Co.	Class cost of service, cost and revenue allocation, rate design
09/12	2012-00221 2012-00222	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric, Kentucky Utilities	Return on equity.
10/12	9299	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design Cost of equity, weighted cost of capital
10/12	4220-UR-118	WI	Wisconsin Industrial Energy Group	Northern States Power Company	Class cost of service, cost and revenue allocation, rate design
10/12	473-13-0199	TX	Steering Committee of Cities Served by Oncor	Cross Texas Transmission, LLC	Return on equity, capital structure
01/13	R-2012-2321748 et al.	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Cost and revenue allocation
02/13	12AL-1052E	CO	Cripple Creek & Victor Gold Mining, Holcim (US) Inc.	Black Hills/Colorado Electric Utility Company	Cost and revenue allocations
06/13	8009	VT	IBM Corporation	Vermont Gas Systems	Cost and revenue allocation, rate design
07/13	130040-EI	FL	WCF Hospital Utility Alliance	Tampa Electric Co.	Return on equity, rate of return
08/13	9326	MD	Maryland Energy Group	Baltimore Gas and Electric	Cost and revenue allocation, rate design, special rider

**Expert Testimony Appearances  
of  
Richard A. Baudino  
As of March 2019**

<b>Date</b>	<b>Case</b>	<b>Jurisdct.</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
08/13	P-2012-2325034	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities, Corp.	Distribution System Improvement Charge
09/13	4220-UR-119	WI	Wisconsin Industrial Energy Group	Northern States Power Co.	Class cost of service, cost and revenue allocation, rate design
11/13	13-1325-E-PC	WV	West Virginia Energy Users Group	American Electric Power/APCo	Special rate proposal, Felman Production
06/14	R-2014-2406274	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Cost and revenue allocation, rate design
08/14	05-UR-107	WI	Wisconsin Industrial Energy Group	Wisconsin Electric Power Co.	Cost and revenue allocation, rate design
10/14	ER13-1508 et al.	FERC	Louisiana Public Service Comm.	Entergy Services, Inc.	Return on equity
11/14	14AL-0660E	CO	Climax Molybdenum Co. and CFI Steel, LP	Public Service Co. of Colorado	Return on equity, weighted cost of capital
11/14	R-2014-2428742	PA	AK Steel	West Penn Power Company	Cost and revenue allocation
12/14	42866	TX	West Travis Co. Public Utility Agency	Travis County Municipal Utility District No. 12	Response to complain of monopoly power
3/15	2014-00371 2014-00372	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric, Kentucky Utilities	Return on equity, cost of debt, weighted cost of capital
3/15	2014-00396	KY	Kentucky Industrial Utility Customers	Kentucky Power Co.	Return on equity, weighted cost of capital
6/15	15-0003-G-42T	WV	West Virginia Energy Users Gp.	Mountaineer Gas Co.	Cost and revenue allocation, Infrastructure Replacement Program
9/15	15-0676-W-42T	WV	West Virginia Energy Users Gp.	West Virginia-American Water Company	Appropriate test year, Historical vs. Future
9/15	15-1256-G-390P	WV	West Virginia Energy Users Gp.	Mountaineer Gas Co.	Rate design for Infrastructure Replacement and Expansion Program
10/15	4220-UR-121	WI	Wisconsin Industrial Energy Gp.	Northern States Power Co.	Class cost of service, cost and revenue allocation, rate design
12/15	15-1600-G-390P	WV	West Virginia Energy Users Gp.	Dominion Hope	Rate design and allocation for Pipeline Replacement & Expansion Prog.
12/15	45188	TX	Steering Committee of Cities Served by Oncor	Oncor Electric Delivery Co.	Ring-fence protections for cost of capital



**Expert Testimony Appearances  
of  
Richard A. Baudino  
As of March 2019**

<b>Date</b>	<b>Case</b>	<b>Jurisdct.</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
2/16	9406	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design, proposed Rider 5
3/16	39971	GA	GA Public Service Comm. Staff	Southern Company / AGL Resources	Credit quality and service quality issues
04/16	2015-00343	KY	Kentucky Office of the Attorney General	Atmos Energy	Cost of equity, cost of short-term debt, capital structure
05/16	16-G-0058 16-G-0059	NY	City of New York	Brooklyn Union Gas Co., KeySpan Gas East Corp.	Cost and revenue allocation, rate design, service quality issues
06/16	16-0073-E-C	WV	Constellium Rolled Products Ravenswood, LLC	Appalachian Power Co.	Complaint; security deposit
07/16	9418	MD	Healthcare Council of the National Capital Area	Potomac Electric Power Co.	Cost of equity, cost of service, Cost and revenue allocation
07/16	160021-EI	FL	South Florida Hospital and Health Care Association	Florida Power and Light Co.	Return on equity, cost of debt, capital structure
07/16	16-057-01	UT	Utah Office of Consumer Svcs.	Dominion Resources, Questar Gas Co.	Credit quality and service quality issues
08/16	8710	VT	Vermont Dept. of Public Service	Vermont Gas Systems	Return on equity, cost of debt, cost of capital
08/16	R-2016-2537359	PA	AK Steel Corp.	West Penn Power Co.	Cost and revenue allocation
09/16	2016-00162	KY	Kentucky Office of the Attorney General	Columbia Gas of Ky.	Return on equity, cost of short-term debt
09/16	16-0550-W-P	WV	West Va. Energy Users Gp.	West Va. American Water Co.	Infrastructure Replacement Program Surcharge
01/17	46238	TX	Steering Committee of Cities Served by Oncor	Oncor Electric Delivery Co.	Ring fencing and other conditions for acquisition, service quality and reliability
02/17	45414	TX	Cities of Midland, McAllen, and Colorado City	Sharyland Utilities, LP and Sharyland Dist. and Transmission Services, LLC	Return on equity
02/17	2016-00370 2016-00371	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric, Kentucky Utilities	Return on equity, cost of debt, weighted cost of capital
03/17	10580	TX	Atmos Cities Steering Committee	Atmos Pipeline Texas	Return on equity, capital structure, weighted cost of capital
03/17	R-3867-2013	Quebec, Canada	Canadian Federation of Independent Businesses	Gaz Metro	Marginal Cost of Service Study

