

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

In the Matter of:

**ELECTRONIC APPLICATION OF KENTUCKY-)
AMERICAN WATER COMPANY FOR AN)
ADJUSTMENT OF RATES, A CERTIFICATE OF)
PUBLIC CONVENIENCE AND NECESSITY FOR)
INSTALLATION OF ADVANCED METERING)
INFRASTRUCTURE, APPROVAL OF CERTAIN)
REGULATORY AND ACCOUNTING)
TREATMENTS, AND TARIFF REVISIONS)**

CASE NO. 2023-00191

DIRECT TESTIMONY

AND EXHIBITS

OF

RICHARD A. BAUDINO

ON BEHALF OF THE

**OFFICE OF THE ATTORNEY GENERAL OF THE
COMMONWEALTH OF KENTUCKY**

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

September 29, 2023

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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
3 Associates, Inc. (“Kennedy and Associates”), 570 Colonial Park Drive, Suite 305,
4 Roswell, 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
10 of Arts Degree with majors in Economics and English from New Mexico State in
11 1979.

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

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

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

10 Exhibit RAB-1 summarizes my expert testimony experience.

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

12 A. I am submitting Direct Testimony on behalf of the Office of the Attorney General
13 of the Commonwealth of Kentucky ("OAG").

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") and overall rate of return on rate base for Kentucky-American Water
17 Company ("KAW" or "Company"). With respect to the allowed ROE for KAW, I
18 will also respond to the Direct Testimony of Ms. Ann Bulkley, witness for the
19 Company. With respect to capital structure, I will address the Direct Testimony of
20 Company witness Nicholas Furia.

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

1 A. I recommend that the Kentucky Public Service Commission ("Commission")
2 authorize an allowed ROE for KAW of 9.40%. My recommended range is based
3 on the results of a discounted cash flow ("DCF") analysis applied to a proxy group
4 of 11 water, gas, and electric companies that was used by Ms. Bulkley.¹ I also
5 performed Capital Asset Pricing Model ("CAPM") analyses using historical and
6 forecasted risk premiums as well as recommended market risk premiums from other
7 sources. The CAPM estimates included in my analyses support the reasonableness
8 of my recommended 9.40% ROE for KAW. My recommendation fully reflects
9 current economic and financial market conditions, which I will describe in more
10 detail in Section II of my Direct Testimony. A 9.40% ROE provides a fair return
11 to investors on a relatively low-risk regulated water utility investment such as
12 KAW.

13 I will also address the Company's requested capital structure, which was
14 supported primarily by Mr. Furia, and also by Ms. Bulkley. The Company
15 requested a common equity ratio of 52.45% for the test period.² This request is
16 significantly higher than KAW's recent actual historical common equity ratios for
17 the years 2017 – 2022 and should be rejected by the Commission. Based on the
18 historical capital structures I reviewed, I recommend that the Commission allow a
19 50% common equity ratio for ratemaking purposes in this case. The Company's

¹ Direct Testimony of Ann Bulkley ("Bulkley Testimony") at 27.

² Direct Testimony of Nicholas Furia ("Furia Testimony") at 4.

1 requested long-term debt ratio of 46.21%³ should be increased to 48.66%. Together
2 with my recommended ROE of 9.40%, I recommend a weighted cost of capital of
3 7.047%.

4 In Section IV of my testimony I will respond to Company witness Bulkley's
5 Direct Testimony and her ROE recommendation of 10.75%.⁴ I will clearly
6 demonstrate that Ms. Bulkley's recommended ROE of 10.75% grossly overstates a
7 fair rate of return for KAW and that this recommendation should be rejected by the
8 Commission.

9 **II. ROE GUIDELINES AND REVIEW OF ECONOMIC CONDITIONS**

10 **Q. What are the main guidelines to which you adhere in estimating the cost of**
11 **equity?**

12 A. Generally speaking, the estimated cost of equity should be comparable to the
13 returns of other firms with similar risk structures and should be sufficient for the
14 firm to attract capital. These are the basic standards set out by the United States
15 Supreme Court in *Federal Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591
16 (1944), and *Bluefield W.W. & Improv. Co. v. Public Service Comm'n*, 262 U.S. 679
17 (1922).

18 From an economist's perspective, the notion of "opportunity cost" plays a
19 vital role in estimating the ROE. One measures the opportunity cost of an
20 investment equal to what one would have obtained in the next best alternative. For

³ Furia Testimony at 4.

⁴ Bulkley Testimony at 7 and 62.

1 example, suppose that an investor decides to purchase the stock of a publicly traded
2 regulated water utility. That investor will make the decision based on the
3 expectation of dividend payments and perhaps some appreciation in the stock's
4 value over time; however, that investor's opportunity cost is measured by what she
5 or he could have invested in as the next best alternative. That alternative could
6 have been another utility stock, a utility bond, a mutual fund, a money market fund,
7 or any other number of investment vehicles.

8 The key determinant in deciding whether to invest, however, is based on
9 comparative levels of risk. Our hypothetical investor would not invest in a
10 particular regulated water utility stock if it offered a return lower than other
11 investments of similar risk. The opportunity cost simply would not justify such an
12 investment. Thus, the task for the rate of return analyst is to estimate a return on
13 equity that is equal to that being offered by other risk-comparable firms.

14 **Q. Please provide the Commission an overview of important economic factors**
15 **that affect your estimate of the allowed ROE for KAW.**

16 A. The following discussion presents my overview of certain key factors in the
17 economy that are important influences on the current investor required ROE. These
18 factors include the current level of interest rates, current levels of inflation, the
19 effects of unemployment and economic growth, and stock market volatility.

20 **Q. Does the level of interest rates affect the allowed ROE for regulated utilities?**

21 A. Generally, yes. The common stock of regulated utilities tends to be interest rate
22 sensitive. This means that the cost of equity for regulated utilities tends to rise and
23 fall with changes in interest rates. For example, as interest rates rise, the cost of

1 equity will also rise, and vice versa when interest rates fall. This relationship is due
2 in large part to the capital-intensive nature of regulated industries, including water
3 companies, that rely heavily on both debt and equity to finance their regulated
4 investments.

5 **Q. Before you continue, please provide a brief explanation of how the Federal**
6 **Reserve Board (“Fed”) uses interest rates to affect conditions in the financial**
7 **markets.**

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

10 Monetary policy in the United States comprises the Federal
11 Reserve’s actions and communications to promote maximum
12 employment, stable prices, and moderate long-term interest rates--
13 the economic goals the Congress has instructed the Federal Reserve
14 to pursue.⁵

15 One of the Fed’s primary tools for conducting monetary policy is setting the
16 federal funds rate. The federal funds rate is the interest rate set by the Fed that
17 banks and credit unions charge each other for overnight loans of reserve balances.
18 Traditionally the federal funds rate directly influences short-term interest rates,
19 such as the Treasury bill rate and interest rates on savings and checking accounts.
20 The federal funds rate has a more indirect effect on long-term interest rates, such
21 as the 30-Year Treasury bond and private and corporate long-term debt. Long-term

⁵ Monetary Policy (Sept. 13, 2023), <https://www.federalreserve.gov/monetarypolicy.htm>.

1 interest rates are set more by market forces that influence the supply and demand
2 of loanable funds.

3 **Q. Describe the trend in interest rates since 2007.**

4 A. Until recently, the overall trend in interest rates in the U.S. and the world economy
5 had been lower and this continued into 2020-2021 as governments and central
6 banks, including the Fed, instituted programs in response to the economic shocks
7 brought about by the COVID-19 pandemic. The trend of lower interest rates was
8 precipitated by the 2007 financial crisis and severe recession that followed in
9 December 2007. In response to this economic crisis, the Fed undertook a series of
10 steps to stabilize the economy, ease credit conditions, and lower unemployment and
11 interest rates. These steps are commonly known as Quantitative Easing (“QE”) and
12 were implemented in three distinct stages: QE1, QE2, and QE3. The Fed’s stated
13 purpose of QE was “to support the liquidity of financial institutions and foster
14 improved conditions in financial markets.”⁶

15 In 2022, however, the Fed began an aggressive policy of raising short-term
16 interest rates in response to concerns about persistently high inflation in the
17 economy, which began to be a problem in 2021. After the Fed reduced the federal
18 funds rate to nearly 0% through 2021, it was increased several times in 2022 and
19 2023 and as of the filing of my Direct Testimony now stands at a target range of

⁶ *Credit and Liquidity Programs and the Balance Sheet*, Monetary Policy, FED. RESERVE BD., (May 10, 2021). https://www.federalreserve.gov/monetarypolicy/bst_crisisresponse.htm.