**Expert Testimony Appearances  
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Richard A. Baudino  
As of March 2019**

<b>Date</b>	<b>Case</b>	<b>Jurisdic.</b>	<b>Party</b>	<b>Utility</b>	<b>Subject</b>
05/17	R-2017-2586783	PA	Philadelphia Industrial and Commercial Gas Users Gp.	Philadelphia Gas Works	Cost and revenue allocation, rate design, Interruptible tariffs
08/17	R-2017-2595853	PA	AK Steel	Pennsylvania American Water Co.	Cost and revenue allocation, rate design
8/17	17-3112-INV	VT	Vt. Dept. of Pubic Service	Green Mountain Power	Return on equity, cost of debt, weighted cost of capital
9/17	4220-UR-123	WI	Wisconsin Industrial Energy Group	Northern States Power	Cost and revenue allocation, rate design
10/17	2017-00179	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Power Co.	Return on equity, cost of short-term debt
12/17	2017-00321	KY	Office of the Attorney General	Duke Energy Kentucky, Inc.	Return on equity
1/18	2017-00349	KY	Office of the Attorney General	Atmos Energy	Return on equity, cost of debt, weighted cost of capital
5/18	Fiscal Years 2019-2021 Rates	PA	Philadelphia Large Users Group	Philadelphia Water Department	Cost and revenue allocation
8/18	18-0974-TF	VT	Vt. Dept. of Public Service	Green Mountain Power	Return on equity, cost of debt, weighted cost of capital
8/18	48401	TX	Cities Served by Texas-New Mexico Power Company	Texas-New Mexico Power Co.	Return on equity, capital structure
8/18	18-05-16	CT	Connecticut Industrial Energy Consumers	Connecticut Natural Gas Co.	Cost and revenue allocation
9/18	9484	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design
9/18	2017-370-E	SC	South Carolina Office of Regulatory Staff	South Carolina Electric & Gas, Dominion Resources, SCANA	Return on equity, service quality standards, credit quality conditions
10/18	18-1115-G-390P	WV	West Va. Energy Users Group	Mountaineer Gas Company	Customer protections for Infrastructure Replacement and Expansion Program
12/18	R-2018-3003558, R-2018-3003561	PA	Aqua Large Users Group	Aqua Pennsylvania, Inc.	Cost and revenue allocation
02/19	UD-18-07	CCNO	Crescent City Power Users' Gp.	Entergy New Orleans, LLC	Return on equity, Reliability Incentive Mechanism, other proposed riders
03/19	2018-00358	KY	Office of the Attorney General	Kentucky American Water Co.	Return on equity, Qualified Infrastructure Program rider

**EXHIBIT \_\_\_\_ (RAB-2)**

**KENTUCKY-AMERICAN WATER COMPANY  
CASE NO. 2018-00358  
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

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**Witness: Scott W. Rungren**

- 92.** Provide the monthly ROE for American Water and for Kentucky-American for January 2017 to the most current month available. This should be considered an ongoing request.

**Response:**

Please see the table below. The return on equity for American Water is not reported on a monthly basis. The returns on equity that American Water has publicly reported during the period requested are provided. For KAWC, the common equity balance used to compute each earned return shown below is the average balance for the respective twelve-month period. Starting in September 2017, KAWC's annual returns on equity reflect the impact of a land sale booked in September 2017.

<u>Month/Yr</u>	<u>American Water Earned ROE</u>	<u>KAWC Earned ROE</u>
Jan-17	N/A	9.99%
Feb-17	N/A	10.11%
Mar-17	9.7%	10.25%
Apr-17	N/A	10.39%
May-17	N/A	10.07%
Jun-17	9.4%	10.22%
Jul-17	N/A	10.23%
Aug-17	N/A	10.21%
Sep-17	9.4%	12.26%
Oct-17	N/A	11.91%
Nov-17	N/A	11.49%
Dec-17	9.9%	10.94%
Jan-18	N/A	10.97%
Feb-18	N/A	10.95%
Mar-18	10.0%	10.89%
Apr-18	N/A	10.19%
May-18	N/A	10.33%
Jun-18	N/A	10.20%
Jul-18	N/A	10.04%
Aug-18	N/A	9.85%
Sep-18	9.9%	7.93%
Oct-18	N/A	8.39%

Nov-18	N/A	8.08%
Dec-18	N/A	9.54%

**EXHIBIT \_\_\_\_ (RAB-3)**

**KENTUCKY AMERICAN WATER COMPANY  
WATER PROXY GROUP  
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD**

		Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19
<b>American States Water</b>	High Price (\$)	61.660	63.200	68.510	69.610	67.950	71.940
	Low Price (\$)	58.260	58.480	60.010	63.150	63.270	66.230
	Avg. Price (\$)	59.960	60.840	64.260	66.380	65.610	69.085
	Dividend (\$)	0.275	0.275	0.275	0.275	0.275	0.275
	Mo. Avg. Div.	1.83%	1.81%	1.71%	1.66%	1.68%	1.59%
	6 mos. Avg.	1.71%					
<b>American Water Works</b>	High Price (\$)	88.780	92.790	95.410	98.180	96.140	102.070
	Low Price (\$)	85.880	86.760	86.600	85.890	88.000	93.900
	Avg. Price (\$)	87.330	89.775	91.005	92.035	92.070	97.985
	Dividend (\$)	0.455	0.455	0.455	0.455	0.455	0.455
	Mo. Avg. Div.	2.08%	2.03%	2.00%	1.98%	1.98%	1.86%
	6 mos. Avg.	1.99%					
<b>California Water</b>	High Price (\$)	42.950	43.550	46.790	49.070	49.750	52.980
	Low Price (\$)	40.250	40.100	41.320	43.380	44.600	48.190
	Avg. Price (\$)	41.600	41.825	44.055	46.225	47.175	50.585
	Dividend (\$)	0.188	0.188	0.188	0.188	0.188	0.198
	Mo. Avg. Div.	1.80%	1.79%	1.70%	1.62%	1.59%	1.56%
	6 mos. Avg.	1.68%					
<b>Middlesex Water</b>	High Price (\$)	49.000	48.640	52.820	60.310	58.160	59.400
	Low Price (\$)	45.190	43.660	43.120	49.170	51.020	53.830
	Avg. Price (\$)	47.095	46.150	47.970	54.740	54.590	56.615
	Dividend (\$)	0.224	0.224	0.240	0.240	0.240	0.240
	Mo. Avg. Div.	1.90%	1.94%	2.00%	1.75%	1.76%	1.70%
	6 mos. Avg.	1.84%					
<b>York Water Company</b>	High Price (\$)	31.400	32.530	33.690	36.100	32.910	36.450
	Low Price (\$)	29.100	30.030	30.690	29.880	30.300	32.030
	Avg. Price (\$)	30.250	31.280	32.190	32.990	31.605	34.240
	Dividend (\$)	0.167	0.167	0.167	0.173	0.173	0.173
	Mo. Avg. Div.	2.21%	2.14%	2.08%	2.10%	2.19%	2.02%
	6 mos. Avg.	2.12%					
<b>Average Monthly Dividend Yield</b>		1.97%	1.94%	1.90%	1.82%	1.84%	1.75%
<b>Average 6-month Dividend Yield</b>		1.87%					

Source: Yahoo! Finance

**EXHIBIT \_\_\_\_ (RAB-4)**



**KENTUCKY AMERICAN WATER COMPANY  
WATER PROXY GROUP  
DCF Growth Rate Analysis**

<u>Company</u>	(1) Value Line <u>DPS</u>	(2) Value Line <u>EPS</u>	(3) <u>Zacks</u>	(4) Yahoo! <u>Finance</u>
American States Water	8.00%	6.00%	6.00%	6.00%
American Water Works	10.00%	10.00%	7.79%	8.20%
California Water Service Group	6.50%	9.50%	7.00%	9.80%
Middlesex Water Company	5.50%	9.00%	N/A	2.70%
York Water Company	8.00%	9.00%	N/A	4.90%
Averages	7.60%	8.70%	6.93%	6.32%
Median Values	8.00%	9.00%	7.00%	6.00%

**Sources: Zacks and Yahoo! Finance Earnings Reports, retrieved February 20, 2019  
Value Line Investment Survey, January 11, 2019**

**DCF RETURN ON EQUITY CALCULATION  
WATER PROXY GROUP**

	(1) Value Line <u>Dividend Gr.</u>	(2) Value Line <u>Earnings Gr.</u>	(3) Zack's <u>Earning Gr.</u>	(4) Yahoo! <u>Earning Gr.</u>	(5) Average of <u>All Gr. Rates</u>
<u>Method 1:</u>					
Dividend Yield	1.87%	1.87%	1.87%	1.87%	1.87%
Growth Rate	7.60%	8.70%	6.93%	6.32%	7.39%
Expected Div. Yield	<u>1.94%</u>	<u>1.95%</u>	<u>1.93%</u>	<u>1.93%</u>	<u>1.94%</u>
<b>DCF Return on Equity</b>	<b>9.54%</b>	<b>10.65%</b>	<b>8.86%</b>	<b>8.25%</b>	<b>9.33%</b>
<u>Method 2:</u>					
Dividend Yield	1.87%	1.87%	1.87%	1.87%	1.87%
Median Growth Rate	8.00%	9.00%	7.00%	6.00%	7.50%
Expected Div. Yield	<u>1.94%</u>	<u>1.95%</u>	<u>1.93%</u>	<u>1.92%</u>	<u>1.94%</u>
<b>DCF Return on Equity</b>	<b>9.94%</b>	<b>10.95%</b>	<b>8.93%</b>	<b>7.92%</b>	<b>9.44%</b>

**EXHIBIT \_\_\_\_ (RAB-5)**

**KENTUCKY AMERICAN WATER COMPANY  
COMBINED UTILITY PROXY GROUP  
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD**

		Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19
<b>American States Water</b>	High Price (\$)	61.660	63.200	68.510	69.610	67.950	71.940
	Low Price (\$)	58.260	58.480	60.010	63.150	63.270	66.230
	Avg. Price (\$)	59.960	60.840	64.260	66.380	65.610	69.085
	Dividend (\$)	0.275	0.275	0.275	0.275	0.275	0.275
	Mo. Avg. Div.	1.83%	1.81%	1.71%	1.66%	1.68%	1.59%
	6 mos. Avg.	1.71%					
<b>American Water Works</b>	High Price (\$)	88.780	92.790	95.410	98.180	96.140	102.070
	Low Price (\$)	85.880	86.760	86.600	85.890	88.000	93.900
	Avg. Price (\$)	87.330	89.775	91.005	92.035	92.070	97.985
	Dividend (\$)	0.455	0.455	0.455	0.455	0.455	0.455
	Mo. Avg. Div.	2.08%	2.03%	2.00%	1.98%	1.98%	1.86%
	6 mos. Avg.	1.99%					
<b>Atmos Energy</b>	High Price (\$)	95.220	98.400	100.760	99.800	97.900	99.590
	Low Price (\$)	91.950	91.560	91.280	87.880	89.190	93.860
	Avg. Price (\$)	93.585	94.980	96.020	93.840	93.545	96.725
	Dividend (\$)	0.485	0.485	0.525	0.525	0.525	0.525
	Mo. Avg. Div.	2.07%	2.04%	2.19%	2.24%	2.24%	2.17%
	6 mos. Avg.	2.16%					
<b>California Water</b>	High Price (\$)	42.950	43.550	46.790	49.070	49.750	52.980
	Low Price (\$)	40.250	40.100	41.320	43.380	44.600	48.190
	Avg. Price (\$)	41.600	41.825	44.055	46.225	47.175	50.585
	Dividend (\$)	0.188	0.188	0.188	0.188	0.188	0.198
	Mo. Avg. Div.	1.80%	1.79%	1.70%	1.62%	1.59%	1.56%
	6 mos. Avg.	1.68%					
<b>Middlesex Water</b>	High Price (\$)	49.000	48.640	52.820	60.310	58.160	59.400
	Low Price (\$)	45.190	43.660	43.120	49.170	51.020	53.830
	Avg. Price (\$)	47.095	46.150	47.970	54.740	54.590	56.615
	Dividend (\$)	0.224	0.224	0.240	0.240	0.240	0.240
	Mo. Avg. Div.	1.90%	1.94%	2.00%	1.75%	1.76%	1.70%
	6 mos. Avg.	1.84%					
<b>New Jersey Resources</b>	High Price (\$)	47.850	47.930	51.830	51.570	48.630	48.920
	Low Price (\$)	44.450	44.160	44.540	43.510	43.920	44.880
	Avg. Price (\$)	46.150	46.045	48.185	47.540	46.275	46.900
	Dividend (\$)	0.293	0.293	0.293	0.293	0.293	0.293
	Mo. Avg. Div.	2.54%	2.54%	2.43%	2.46%	2.53%	2.49%
	6 mos. Avg.	2.50%					
<b>Northwest Natural</b>	High Price (\$)	70.330	71.810	70.620	68.450	62.760	66.310
	Low Price (\$)	64.750	64.580	63.640	57.940	57.200	59.630
	Avg. Price (\$)	67.540	68.195	67.130	63.195	59.980	62.970
	Dividend (\$)	0.473	0.475	0.475	0.475	0.475	0.475
	Mo. Avg. Div.	2.80%	2.79%	2.83%	3.01%	3.17%	3.02%
	6 mos. Avg.	2.93%					

**KENTUCKY AMERICAN WATER COMPANY  
COMBINED UTILITY PROXY GROUP  
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD**

		Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19
<b>ONE Gas, Inc.</b>	High Price (\$)	83.120	85.220	86.540	87.750	83.690	87.230
	Low Price (\$)	78.580	78.800	76.910	75.510	75.820	79.220
	Avg. Price (\$)	80.850	82.010	81.725	81.630	79.755	83.225
	Dividend (\$)	0.460	0.460	0.460	0.460	0.460	0.500
	Mo. Avg. Div.	2.28%	2.24%	2.25%	2.25%	2.31%	2.40%
	6 mos. Avg.	2.29%					
<b>South Jersey Industries</b>	High Price (\$)	36.160	36.720	32.740	31.980	30.890	32.100
	Low Price (\$)	33.010	29.480	29.540	26.060	26.640	28.580
	Avg. Price (\$)	34.585	33.100	31.140	29.020	28.765	30.340
	Dividend (\$)	0.280	0.280	0.280	0.288	0.288	0.288
	Mo. Avg. Div.	3.24%	3.38%	3.60%	3.96%	4.00%	3.79%
	6 mos. Avg.	3.66%					
<b>Southwest Gas</b>	High Price (\$)	83.200	83.150	85.970	83.630	79.600	84.670
	Low Price (\$)	76.690	76.870	76.100	72.680	73.270	76.350
	Avg. Price (\$)	79.945	80.010	81.035	78.155	76.435	80.510
	Dividend (\$)	0.520	0.520	0.520	0.520	0.520	0.520
	Mo. Avg. Div.	2.60%	2.60%	2.57%	2.66%	2.72%	2.58%
	6 mos. Avg.	2.62%					
<b>Spire, Inc.</b>	High Price (\$)	76.800	76.340	81.130	80.430	79.540	79.660
	Low Price (\$)	70.730	70.730	71.250	70.530	71.670	74.000
	Avg. Price (\$)	73.765	73.535	76.190	75.480	75.605	76.830
	Dividend (\$)	0.563	0.563	0.563	0.593	0.593	0.593
	Mo. Avg. Div.	3.05%	3.06%	2.95%	3.14%	3.13%	3.08%
	6 mos. Avg.	3.07%					
<b>York Water Company</b>	High Price (\$)	31.400	32.530	33.690	36.100	32.910	36.450
	Low Price (\$)	29.100	30.030	30.690	29.880	30.300	32.030
	Avg. Price (\$)	30.250	31.280	32.190	32.990	31.605	34.240
	Dividend (\$)	0.167	0.167	0.167	0.173	0.173	0.173
	Mo. Avg. Div.	2.21%	2.14%	2.08%	2.10%	2.19%	2.02%
	6 mos. Avg.	2.12%					
<b>Average Monthly Dividend Yield</b>		2.37%	2.36%	2.36%	2.40%	2.44%	2.36%
<b>Average 6-month Dividend Yield</b>		2.38%					