1 5.25% - 5.50%. In its press release issued September 20, 2023, the Fed stated the
2 following:

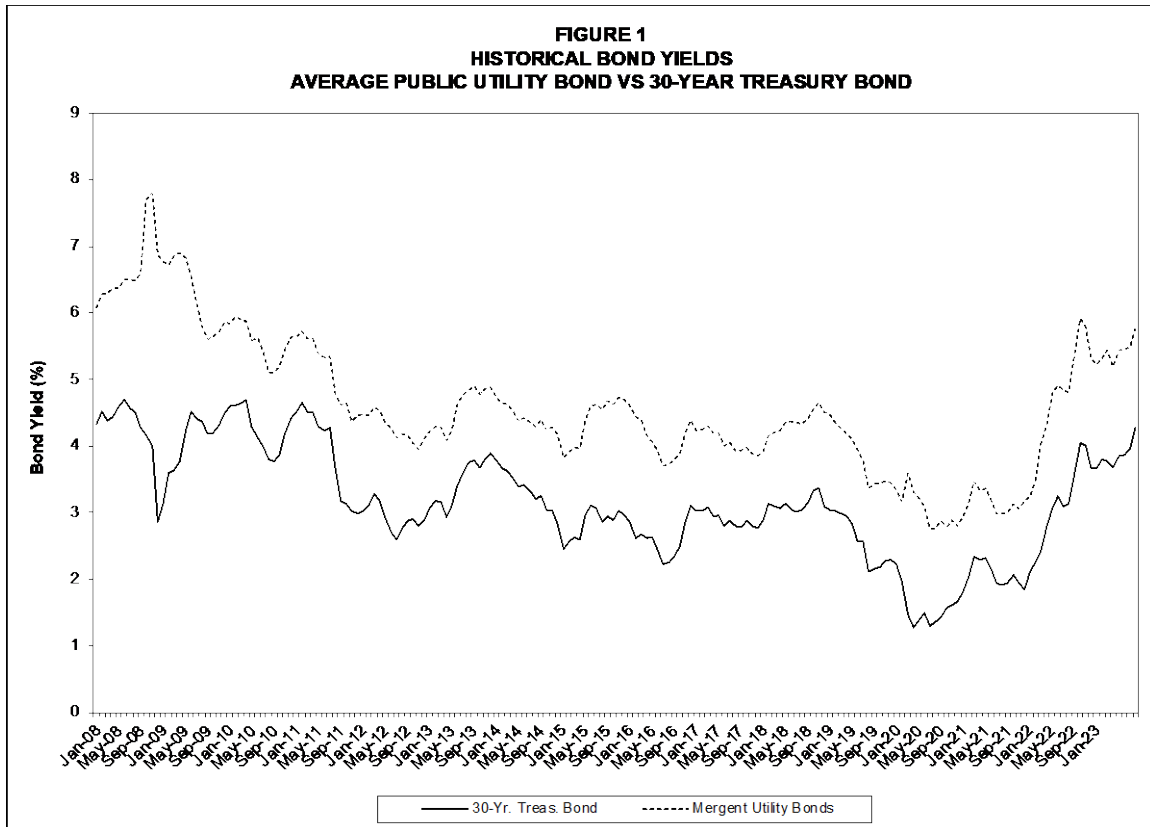
3 Recent indicators suggest that economic activity has been expanding
4 at a solid pace. Job gains have slowed in recent months but remain
5 strong, and the unemployment rate has remained low. Inflation
6 remains elevated.

7
8 The U.S. banking system is sound and resilient. Tighter credit
9 conditions for households and businesses are likely to weigh on
10 economic activity, hiring, and inflation. The extent of these effects
11 remains uncertain. The Committee remains highly attentive to
12 inflation risks.

13
14 The Committee seeks to achieve maximum employment and
15 inflation at the rate of 2 percent over the longer run. In support of
16 these goals, the Committee decided to maintain the target range for
17 the federal funds rate at 5-1/4 to 5-1/2 percent. The Committee will
18 continue to assess additional information and its implications for
19 monetary policy. In determining the extent of additional policy
20 firming that may be appropriate to return inflation to 2 percent over
21 time, the Committee will take into account the cumulative tightening
22 of monetary policy, the lags with which monetary policy affects
23 economic activity and inflation, and economic and financial
24 developments. In addition, the Committee will continue reducing its
25 holdings of Treasury securities and agency debt and agency
26 mortgage-backed securities, as described in its previously
27 announced plans. The Committee is strongly committed to returning
28 inflation to its 2 percent objective.⁷

29 Figure 1 below presents a graph that tracks the 30-Year Treasury bond yield
30 and the Mergent average utility bond yield. The graph covers the period from
31 January 2008 through August 2023.

⁷ *Federal Reserve issues FOMC statement*, Press Release, FED. RESERVE BD., (September 20, 2023), <https://www.federalreserve.gov/monetarypolicy/files/monetary20230920a1.pdf> (emphasis added).



1 Figure 1 shows the sharp increase in bond yields since the summer of 2021.
 2 The 30-year Treasury Bond yield increased from 2.10% in January 2022 to 4.28%
 3 in August 2023, an increase of 2.18%, or 218 basis points. The Mergent average
 4 public utility bond yield increased during that same period from 3.25% to 5.77%,
 5 an increase of 2.52%, or 252 basis points.

6 **Q. What has been the recent experience with inflation?**

7 A. Figure 2 presents monthly annualized inflation data from January 2021 through
 8 August 2023, the most recent monthly data that was available to me.

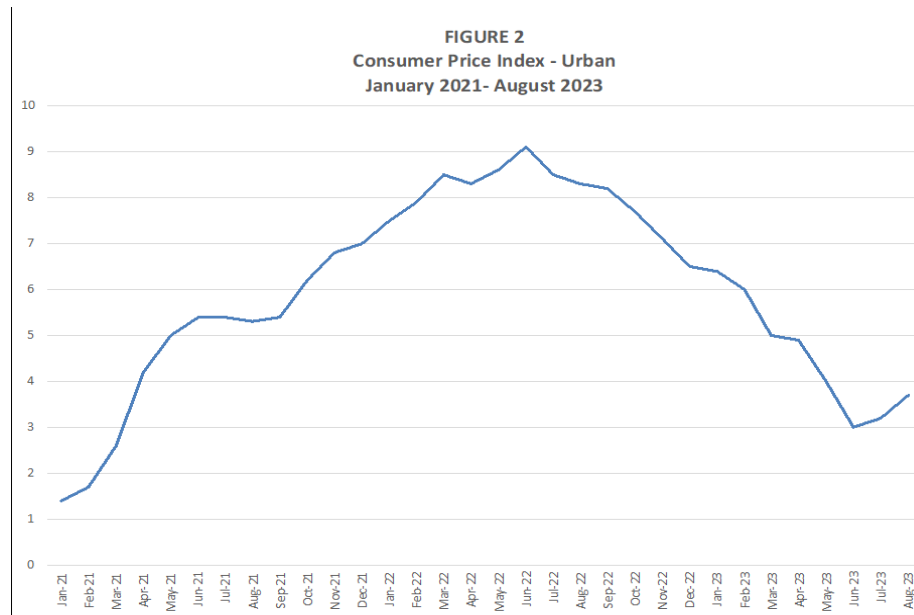


Figure 2 shows that inflation greatly accelerated in 2021, peaked in June 2022 at 9.1%, then declined substantially through June 2023 to 3.0%. Inflation has ticked up to 3.7% as of August 2023 and is still higher than the Fed’s target rate of 2.0%.