Source: Yahoo! Finance

**EXHIBIT \_\_\_\_ (RAB-6)**

**KENTUCKY AMERICAN WATER COMPANY  
COMBINED UTILITY PROXY GROUP  
DCF Growth Rate Analysis**

<u>Company</u>	(1) Value Line <u>DPS</u>	(2) Value Line <u>EPS</u>	(3) <u>Zacks</u>	(4) Yahoo! <u>Finance</u>
American States Water	8.00%	6.00%	6.00%	6.00%
American Water Works	10.00%	10.00%	7.79%	8.20%
Atmos Energy	7.00%	7.50%	6.50%	6.40%
California Water Service Group	6.50%	9.50%	7.00%	9.80%
Middlesex Water Company	5.50%	9.00%	N/A	2.70%
New Jersey Resources Corp.	4.00%	2.50%	7.00%	6.00%
Northwest Natural Holding Co.	2.50%	25.50%	4.33%	4.00%
ONE Gas, Inc.	9.50%	9.00%	5.85%	5.00%
South Jersey Industries, Inc.	4.00%	9.50%	9.53%	9.50%
Southwest Gas Holdings, Inc.	5.50%	8.50%	5.00%	6.20%
Spire, Inc.	4.00%	5.50%	3.93%	2.42%
York Water Company	8.00%	9.00%	N/A	4.90%
Averages	6.21%	9.29%	6.29%	5.93%
Avg. Value Line Earnings Growth excl. Northwest Natural		7.82%		
Median Values	6.00%	9.00%	6.25%	6.00%
Median Value Line Earnings Growth excl. Northwest Natural		9.00%		

**Sources: Zack's and Yahoo! Finance Earnings Reports, retrieved February 20, 2019  
Value Line Investment Survey, January 11 and March 1, 2019**

**DCF RETURN ON EQUITY CALCULATION  
COMBINED UTILITY PROXY GROUP**

	(1) Value Line <u>Dividend Gr.</u>	(2) Value Line <u>Earnings Gr.</u>	(3) Zack's <u>Earning Gr.</u>	(4) Yahoo! <u>Earning Gr.</u>	(5) Average of <u>All Gr. Rates</u>
<b>Method 1:</b>					
Dividend Yield	2.38%	2.38%	2.38%	2.38%	2.38%
Growth Rate	6.21%	7.82%	6.29%	5.93%	6.56%
Expected Div. Yield	<u>2.46%</u>	<u>2.47%</u>	<u>2.46%</u>	<u>2.45%</u>	<u>2.46%</u>
<b>DCF Return on Equity</b>	<b>8.67%</b>	<b>10.29%</b>	<b>8.75%</b>	<b>8.38%</b>	<b>9.02%</b>
<b>Method 2:</b>					
Dividend Yield	2.38%	2.38%	2.38%	2.38%	2.38%
Median Growth Rate	6.00%	9.00%	6.25%	6.00%	6.81%
Expected Div. Yield	<u>2.45%</u>	<u>2.49%</u>	<u>2.46%</u>	<u>2.45%</u>	<u>2.46%</u>
<b>DCF Return on Equity</b>	<b>8.45%</b>	<b>11.49%</b>	<b>8.71%</b>	<b>8.45%</b>	<b>9.27%</b>

**EXHIBIT \_\_\_\_ (RAB-7)**



**KENTUCKY AMERICAN WATER COMPANY  
Capital Asset Pricing Model Analysis**

**30-Year Treasury Bond, Value Line Beta**

<u>Line No.</u>		<u>Value Line</u>
1	Market Required Return Estimate	12.16%
2	Risk-free Rate of Return, 30-Year Treasury Bond	
3	Average of Last Six Months	3.17%
4	Risk Premium	
5	(Line 1 minus Line 3)	8.99%
6	Proxy Group Beta	0.69
7	Proxy Group Beta * Risk Premium	
8	(Line 5 * Line 6)	6.18%
9	CAPM Return on Equity	
10	(Line 8 plus Line 3)	9.35%

**5-Year Treasury Bond, Value Line Beta**

11	Market Required Return Estimate	12.16%
12	Risk-free Rate of Return, 5-Year Treasury Bond	
13	Average of Last Six Months	2.76%
14	Risk Premium	
15	(Line 11 minus Line 13)	9.40%
16	Proxy Group Beta	0.69
17	Proxy Group Beta * Risk Premium	
18	Line 16 * Line 15)	6.46%
19	CAPM Return on Equity	
20	(Line 18 plus Line 13)	9.22%

**KENTUCKY AMERICAN WATER COMPANY  
Capital Asset Pricing Model Analysis**

**Supporting Data for CAPM Analyses**

30 Year Treasury Bond Data

	<u>Avg. Yield</u>
September-18	3.15%
October-18	3.34%
November-18	3.36%
December-18	3.10%
January-19	3.04%
February-19	<u>3.02%</u>
6 month average	3.17%

5 Year Treasury Bond Data

	<u>Avg. Yield</u>
September-18	2.89%
October-18	3.00%
November-18	2.95%
December-18	2.68%
January-19	2.54%
February-19	<u>2.49%</u>
6 month average	2.76%