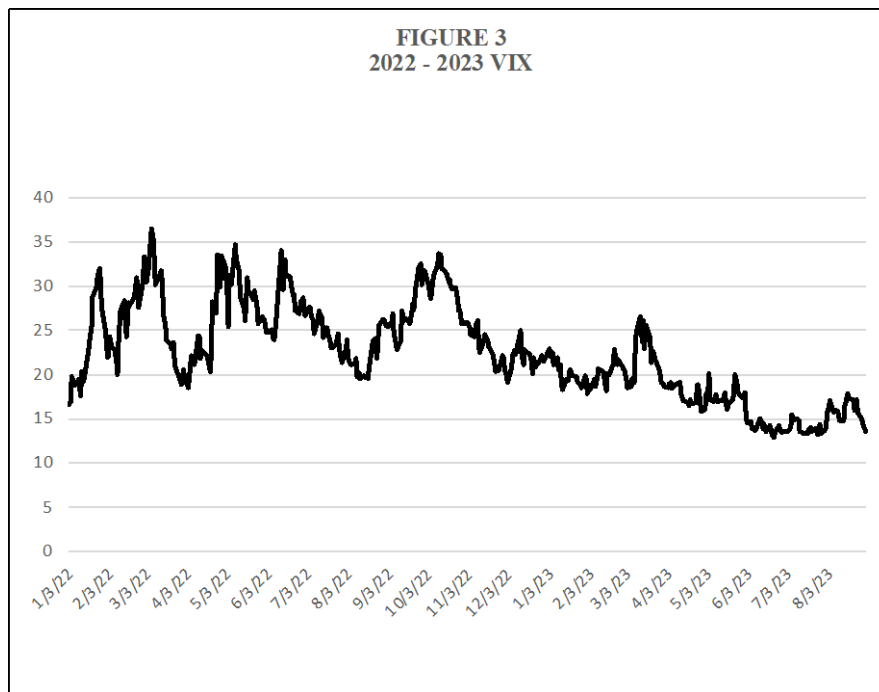
Q. What are the expectations for inflation, interest rates, and other economic indicators going forward?

A. The Federal Reserve Bank of Philadelphia publishes the *Survey of Professional Forecasters* (“Survey”), in which a panel of 37 forecasters provide projections for several economic variables, including growth in Gross Domestic Product (“GDP”), inflation, and unemployment, as well as short-term and long-term interest rates. The most recent edition of the Survey, dated August 11, 2023, provided the following forecasts:

- Consumer Price Index (“CPI”) inflation is expected to average 3.1% for 2023, 2.5% for 2024, and 2.4% for 2025. Over the next 10 years, the forecasters expect CPI inflation to average 2.40% per year.

1 **Q. Please provide the Commission with some additional background information**
 2 **regarding market volatility since the beginning of 2022.**

3 A. A widely used measure of market volatility is the Chicago Board Options Exchange
 4 (“CBOE”) Volatility Index (“VIX”), also called the “fear index” or “fear gauge.”
 5 Basically, the VIX measures the market’s expectations for volatility over the next
 6 30-day period. The higher the VIX, the greater the expectation of volatility and
 7 market risk. Figure 3 presents the VIX from January 1, 2022 through August 31,
 8 2023.¹⁰



9
 10 Figure 3 shows the significant increase in market volatility during 2022,
 11 then a gradual decline through August 2023. The VIX high in 2022 was 36.45 on
 12 March 7. As of August 31, 2023, the VIX stood at 13.57, a substantial decline in

¹⁰Historical Data for Cboe VIX Index and Other Volatility Indices, CBOE, https://www.cboe.com/tradable_products/vix/vix_historical_data/.

1 expected market volatility since the 2022 high as well as from the beginning of this
2 year.

3 **Q. How have utilities fared recently compared to the overall stock market?**

4 A. With the sharp increase in interest rates this year, the utility stock market indexes
5 have generally declined. Since January 3, 2023, the Standard and Poor's ("S&P")
6 500 Utilities index declined from 358.50 to a closing price of 317.74 on August 31,
7 2023. This represents a percentage decline of 11.4%. During the same period, the
8 Standard and Poor's 500 index increased from 3824.14 to 4507.66, a percentage
9 increase of 17.9%.

10 **Q. What are the current credit ratings for KAW's parent company American**
11 **Water Works Company, Inc.?**

12 A. KAW is an operating subsidiary of American Work Works Company, Inc.
13 ("AWW") and does not have its own credit ratings. AWW, KAW's parent
14 company, currently has a credit rating of Baa1 with a stable outlook from Moody's
15 and an A rating with a stable outlook from S&P.¹¹ On page 14 of its Investor
16 Presentation for August 2023, AWW noted its low-risk business profile, strong
17 regulatory jurisdictions, and supportive financial plans as being associated with
18 these ratings.¹² Please refer to page 2 of Exhibit RAB-2 for this page from AWW's
19 presentation. AWW also noted its total debt to capital percentage of 54% as of June
20 30, 2023

¹¹ Bulkley Testimony at 25 – 26.

¹²https://s26.q4cdn.com/750150140/files/doc_presentations/2023/August-2023-Investor-Presentation.pdf.

1 Further in this presentation, AWW presented its allowed ROEs throughout
2 the Company. These ROEs ranged from 9.5% to 10.0%. Please refer to page 3 of
3 Exhibit RAB-2 for this information. Equity ratios in the various states ranged from
4 34.38% (Tennessee) to 57.04% (California).

5 **Q. How does the investment community view AWW as an investment?**

6 A. In an article from Zacks dated August 8, 2023 entitled “4 Stocks to Buy Now From
7 the Prospering Water Supply Industry,”¹³ Zacks recommended AWW as one of
8 four water utilities that investors should consider purchasing. Zacks noted that
9 AWW “continues to expand operations through acquisitions and organic means.
10 American Water Works plans to invest \$2.9 billion in 2023 to strengthen and
11 expand its existing infrastructure. Over the past 60 days, the Zacks Consensus
12 Estimate for 2023 earnings has moved up by 0.2%. The long-term (three to five
13 years) earnings growth of the company is currently pegged at 8.18%. The current
14 dividend yield of the company is 1.99%. The company delivered an average
15 surprise of 7.07% in the last four quarters. American Water currently has a Zacks
16 Rank #2 (Buy).” In a September 13, 2023 report, Zacks stated that AWW was “not
17 only an attractive dividend play, but also represents a compelling investment
18 opportunity ...”¹⁴

19 **Q. Has KAW generated reasonable ROEs over the last few years?**

¹³ <https://finance.yahoo.com/news/4-stocks-buy-now-prospering-121900028.html>.

¹⁴ <https://www.zacks.com/stock/news/2148440/are-you-looking-for-a-high-growth-dividend-stock>.

1 A. Yes. The Company's response to the OAG's First Request for Information, No.
2 110 provided the following earned ROEs from 2017 through 2022:

3 2017: 10.75%
4 2018: 9.58%
5 2019: 9.21%
6 2020: 9.25%
7 2021: 9.35%
8 2022: 9.78%

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

10 **Q. Please describe the methods you employed in estimating a fair rate of return**
11 **for the regulated water operations of KAW.**

12 A. I employed two methods of estimating the ROE for KAW: the Discounted Cash
13 Flow ("DCF") model and the Capital Asset Pricing Model ("CAPM"). I applied
14 these ROE estimation techniques to a group of proxy companies that was developed
15 by Company witness Ms. Bulkley. My DCF analyses are based on the standard
16 constant growth form of the model that employs four different growth rate forecasts
17 from the Value Line Investment Survey, Yahoo! Finance, and Zacks. I also
18 employed Capital Asset Pricing Model ("CAPM") analyses using both historical
19 and forward-looking data. The results from the CAPM tend to support the
20 reasonableness of my DCF results as well as my ROE recommendation for KAW.