Value Line Market Return Data:

Forecasted Data:	
Value Line Median Growth Rates:	
Earnings	12.00%
Book Value	<u>8.50%</u>
Average	10.25%
Average Dividend Yield	<u>1.02%</u>
Estimated Market Return	11.32%

Value Line Projected 3-5 Yr. Median Annual Total Return	13.00%
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Average of Projected Mkt. Returns	12.16%
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Source: Value Line Investment Survey  
for Windows, February 20, 2019

Combined Utility Proxy Group

American States Water	0.70
American Water Works	0.55
Atmos Energy	0.60
California Water Service Group	0.70
Middlesex Water Company	0.75
New Jersey Resources	0.70
Northwest Natural Holding Co.	0.65
ONE Gas, Inc.	0.65
South Jersey Industries	0.85
Southwest Gas Holdings	0.70
Spire, Inc.	0.65
York Water Company	<u>0.75</u>

Combined Utility Proxy Group Average Beta	0.69
Water Group Average Beta	0.69

Sources: Value Line reports

Value Line  
Beta

**EXHIBIT \_\_\_\_ (RAB-8)**

**KENTUCKY AMERICAN WATER COMPANY**  
**Capital Asset Pricing Model Analysis**  
**Historic Market Premium**

	<u>Geometric Mean</u>	<u>Arithmetic Mean</u>	<u>Adjusted Arithmetic Mean</u>
Long-Term Annual Return on Stocks	10.20%	12.10%	
Long-Term Annual Income Return on Long-Term Government Bonds	<u>5.00%</u>	<u>5.00%</u>	
Historical Market Risk Premium	5.20%	7.10%	6.04%
CUPG Beta, Value Line	<u>0.69</u>	<u>0.69</u>	<u>0.69</u>
Beta * Market Premium	3.58%	4.88%	4.15%
Current 30-Year Treasury Bond Yield	<u>3.17%</u>	<u>3.17%</u>	<u>3.17%</u>
<b>CAPM Cost of Equity</b>	<b><u>6.74%</u></b>	<b><u>8.05%</u></b>	<b><u>7.32%</u></b>

Source: 2018 SBBi Yearbook, Stocks, Bonds, Bills, and Inflation, Duff and Phelps; pp. 6-17, 10-31

**EXHIBIT \_\_\_\_ (RAB-9)**

**KENTUCKY-AMERICAN WATER COMPANY  
CASE NO. 2018-00358  
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

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**Witness:** Ann E. Bulkley

- 89.** Refer to the Bulkey Testimony, Attachment AEB-5.
- a. Provide any updates to the Value Line ROE Projections.
  - b. For each proxy group company, provide the most recently authorized ROE awards and the date of this award.

**Response:**

- a. Please see KAW\_R\_PSCDR2\_NUM089\_012519\_Attachment 1 for a revised version of Attachment AEB-5 updated using the Value Line Reports as of January 11, 2019 for the Water Utility Proxy Group.
- b. Please see KAW\_R\_PSCDR2\_NUM089\_012519\_Attachment 2 for the most recently authorized ROE awards of the utility operating subsidiaries of the companies in the Water Utility Proxy Group.

VALUE LINE ROE PROJECTIONS -- WATER PROXY GROUP

Company	Ticker	2019	2021-2023
American States Water Co	AWR	13.00%	14.00%
American Water Works Co, Inc.	AWK	10.50%	10.50%
California Water Service Group	CWT	11.00%	11.50%
Middlesex Water Company	MSEX	13.00%	13.00%
York Water Company	YORW	10.50%	13.50%
	Median	11.00%	13.00%
	Median excl AWK	12.00%	13.25%

Source: Value Line Reports; dated January 11, 2019

AUTHORIZED ROE ANALYSIS -- WATER PROXY GROUP

Company	Ticker	Type	States of Operation	Date	Authorized Return on Equity
American States Water Co	AWR	Water	California	3/22/2018	8.90%
Golden State Water Co.	AWR	Water	California		
American Water Works Co, Inc.	AWK	Water	California	3/22/2018	9.20%
California American Water	AWK	Water	Georgia	N/A	N/A
Georgia American Water [2]	AWK	Water	Hawaii	11/21/2011	10.20%
Hawaii American Water [2]	AWK	Water	Illinois	12/13/2016	9.79%
Illinois American Water	AWK	Water	Indiana	1/28/2015	9.75%
Indiana American Water	AWK	Water	Iowa	2/27/2017	9.60%
Iowa American Water	AWK	Water	Kentucky	8/28/2016	9.70%
Kentucky American Water [2], [3]	AWK	Water	Maryland	5/26/2015	10.00%
Maryland American Water	AWK	Water	Michigan	N/A	N/A
Michigan American Water [2]	AWK	Water	Missouri	5/28/2018	10.00%
Missouri American Water [2], [3]	AWK	Water	New Jersey	10/29/2018	9.60%
New Jersey American Water [2]	AWK	Water	New York	5/18/2017	9.10%
New York American Water	AWK	Water	Pennsylvania	1/1/2018	10.00%
Pennsylvania American Water [2], [3]	AWK	Water	Tennessee	11/20/2012	10.00%
Tennessee American Water	AWK	Water	Virginia	5/24/2017	9.25%
Virginia American Water	AWK	Water	West Virginia	2/24/2016	9.75%
West Virginia American Water	AWK	Water			
California Water Service Group	CWT	Water	California	3/22/2018	8.90%
California Water Service Co.	CWT	Water	Hawaii	2/19/2015	9.89%
Waikoloa Water	CWT	Water	Hawaii	6/29/2015	10.10%
Kona Water Service	CWT	Water	Hawaii	9/12/2016	10.10%
Hawaii Water Service KAnapali Division	CWT	Water			
Middlesex Water Company	MSEX	Water	Delaware	8/19/2014	9.75%
Tidewater Utilities, Inc.	MSEX	Water	New Jersey	3/24/2018	9.60%
Middlesex Water Co.	MSEX	Water			
York Water Company	YORW	Water	Pennsylvania	1/9/2014	NA
The York Water Co.	YORK	Water			