21 **DCF Model**

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

23 A. The basic DCF approach is rooted in valuation theory. It is based on the premise
24 that the value of a financial asset is determined by its ability to generate future net
25 cash flows. In the case of a common stock, those future cash flows generally take
26 the form of dividends and appreciation in stock price. The value of the stock to

1 investors is the discounted present value of future cash flows. The general equation
 2 is:

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

4 Where: *V* = asset value
 5 *R* = yearly cash flows
 6 *r* = discount rate

7 This is no different from determining the value of any asset from an
 8 economic point of view; however, the commonly employed DCF model makes
 9 certain simplifying assumptions. One is that the stream of income from the equity
 10 share is assumed to be perpetual; that is, there is no salvage or residual value at the
 11 end of some maturity date (as is the case with a bond). Another important
 12 assumption is that financial markets are reasonably efficient; that is, they correctly
 13 evaluate the cash flows relative to the appropriate discount rate, thus rendering the
 14 stock price efficient relative to other alternatives. Finally, the model I typically
 15 employ also assumes a constant growth rate in dividends. The fundamental
 16 relationship employed in the DCF method is described by the formula:

$$17 \quad k = \frac{D_1}{P_0} + g$$

18 Where: *D*₁ = the next period dividend
 19 *P*₀ = current stock price
 20 *g* = expected growth rate
 21 *k* = investor-required return

22 Using this formula, it is apparent that “k” must reflect the investors’
 23 expected return. Use of the DCF method to determine an investor-required return
 24 is complicated by the need to express investors’ expectations relative to dividends,
 25 earnings, and book value over an infinite time horizon. Financial theory suggests

1 that stockholders purchase common stock on the assumption that there will be some
2 change in the rate of dividend payments over time. We assume that the rate of
3 growth in dividends is constant over the assumed time horizon, but the model could
4 easily handle varying growth rates if we knew what they were. Finally, the relevant
5 time frame is prospective rather than retrospective.

6 **Q. Please describe your approach for selecting a proxy group of companies.**

7 A. My first step was to choose a proxy group of companies with a risk profile that is
8 reasonably reflective of the risks facing a low risk, regulated water utility such as
9 KAW. I reviewed the proxy group selected by Ms. Bulkley and the selection
10 criteria she used. This proxy group consisted of regulated water and gas companies
11 and one electric company that owns significant regulated water operations. Ms.
12 Bulkley presented her selection criteria for this group on pages 26 - 27 of her Direct
13 Testimony.

14 The proxy group selected by Ms. Bulkley provides a reasonable basis upon
15 which to estimate the ROE for KAW in this case. It is particularly important to use
16 a combined utility proxy group for this case since there are only seven water
17 companies in Value Line's water utilities group, as Ms. Bulkley pointed out in her
18 Direct Testimony.¹⁵ The DCF results for such a small sized proxy group could be
19 influenced by unrepresentative data for a single company, such as an unsustainably
20 high growth rate or a low growth rate that does not reflect a company's longer term

¹⁵ Bulkley Testimony at 28.

1 growth expectations. I also support Ms. Bulkley's statements regarding our use of
2 a combined proxy group of companies in KAW's last rate case.¹⁶

3 **Q. What was your first step in determining the DCF return on equity for the**
4 **proxy group?**

5 A. I first determined the current dividend yield, D_1/P_0 , from the basic equation. My
6 general practice is to use six months as the most reasonable period over which to
7 estimate the dividend yield. The six-month period I used covered the months from
8 March through August 2023. The annualized dividend divided by the average
9 monthly price represents the average dividend yield for each month in the period.

10 The resulting average dividend yield for the proxy group is 2.93%. These
11 calculations are shown in Exhibit RAB-3.

12 **Q. Earlier in your Direct Testimony, you discussed the volatility currently in the**
13 **stock market. Discuss the monthly dividend yields for the proxy group and**
14 **how you concluded that the six-month average yield is reasonable given this**
15 **volatility.**

16 A. The monthly dividend yields shown on Exhibit RAB-3, page 2, range from 2.79%
17 in April to 3.08% in August. The increase in the August dividend yield was
18 consistent with the increases in long-term bond yields in August. I will discuss this
19 in more detail later in my testimony, as well as how I took this into consideration
20 in formulating my ROE recommendation to the Commission in this case.

21 **Q. Having established the average dividend yield, how did you determine the**
22 **investors' expected growth rate for the proxy group?**

¹⁶ *Id.* at 29.

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

8 For my analysis in this proceeding, I used three major sources of analysts'
9 forecasts for growth: Value Line, Zacks, and Yahoo! Finance. This is the method
10 I typically use for estimating growth for my DCF calculations.

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

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

19 Zacks gathers opinions from a variety of analysts on earnings growth
20 forecasts for numerous firms including regulated water utilities. The estimates of
21 the analysts responding are combined to produce consensus average estimates of
22 earnings growth. I obtained Zacks' earnings growth forecasts from its web site.
23 Like Zacks, Yahoo! Finance also compiles and reports consensus analysts'

1 forecasts of earnings growth. I also obtained these estimates from Yahoo!
2 Finance's website.

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

4 A. ROE analysis is a forward-looking process. Five-year or ten-year historical growth
5 rates may not accurately represent investor expectations for future dividend and
6 earnings growth. Analysts' forecasts for earnings and dividend growth provide
7 better proxies for the expected growth component in the DCF model than historical
8 growth rates. Analysts' forecasts are also widely available to investors and one can
9 reasonably assume that they influence investor expectations.

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

12 Q. Columns (1) through (4) of Exhibit RAB-4 show the forecasted dividend and
13 earnings growth rates from Value Line and the earnings growth forecasts from
14 Zacks and Yahoo! Finance for the companies in the proxy group. It is important to
15 include dividend growth forecasts in the DCF model since the model calls for
16 forecasted cash flows and Value Line is the only source of which I am aware that
17 forecasts dividend growth.

18 There were Zacks forecasts that were unavailable for three companies in the
19 group: California Water Service Group, Middlesex Water Company, and SJW
20 Group. With three out of the eleven Zacks forecasts missing, I chose to use the
21 Yahoo! Finance growth rates for these companies to fill out the missing Zacks
22 numbers. In my view, this is a reasonable approach since the Yahoo! Finance
23 growth rates are consensus forecasts similar to Zacks. I also used the Zacks growth

1 forecast in place of the unavailable Yahoo! Finance growth rate for Spire, Inc.

2 **Q. Using this information, how did you determine the DCF ROE for the proxy**
3 **group?**

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

8 Exhibit RAB-4 presents my standard method of calculating dividend yields,
9 growth rates, and ROE for the proxy group. The proxy group DCF ROE section
10 shows the application of each of four growth rates to the current dividend yield of
11 2.93% to calculate the expected dividend yield. I then added the expected growth
12 rates to the expected dividend yield. My DCF ROE was calculated using two
13 different methods. Method 1 uses the average growth rates for the proxy group and
14 Method 2 utilizes the median growth rates.

15 **Q. What are the results of your constant growth DCF model?**

16 A. For Method 1 (average growth rates), the results range from 8.67% to 9.94%, with
17 the average of these results being 9.07%. For Method 2 (median growth rates), the
18 results range from 8.41% to 9.52%, with the average of these results being 9.04%.¹⁷

19 It is also useful to consider the spread of results from Methods 1 and 2.
20 Given the persistently high inflation and increasing long-term bond yields so far

¹⁷ Refer to Exhibit RAB-4 for these results.

1 this year, I conclude that the 8.41% ROE result in Method 2 is too conservative.
2 The lower bound of all the DCF results shown in Exhibit RAB-4 is approximately
3 8.70%. The upper bound is approximately 10.0%.

4 **Capital Asset Pricing Model**

5 **Q. Briefly summarize the CAPM approach.**

6 A. The theory underlying the CAPM approach is that investors, through diversified
7 portfolios, may combine assets to minimize the total risk of the portfolio.
8 Diversification allows investors to diversify away all risks specific to a particular
9 company and be left only with market risk that affects all companies. Thus, the
10 CAPM theory identifies two types of risks for a security: company-specific risk and
11 market risk. Company-specific risk includes such events as strikes, management
12 errors, marketing failures, lawsuits, and other events that are unique to a particular
13 firm. Market risk includes inflation, business cycles, war, variations in interest
14 rates, and changes in consumer confidence. Market risk tends to affect all stocks
15 and cannot be diversified away. The idea behind the CAPM is that diversified
16 investors are rewarded with returns based on market risk.

17 Within the CAPM framework, the expected return on a security is equal to
18 the risk-free rate of return plus a risk premium that is proportional to the security's
19 market, or non-diversifiable risk. Beta is the factor that reflects the inherent market
20 risk of a security and measures the volatility of a particular security relative to the
21 overall market for securities. For example, a stock with a beta of 1.0 indicates that
22 if the market rises by 15%, that stock will also rise by 15%. This stock moves in
23 tandem with movements in the overall market. Stocks with a beta of 0.5 will only

1 rise or fall 50% as much as the overall market. With an increase in the market of
 2 15%, this stock will only rise 7.5%. Stocks with betas greater than 1.0 will rise and
 3 fall more than the overall market. Thus, beta is the measure of the relative risk of
 4 individual securities vis-à-vis the market.

5 Based on the foregoing discussion, the equation for determining the return
 6 for a security in the CAPM framework is:

$$7 \quad K = R_f + \beta(MRP)$$

8 *Where:* K = Required Return on equity
 9 R_f = Risk-free rate
 10 MRP = Market risk premium
 11 β = Beta

12 This equation tells us about the risk/return relationship posited by the
 13 CAPM. Investors are risk averse and will only accept higher risk if they expect to
 14 receive higher returns. These returns can be determined in relation to a stock's beta
 15 and the market risk premium ("MRP"). The general level of risk aversion in the
 16 economy determines the MRP. If the risk-free rate of return is 3.0% and the
 17 required return on the total market is 15%, then the risk premium is 12%. Any
 18 stock's risk premium can be determined by multiplying its beta by the MRP. Its
 19 total return may then be estimated by adding the risk-free rate to that risk premium.
 20 Stocks with betas greater than 1.0 are considered riskier than the overall market and
 21 will have higher required returns. Conversely, stocks with betas less than 1.0 will
 22 have required returns lower than the market as a whole.

23 **Q. In general, are there concerns regarding the use of the CAPM in estimating**
 24 **the ROE?**

1 A. Yes. There is some controversy surrounding the use of the CAPM and its accuracy
2 regarding expected returns. There is substantial evidence that beta is not the
3 primary factor for determining the risk of a security. For example, Value Line’s
4 “Safety Rank” is a measure of total risk, not its calculated beta coefficient. Dr.
5 Burton Malkiel, author of *A Random Walk Down Wall Street* noted the following
6 in his best-selling book on investing:

7 Second, as Professor Richard Roll of UCLA has argued, we must
8 keep in mind that it is very difficult (indeed probably impossible) to
9 measure beta with any degree of precision. The S&P 500 Index is
10 not “the market.” The total stock market contains many thousands
11 of additional stocks in the United States and thousands more in
12 foreign countries. Moreover, the total market includes bonds, real
13 estate, commodities, and assets of all sorts, including one of the most
14 important assets any of us has - the human capital built up by
15 education, work, and life experience. Depending on exactly how you
16 measure “the market” you can obtain very different beta values.¹⁸

17 Shannon Pratt and Roger Grabowski, authors of *Cost of Capital*, also stated
18 the following with respect to the CAPM:

19 Even though the capital asset pricing model (CAPM) is the most
20 widely used method of estimating the cost of equity capital, the
21 accuracy and predictive power of beta as the sole measure of risk
22 have increasingly come under attack. As a result, alternative
23 measures of risk have been proposed and tested. That is, despite its
24 wide adoption, academics and practitioners alike have questioned
25 the usefulness of CAPM in accurately estimating the cost of equity
26 capital and the use of beta as a reliable measure of risk.¹⁹

27 As a practical matter, there is substantial judgment involved in estimating
28 the required market return and MRP. In theory, the CAPM requires an estimate of

¹⁸ Burton G. Malkiel, *A Random Walk Down Wall Street*, 219 (2023 ed. 2023).

¹⁹ Shannon Pratt & Roger Grabowski, *Cost of Capital* 269 (5th ed 2014).

1 the return on the total market for investments, including stocks, bonds, real estate,
2 etc. It is nearly impossible for the analyst to estimate such a broad-based return.
3 Often in utility cases, a market return is estimated using the S&P 500. However,
4 as Dr. Malkiel pointed out, this is a limited source of information with respect to
5 estimating the investor's required return for all investments. In practice, the total
6 market return and MRP estimates face limitations to estimation and, ultimately,
7 their usefulness in quantifying the investor required CAPM ROE.

8 In the final analysis, a considerable amount of judgment must be employed
9 in determining the market return and expected risk premium elements of the CAPM
10 equation. The analyst's application of judgment can significantly influence the
11 results obtained from the CAPM. My experience with the CAPM indicates that it
12 is prudent to use a wide variety of data in estimating investor-required returns. Of
13 course, the range of results may also be wide, indicating the challenge in obtaining
14 a reliable estimate from the CAPM.

15 **Q. How did you estimate the market return and MRP of the CAPM?**

16 A. I used three approaches to estimate the MRP portion of the CAPM equation. First,
17 I will present an approach that uses the expected return on the market and is
18 forward-looking. Second, I will present an approach that employs two historical
19 MRPs based on actual stock and bond returns. Third, I will present other published
20 sources that estimate the current investor required MRP.

21 **Q. Please describe your forward-looking approach to estimating the MRP.**

1 A. The first source I used was the Value Line Summary and Index dated September 1,
2 2023. The Value Line Summary and Index provides data with which one may
3 calculate a DCF estimate on the companies that Value Line follows. Value Line
4 presents a median estimated dividend yield for all dividend paying stocks (2.30%)
5 and the median estimated 3–5-year price appreciation potential of all stocks in the
6 Value Line universe (60%). The estimated 3-5-year appreciation estimate
7 translates into an annualized appreciation number, or growth rate, of 12.47%. I
8 present Value Line’s projected annual returns on page 1 of Exhibit RAB-5. The
9 DCF ROE result is 12.77%.

10 **Q. Please continue with your MRP analysis.**

11 A. The second source I considered came from Kroll, which compiled a study of
12 historical returns on the stock market in its *Cost of Capital Navigator: U.S. Cost of*
13 *Capital Module* and is part of its Cost of Capital Navigator subscription service.
14 Kroll provides services to clients in 140 countries covering valuation, compliance
15 and regulation, corporate finance and restructuring, and other areas. Kroll now
16 provides the Cost of Capital Navigator service that was formerly provided by Duff
17 and Phelps.

18 Some analysts employ historical data to estimate the MRP of stocks over
19 the risk-free rate. The assumption is that a risk premium calculated over a long
20 period of time is reflective of investor expectations going forward. Exhibit RAB-
21 5, page 2, presents the calculation of the market returns and MRPs using the
22 historical data from Kroll.

1 **Q. Please explain how these historical MRPs are calculated.**

2 A. Exhibit RAB-5, page 2, shows the arithmetic average of yearly historical stock
3 market returns over the historical period from 1926 – 2022. The average annual
4 income return for the 20-year Treasury bond is subtracted from these historical
5 stock returns to obtain the historical MRP of stock returns over long-term Treasury
6 bond income returns. The resulting historical MRP is 7.10%.