Notes:

- [1] Source: SNL Financial
- [2] Source: Company provided data.
- [3] The ROE listed is the Company's view of the ROE allowed in the case, the ROE was not disclosed in the Order or the applicable settlement agreement.
- [4] Operating Subsidiaries with rate cases not covered by SNL Financial were excluded from the analysis.



**EXHIBIT \_\_\_\_ (RAB-10)**

**KENTUCKY-AMERICAN WATER COMPANY  
CASE NO. 2018-00358  
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION**

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**Witness: Brent E. O'Neill, Kevin N. Rogers**

**85.** Reference O'Neill Direct, pages 30–31. Has the Company seen an increase in the frequency of water main break and leaks over the past 10 years?

**Response:**

No. KAWC's frequency of water main breaks and leaks has varied over the past 10 years and it is difficult to determine a trend from year to year over that period due to the impact of a variety of factors on main breaks that leads to leaks. These factors include pipe age, pipe material, diameter, weather, and soil type.

The main break frequency over the past 10 years is as follows:

Year	Number of Main Breaks
2009	181
2010	203
2011	144
2012	191
2013	149
2014	163
2015	111
2016	196
2017	143
2018	146

**EXHIBIT \_\_\_\_ (RAB-11)**

**KENTUCKY-AMERICAN WATER COMPANY  
CASE NO. 2018-00358  
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION**

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**Witness: Melissa L. Schwarzell and Brent O'Neill**

**91.** Reference Rowe Direct, page 11.

- a. Does Mr. Rowe believe the Commission has not demonstrated commitment to infrastructure replacement?
- b. Does Mr. Rowe believe the Company has not demonstrated commitment to infrastructure replacement?

**Response:**

a&b. Mr. Rowe's statement on commitment to infrastructure replacement was affirmative, not negative. It comments on the positive impact a QIP would have toward public commitment for infrastructure replacement and does not imply a negative comment on the past.

As Mr. Rowe and Mr. O'Neill note, while the Company has made strides toward reducing the pipe replacement cycle and achieving a robust infrastructure program, more progress needs to be made. Likewise, the Commission has consistently allowed general rate case recovery of critical water infrastructure investment in Kentucky and has utilized a forecasted test year for many years. Nonetheless, additional constructive regulatory mechanisms will provide Kentucky American the opportunity to improve the replacement rate of its aging infrastructure and achieve a level of investment that is in the long-term interest of our customers.

**EXHIBIT \_\_\_\_ (RAB-12)**

**KENTUCKY-AMERICAN WATER COMPANY  
CASE NO. 2018-00358  
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION**

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**Witness: Brent E. O'Neill**

45. In Case No. 2012-00520, KAWC proposed to implement a DSIC that would permit it to accelerate the replacement of aging infrastructure. Provide a comparative analysis listing the similarities and the differences between the DSIC and the proposed QIP Rider in this instant case. Include detailed discussions for each similarity and difference noted in Kentucky-American's comparative analysis.

**Response:**

- a. Following is a comparative analysis listing of the similarities and differences between DSIC and the proposed QIP Rider:

	<b>Case No. 2012-00520</b>	<b>Case No. 2018-00358</b>
<b>Name</b>	Distribution System Improvement Charge (DSIC)	Qualified Infrastructure Program (QIP)
<b>Proposed Plant Accounts</b>	331 Transmission and Distribution 333 Services 334 Meters and Meter Installation 335 Hydrants	304 – Structures & Improvements 309 – Supply Mains 310 – Power Generation Equipment 311 – Pumping Equipment 320 – Water Treatment Equipment 330 – Distribution Reservoirs 331 Transmission and Distribution 333 Services 334 Meters and Meter Installation 335 Hydrants 344 – Laboratory Equipment 346 – Communication Equipment 347 – Miscellaneous Equipment
<b>Test Period</b>	Forecasted 13-month average	Forecasted 13-month average
<b>Filing</b>	90 days prior to effective date	90 days prior to effective date
<b>Reconciliation</b>	60 days after close of test period	60 days after close of test period
<b>Depreciation Rates</b>	Prior rate case	Prior rate case
<b>Property Taxes</b>	Prior rate case	Prior rate case
<b>Revenue Taxes</b>	Prior rate case	Prior rate case
<b>Interest on over/ under revenue</b>	Yes	Yes
<b>Pre-Defined Program of Main Replacements</b>	No	Yes

<b>Cap on Cumulative Rate</b>	10%	None
<b>Defined Safety Considerations</b>	No	Yes
<b>Defined Distribution Pump Station Replacement</b>	No	Yes
<b>Defined Water Treatment Plant Replacement</b>	No	Yes
<b>Additional Investment</b>	Not Defined	Yes - \$6 to \$10 million additional (present day dollars)

- b. Following is a detailed discussion of the similarities and differences of DSIC and the proposed QIP Rider:

<b>Name</b>	Kentucky American believed the revised name more accurately reflects the description of the goal to replace qualified infrastructure that is critical to maintaining the safety and environmental health of the public.
<b>Proposed Plant Accounts</b>	Kentucky American added the Pumping Equipment infrastructure, as the majority of pumping equipment is used at the treatment facilities to supply the distribution system or within the distribution system to maintain system pressure. Maintaining system pressure is one of the most significant ways that a water system protects the public from contamination and supports adequate fire protection. Replacement of pumping equipment is also one of the most effective ways to reduce system costs, all else being equal, through reduced power usage associated with higher pump efficiencies and thus reduced power costs. The current QIP also has included treatment plant replacements projects that are identified as posing a potential threat to meet regulatory compliance, system reliability, documented structural deficiencies, or have safety concerns.
<b>Test Period</b>	A forecasted period has been proposed in both, as Kentucky American believes that a forecasted mechanism will provide the greatest benefit in reducing regulatory lag, attracting capital and extending the period between rate cases.
<b>Filing</b>	Both proposals included a filing 90-days prior to the effective date of the annual adjustment.
<b>Reconciliation</b>	Both proposals included a reconciliation 60-days after the close of the QIP investment period.
<b>Depreciation Rates</b>	Both proposals included the depreciation expense and accumulated depreciation, to be calculated at the depreciation rates in the most recent rate case.
<b>Property Taxes</b>	Both proposals included property tax calculations at the rate of overall property tax in the most recent rate case.
<b>Revenue Taxes</b>	Both proposals included revenue tax calculations at the rate of revenue tax in the most recent rate case.

Interest on over/ under revenue	Both proposals included interest on either over collection of revenues or under collection of revenues.
Prioritization of Main Replacements	The QIP proposal prioritizes main replacements for the first five years that can be updated, with the target of replacing all cast iron and galvanized mains within the next 25 years. The DSIC did not define the target mains; it was based on a general target of replacing smaller cast iron and galvanized mains.
Cap on Cumulative Rate	The DSIC proposed a cap on the total amount of customer bill increase between rate cases of 10%. However, a cap would limit the ability to extend the time between rate cases and therefore a cap has not been proposed with the QIP.
Safety Considerations	The QIP has identified the safety concerns with regard to not accelerating the infrastructure replacement including water quality risks, fire protection risks, and the risks for contamination. Although these risks were all very real at the time of the proposed DSIC, they were not well defined with respect to the proposed DSIC.
Distribution Pump Station Replacement	The QIP has identified the benefit of replacing distribution pump stations to maintain adequate pressure, fire protection and system redundancy. The QIP replacement of distribution pump stations will allow for the placement of more efficient pumps in the system and reduce power usage. The DSIC did not include pumping equipment eligible infrastructure.
Water Treatment Plant Replacement	The QIP has included treatment plant replacements projects that are identified as posing a potential threat to meet regulatory compliance, system reliability, documented structurally deficiencies, or have safety concerns. The DSIC did not include water treatment equipment.
Additional Investment	Over time, KAWC expects to increase the replacement trajectory and invest an additional \$6 to \$10 million each year (present day dollars) for the first 5 years of the QIP Rider to close the gap between the current replacement rate and level of replacement of the system as indicated by the Nessie Curve analysis conducted in KAWC's Report (BEO Exhibit 2) and address aging distribution pump station infrastructure. The DSIC did not include additional investment.



**EXHIBIT \_\_\_\_ (RAB-13)**

**Kentucky American Water**  
**Case No. 2018-00358**  
**QIP Revenues**  
**Response to AGDR1, Item 61**

Sample calculation only. Actual results could vary due to a number of variables. Please see body of discovery response.
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**All Figures Shown Below are Estimated and Cumulative**

	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
QIP Plant Additions	\$5,343,605	\$20,123,040	\$38,693,150	\$57,465,110	\$76,280,570
Retirements	(449,587)	(1,693,061)	(3,255,466)	(4,834,853)	(6,417,900)
<b>Net Change to Gross Plant</b>	<b>4,894,018</b>	<b>18,429,979</b>	<b>35,437,684</b>	<b>52,630,257</b>	<b>69,862,670</b>
Cost of Removal	653,154	1,969,249	3,428,926	4,903,308	6,377,691
Retirements	449,587	1,693,061	3,255,466	4,834,853	6,417,900
Depreciation Accrual	(106,543)	(507,764)	(1,279,244)	(2,425,007)	(3,945,921)
<b>Net Change to Accum Depr</b>	<b>996,198</b>	<b>3,154,545</b>	<b>5,405,147</b>	<b>7,313,154</b>	<b>8,849,670</b>
<b>Net Change to Net Plant</b>	<b>5,890,216</b>	<b>21,584,524</b>	<b>40,842,831</b>	<b>59,943,411</b>	<b>78,712,340</b>
Accumulated Deferred Taxes	(674,400)	(2,538,892)	(4,879,645)	(7,243,175)	(9,545,592)
<b>Net Change to Rate Base</b>	<b>5,215,816</b>	<b>19,045,633</b>	<b>35,963,186</b>	<b>52,700,236</b>	<b>69,166,749</b>
Pre-Tax Rate of Return	10.01%	10.01%	10.01%	10.01%	10.01%
QIP Revenue on Net Change to Rate Base	522,103	1,906,468	3,599,915	5,275,294	6,923,592
QIP Depreciation Expense	106,543	401,221	771,480	1,145,763	1,520,913
QIP Property Taxes	60,196	226,689	435,884	647,352	859,311
<b>QIP Revenue Requirement Rate Adj</b>	<b>\$688,843</b>	<b>\$2,534,378</b>	<b>\$4,807,278</b>	<b>\$7,068,409</b>	<b>\$9,303,816</b>