7 **Q. Did you add any additional measures of historical risk premiums in this case?**

8 A. Yes. Kroll reported the results of a study by Dr. Roger Ibbotson and Dr. Peng Chen
9 indicating that the historical risk premium of stock returns over long-term
10 government bond returns has been significantly influenced upward by substantial
11 growth in the price/earnings (“P/E”) ratio.²⁰ Kroll noted that this growth in the P/E
12 ratio for stocks was subtracted out of the historical risk premium to arrive at an
13 adjusted “supply side” historical arithmetic MRP. The most recent “supply side”
14 historical MRP is 6.35%, which I have also included in Exhibit RAB-4, page 2.

15 **Q. Is there additional evidence that the growth in the P/E ratio should be removed**
16 **from the historical risk premium?**

17 A. Yes. William Goetzman and Roger Ibbotson wrote the following regarding the
18 supply-side approach to estimating the equity risk premium:

19 There are several ways in which one might estimate an expected risk
20 premium used for forecasting. One way is to extrapolate historical
21 risk premiums, as did Ibbotson and Sinquefeld. Another is to use
22 investor demand models based upon investor risk aversion, as did
23 Mehra and Precott. A third way is to look at the type of returns that
24 the corporate sector supplies. Diermeir, Ibbotson, and Siegel (1984)

²⁰ *Kroll Cost of Capital Navigator: U.S. Cost of Capital Module*, Basic Building Blocks of the Cost of Equity Capital – Risk-free Rate and Equity Risk Premium (Abridged), pp. 4 – 6.

1 and later Ibbotson and Chen (2003) used this supply approach. They
2 extrapolated the cash flows and earnings growth generated by
3 companies themselves. These forecasts tend to give somewhat
4 lower historical risk premiums, primarily because part of the total
5 return of the stock market has come from price-to-earnings ratio
6 expansion. This expansion is not predicated to continue on
7 indefinitely and is removed from the expected risk premium.²¹
8

9 **Q. Are there other concerns regarding using the use of historical MRPs for**
10 **estimating the investor required ROE?**

11 A. Yes. A historical MRP calculated over a long period of time may not reflect current
12 investor expectations and requirements. For example, Pratt and Grabowski
13 presented a detailed discussion of the sources of potential upward bias and
14 overstatement of the long-term historical risk premium.²² One potential source of
15 bias they analyzed was the historical period of 1942 – 1951, which included
16 government-imposed stability in interest rates for government bonds during the
17 Second World War. Pratt and Grabowski named this period “WWII Interest Rate
18 Bias” and estimated that it resulted in an overstatement of the long-run historical
19 risk premium of 117 basis points, or 1.17%. Pratt and Grabowski also considered
20 the supply-side MRP, which I considered and presented earlier.

21 Kroll analyzed and calculated the so-called World War II Interest Rate Bias
22 and subtracted it from the supply-side ERP of 6.35%, resulting in an adjusted
23 historical ERP of 5.37%. I also present this historical ERP on page 2 of Exhibit
24 RAB-5.

²¹ William N. Goetzmann & Roger G. Ibbotson, Handbook of the Equity Risk Premium 522-523 (Rajnish Mehra ed., Elsevier B.V., 2008).

²² Pratt and Grabowski, Cost of Capital, 119 – 131 (Wiley, 5th ed.)

1 In addition to the foregoing discussions, Dr. Aswath Damodaran of the
2 Stern Business School observed the following regarding the use of historical MRPs:

3 Given how widely the historical risk premium approach is used, it
4 is surprising that the flaws in the approach have not drawn more
5 attention. Consider first the underlying assumption that investors'
6 risk premiums have not changed over time and that the average risk
7 investment (in the market portfolio) has remained stable over the
8 period examined. We would be hard pressed to find anyone who
9 would be willing to sustain this argument with fervor. The obvious
10 fix for this problem, which is to use a more recent time period, runs
11 directly into a second problem, which is the large noise associated
12 with historical risk premium estimates. While these standard errors
13 may be tolerable for very long time periods, they clearly are
14 unacceptably high when shorter periods are used.²³

15 Although the simple, unadjusted long-run historical risk premium is widely
16 used and available to investors, it is flawed and likely to overstate the investor
17 expected risk premium for forecasting purposes. It should be viewed with a great
18 deal of caution and supplemented with other sources as I have done here.

19 **Q. Did you consider any other sources for estimating the MRP?**

20 **A.** Yes, I also considered two other sources for estimating the MRP.

21 First, Kroll provides a recommendation for the MRP for the United States.
22 Its recommended MRP as of June 2023 is 5.50%.²⁴

23 Second, Dr. Aswath Damodaran provides monthly estimates of the MRP
24 using what he calls an implied risk premium approach. Dr. Damodaran is a
25 professor of finance at the Stern School of Business at New York University and is

²³ *Equity Risk Premiums (ERP): Determinants, Estimation, and Implications – The 2022 Edition, Updated: March 23, 2022*, Aswath Damodaran, Stern School of Business.

²⁴<https://www.kroll.com/-/media/cost-of-capital/kroll-lowers-its-recommended-us-equity-risk-premium.pdf>.

1 a researcher on the topic of MRPs, among other things. As of September 1, 2023,
 2 Dr. Damodaran estimated an MRP in the range of 4.35% - 5.79%, with an average
 3 of 4.82%.²⁵

4 These ERPs are presented on page 3 of Exhibit RAB-5.

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

6 A. Initially, I considered a six-month average of the 30-year Treasury bond yield from
 7 March through August 2023. These yields are shown in Exhibit RAB-5, page 1.
 8 The six-month average 30-Year Treasury Bond yield is 3.90%. This six-month
 9 period tracks the six-month period I used for stock prices in my DCF analyses.

10 I also considered the steady increase in long-term bond yields so far in 2023
 11 and the 31 basis point increase in the 30-Year Treasury yield from July to August,
 12 with the August yield at 4.28%. To be conservative, I chose to use 4.30% as the
 13 risk-free rate in my CAPM analyses in this proceeding.

14 **Q. Please summarize your calculated MRP estimates with the forward-looking**
 15 **data from Value Line, the historical MRPs, and the two other sources you**
 16 **described.**

17 A. The MRPs from Exhibit RAB-5 pages 1 through 3 are as follows:

- 18 • Value Line forward-looking risk premium 10.47%
- 19 • Historical risk premium 5.37% - 7.10%
- 20 • Kroll 5.50%
- 21 • Average Damodaran MRP 4.82%

²⁵Aswath Damodaran, Damodaran Online (last visited September 3, 2023), https://pages.stern.nyu.edu/~adamodar/New_Home_Page/home.htm.

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

2 A. I obtained the betas for the companies in the proxy group from the most recent
3 Value Line reports at the time I prepared my Direct Testimony and analyses. The
4 average of the Value Line betas for the proxy group is 0.81.²⁶

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

6 A. The forward-looking CAPM ROE estimate is 12.77%.²⁷ Using historical risk
7 premiums, the CAPM results range from 8.64% to 10.04%.²⁸ Regarding the Kroll
8 and Damodaran MRPs, the CAPM estimates range from 8.20% to 8.75%.²⁹

9 **Recommended ROE and Capitalization**

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

11 A. Table 1 summarizes my ROE results using the DCF and CAPM for the proxy group.

²⁶ Refer to Exhibit RAB-5, page 1.

²⁷ *Id.*

²⁸ *Id.* at page 2.

²⁹ *Id.* at page 3.

TABLE 1	
SUMMARY OF ROE ESTIMATES	
<u>DCF Methodology</u>	
Average Growth Rates	
- High	9.94%
- Low	8.67%
- Average	9.07%
Median Growth Rates:	
- High	9.52%
- Low	8.41%
- Average	9.04%
<u>CAPM Methodology</u>	
Forward-looking Market Return:	12.77%
Historical Risk Premium:	
- Arithmetic Mean	10.04%
- Supply side MRP	9.44%
- Supply side Less WVM Bias	8.64%
Kroll MRP	8.75%
Damodaran MRP	8.20%

1

2 **Q. What is your recommended ROE range for KAW?**

3 A. I recommend that the Commission adopt a ROE range of 8.70% - 10.0% for KAW.
 4 My range is informed mainly by the DCF results and supported by my CAPM
 5 analyses. Given increased interest rates this year as well as the decline in utility
 6 stocks generally, I omitted ROE results below 8.70% as being too conservative at
 7 this time. The top of my range was informed by the top of the DCF ROE range
 8 (9.94%) and the historical MRP values for the CAPM (10.04%).

9 Based on my analyses and consideration of current financial market
 10 conditions, I recommend a return on equity for KAW of 9.40%, near the midpoint
 11 of my recommended range.

1 Regarding the CAPM results, the forward-looking CAPM ROE of 12.77%
2 is implausibly high and represents an extreme outlier. This is due to an
3 unsustainably high growth rate for the market of 12.47%. Given recent forecasts
4 of long run GDP growth of around 4.0%, a 12.47% constant growth rate simply
5 cannot be sustained indefinitely. This causes an overstatement of the expected
6 market return and my forward-looking CAPM result. I will discuss this in more
7 detail in my response to Ms. Bulkley in Section IV of my Direct Testimony. Thus,
8 I do not recommend that the Commission consider 12.77% as a viable ROE result.

9 **Q. Did you review the Company's requested capital structure in this case?**

10 A. Yes. I reviewed the Direct Testimonies filed by Witnesses Furia and Bulkley
11 relating to capital structure and the costs of short-term and long-term debt. In this
12 case, the Witnesses recommend a capital structure consisting of 52.45% common
13 equity, 46.21% long-term debt, 0.96% short-term debt, and 0.38% preferred stock.
14 The proposed cost of long-term debt is 4.681%.³⁰ The proposed cost of short-term
15 debt is 3.818%. The proposed cost of preferred stock is 8.51%.³¹

16 **Q. Based on your review of the Witnesses' testimonies and supporting work**
17 **papers and schedules, do you accept the proposed costs of short-term and long-**
18 **term debt and preferred stock?**

19 A. Yes. I recommend the Commission adopt the Witnesses proposed costs of short-
20 term and long-term debt and preferred stock.

³⁰ Bulkley Testimony at 58; Furia Testimony at 4.

³¹ Schedule J-1.

1 **Q. Should the Commission adopt KAW’s proposed capital structure?**

2 A. No. The Company’s requested common equity ratio of 52.45% is excessive when
3 compared to its recent historical common equity percentages. Instead, I
4 recommend that the Commission adopt a common equity ratio of 50%. I
5 rebalanced the Company’s capital structure by increasing the long-term debt ratio
6 to 48.66%. I accepted the Company’s requested percentages of short-term debt and
7 preferred stock.

8 **Q. Did you examine KAW’s actual historical capitalization ratios?**

9 A. Yes. The Attorney General sought information in discovery on the Company’s 13-
10 month average capitalization amounts from 2017 through 2022.³² Table 2 below
11 summarizes the 13-month average capitalization ratios for these years.

	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>
Short-term Debt	3.1%	2.7%	5.0%	6.3%	4.5%	3.5%
Long-Term Debt	48.9%	48.5%	47.7%	45.5%	46.2%	46.7%
Preferred Stock	0.5%	0.5%	0.5%	0.5%	0.5%	0.4%
Common Equity	47.4%	48.3%	46.9%	47.7%	48.9%	49.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

12
13 KAW’s average common equity ratios ranged from 46.9% in 2019 to 49.3%
14 in 2022. The Company’s requested common equity ratio of 52.45% is a sharp break
15 from its historical capitalization and a significant increase over last year (2022).
16 Given the Company’s historical capitalization ratios, a common equity ratio of

³² KAW’s response to the Attorney General’s First Request for Information (“Attorney General’s First Request”), Item 105.

1 52.45% would simply inflate the revenue requirement for Kentucky ratepayers. I
 2 therefore recommend that the Commission reject KAW's requested capital
 3 structure.

4 **Q. What is your recommended capital structure in this case?**

5 A. I recommend that the Commission adopt a 50% common equity ratio and a 48.66%
 6 long-term debt ratio. My recommended common equity ratio is consistent with
 7 KAW's 2022 common equity ratio and is higher than its common equity ratios over
 8 the last five years. My recommended weighted cost of capital to be applied to the
 9 Company's rate base is 7.047% as presented in Table 3.

	<u>Percentage</u>	<u>Cost</u>	<u>Weighted Cost</u>
Short-term Debt	0.960%	3.818%	0.037%
Long-Term Debt	48.660%	4.681%	2.278%
Preferred Stock	0.380%	8.510%	0.032%
Common Equity	50.000%	9.400%	4.700%
Total	100.000%		7.047%

10

11

IV. RESPONSE TO KAW ROE TESTIMONY

12

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

1 A. Ms. Bulkley’s recommended ROE range is 10.0% to 11.0%, with a recommended
2 ROE for KAW of 10.75%, which is close to the top of this range.³³ Ms. Bulkley
3 used two models to estimate the cost of equity for KAW: the DCF, the CAPM and
4 the Empirical CAPM (“ECAPM”). The results of her analyses are included in
5 Figure 1, pages 5 and 6 of her Direct Testimony.

6 With respect to the DCF model, Ms. Bulkley presented results for the proxy
7 group using a 30-, 90-, and 180-day average of stock prices ending April 28, 2023.³⁴
8 She also used forecasted earnings growth rates from Value Line, Zacks, and Yahoo!
9 Finance. The DCF average growth rate results ranged from 9.28% to 9.97% and
10 are presented in her Figure 7 on page 38 of her Direct Testimony.

11 With respect to the CAPM, Ms. Bulkley used one current and two projected
12 risk-free rates and betas from Value Line and Bloomberg to estimate the CAPM for
13 the proxy group. Ms. Bulkley also relied on a long-term average utility beta
14 coefficient for the companies in the proxy group that was calculated based on an
15 average of the Value Line betas from 2013 through 2022. With respect to the MRP,
16 Ms. Bulkley relied on a forward-looking approach that applied the DCF model to
17 the companies in the S&P 500, resulting in an estimate of the expected ROE for the
18 market. Using the three risk-free rates and the market return estimate of 12.0%, the

³³ Bulkley Testimony at 7 and 62.

³⁴ *Id.* at 35.

1 resulting MRPs ranged from 8.1% to 8.31%. Her CAPM results for the proxy group
2 ranged from 9.76% to 10.53%.³⁵

3 Ms. Bulkley also calculated and presented the results from the ECPAM,
4 which she described beginning on page 42 of her Direct Testimony. She testified
5 on page 43 that this version of the CAPM addresses the tendency of the so-called
6 “traditional” CAPM to underestimate the cost of equity for companies with low
7 beta coefficients. She employed a formula taken from *New Regulatory Finance* by
8 Dr. Roger Morin to adjust the results she obtained from the CAPM. The ECAPM
9 results ranged from 10.32% to 10.90%.³⁶

10 **Response to DCF Analysis**

11 **Q. Earlier in this section you summarized Ms. Bulkley’s approach to the DCF**
12 **model. How does her approach compare to yours?**

13 A. Ms. Bulkley’s DCF approach has much in common with mine. We used the same
14 proxy group to estimate the DCF. We both employed six-month, or 180-day
15 averages of stock prices. Ms. Bulkley also used 30-day and 90-day averages of
16 stock prices. We used the same three sources for our growth rates, although I
17 included Value Line’s forecast of dividend growth as well as earnings growth. We
18 used the same method to calculate the expected dividend yield: 1 plus ½ the
19 expected growth rate.

³⁵ *Id.* at 44.

³⁶ *Id.*

1 **Q. Why are your DCF results so much lower than Ms. Bulkley's?**

2 A. The main reason is the decline in Yahoo! Finance earnings growth rates. The
3 average growth rate in Ms. Bulkley's analysis was 6.42% and the median was
4 6.65%. In my updated analysis, the average Yahoo! Finance earnings growth rate
5 is 5.66% and the median is 5.40%. Recall that I used the Zacks growth rate for the
6 unavailable Yahoo! Finance growth rate for Spire, which was 4.2%. If I remove
7 that value and recalculate the average for the remaining 10 companies, the average
8 is 5.81% and the median is 5.75%. Either way, the Yahoo! Finance growth rates
9 declined since Ms. Bulkley filed her testimony.

10 In comparison, our Value Line Earnings growth rates are comparable. The
11 average Value Line growth rate was 6.82% in Ms. Bulkley's analysis and 6.91% in
12 my analysis. Our median Value Line growth rates are the same at 6.50%.

13 Zacks growth rates are also close, even though I substituted Yahoo! Finance
14 growth rates for three companies whose Zacks growth rates were unavailable. Ms.
15 Bulkley's mean and median Zacks growth rates were 5.66% and 6.00%,
16 respectively. My Zacks mean and median growth rates were 5.85% and 5.70%,
17 respectively. If I remove the three Yahoo! Finance growth rates from the
18 calculation, the mean and median values are 5.60% and 5.65%, respectively.

19 **Q. Please comment on your use of Value Line's dividend growth forecast, as that**
20 **is another difference between your DCF analysis and Ms. Bulkley's.**

21 A. As I stated in Section III of my Direct Testimony, Value Line's dividend growth
22 forecasts are available to investors and may reasonably be assumed to influence
23 their expectations for growth. I agree with Ms. Bulkley that earnings growth is the

1 primary factor that investors consider in formulating their expectations and that is
2 why I presented three different sources of earnings growth forecasts, which results
3 in a 75% weighting of earnings growth and a 25% weighting of dividend growth.

4 **Response to CAPM Analysis**

5 **Q. Turning to Ms. Bulkley's estimate of the market risk premium, or MRP, how**
6 **does her estimate compare to yours?**

7 A. Ms. Bulkley used only one source to estimate her recommended MRP. As I stated
8 earlier, her MRP was based on a DCF analysis applied to the companies in the S&P
9 500. The total return on the market, 12.0%, was based on a dividend yield of 1.73%
10 and a long-term earning growth rate of 10.19%.³⁷ This led to an MRP range of
11 8.1% to 8.31%.³⁸ However, this MRP range is overstated, which leads to an
12 overestimation of the CAPM ROE.

13 **Q. What is the primary source of Ms. Bulkley's overstated CAPM results?**

14 A. The main problem with Ms. Bulkley's CAPM analysis is the sole reliance on a
15 forward-looking market return for the S&P 500. The projected market return of
16 12.0% is overstated due to reliance on an average Value Line long-term projected
17 growth rate – 10.19% that is simply unsustainable in the long run.

18 These 3 – 5-year projected growth rates from Value Line are unsustainably
19 high in that they vastly exceed both the historical capital appreciation for the S&P

³⁷ *Id.* at 40 – 41.

³⁸ *Id.* at 41.

1 500 as well as historical and projected GDP growth rates. Kroll's historical analysis
2 shows that the arithmetic average capital appreciation for the S&P 500 was 7.9%
3 for the historical period 1926 to 2022.³⁹ Geometric, or compound growth was
4 6.1%. This historical experience stands in stark contrast to the Value Line average
5 forecasted growth rate of 10.19%. I note that the forward-looking growth rate I
6 used in my CAPM analysis, 12.47%, is also excessive and provides further support
7 for its exclusion by the Commission.

8 Ms. Bulkley's unsustainable earnings growth forecast is not supportable
9 when one further considers both historical and forecasted GDP growth for the U.S.
10 Based on data from the Bureau of Economic Analysis, U.S. Department of
11 Commerce, I calculated that the compound yearly growth rate for U.S. GDP from
12 1929 - 2022 was 6.1%. It is noteworthy that this growth rate matched the historical
13 compound growth rate for capital appreciation for the S&P 500 of 6.1%.

14 Regarding forecasts of GDP, projections that I referenced in Section II of
15 my testimony show even lower forecasted GDP growth than the historical average
16 I calculated. For example, the Fed projections called for longer-run real GDP
17 growth of 1.8% and PCE inflation of 2.0%. This translates into forecasted nominal
18 GDP of 3.80%. The Congressional Budget Office also projects growth in real GDP
19 through 2033 of 1.80% and CPI inflation of 2.0%.⁴⁰ If we assume forecasted long
20 run nominal GDP growth of around 4.0%, then the S&P 500 constant growth rate

³⁹ *Summary Statistics of Annual Total Returns, Income Returns, and Capital Appreciation Returns of Basic U.S. Asset Classes, 1926 - 2022*, Cost of Capital Navigator: U.S. Cost of Capital Module.

⁴⁰ Congressional Budget Office, *The Economic Outlook for 2023 – 2033 in 16 Charts*, February 2023.

1 of 10.19% cannot be sustained over the long run. Using this growth rate will
2 inevitably lead to an overstatement in the long-run expected market return, the
3 associated MRP, and the CAPM ROE result.

4 In *Cost of Capital*, Pratt and Grabowski noted the following with respect to
5 growth rates that significantly exceed growth in GDP:

6 The growth rate assumed in calculating the terminal value is a
7 compound growth rate *in perpetuity*, which is a very long time. At
8 a growth rate of 20% compounded annually, the company's revenues
9 would soon exceed the gross domestic product (GDP) of the United
10 States and eventually that of the world. Long-term growth rates
11 exceeding the real growth in GDP plus inflation are generally not
12 sustainable. Most analysts use more conservative growth rates in
13 calculating the terminal value. Generally, the long-term growth rate
14 only applies to the existing enterprise or core business net cash
15 flows, consistent with the net cash flow projections in the discounted
16 cash flow method⁴¹

17
18 Since the constant growth DCF requires a sustainable long-run growth rate,
19 Ms. Bulkley's projected market return and MRP estimate are overstated and should
20 be rejected.

21 **Q. Did Ms. Bulkley consider the MRPs from sources that you presented in your**
22 **testimony?**

23 A. No. As I cited earlier in my Direct Testimony, Kroll currently recommends an
24 MRP of 5.5%, the average of the Damodaran MRPs is 4.82%, and the historical
25 MRPs range from 5.37% - 7.10%. Ms. Bulkley's lowest MRP, 8.1%, is
26 significantly in excess of the historical MRP of 7.10%, which as I noted earlier is
27 likely overstated itself.

⁴¹ Shannon Pratt and Roger Grabowski, *Cost of Capital* 1195 (Wiley, 5th ed.)

1 Finally, I note that in the authoritative corporate finance textbook by
2 Brealey, Myers, Allen, and Edmans the authors stated: “We have no official
3 position on the issue, but we believe that a range of 5 to 8 percent is reasonable for
4 the risk premium in the United States.”⁴² Ms. Bulkley’s recommended MRP is at
5 the top of this range.

6 **Q. Beginning on page 42 of her Direct Testimony, Ms. Bulkley described the**
7 **ECAPM analysis she employed as an alternative to the traditional CAPM. Is**
8 **this a reasonable method to use to estimate the investor required ROE for**
9 **KAW?**

10 A. No. The ECAPM is designed to account for the possibility that the CAPM
11 understates the return on equity for companies with betas less than 1.0. Ms. Bulkley
12 explained how she applied the adjustment to her CAPM data, which was based on
13 the formula included in *New Regulatory Finance* by Dr. Roger Morin.

14 The argument that an adjustment factor is needed to “correct” the CAPM
15 results for companies with betas less than 1.0 is further evidence of the lack of
16 accuracy inherent in the CAPM itself and with beta in particular, as I pointed out
17 earlier in my Direct Testimony. The ECAPM adjustment also suggests that
18 published betas by such sources as Value Line are incorrect and that investors
19 should not rely on them in formulating their estimates using the CAPM. Finally,
20 although Ms. Bulkley cited the source of the ECAPM formula she used, she
21 provided no evidence that investors favor this version of the ECAPM over the
22 standard CAPM.

⁴² Richard A. Brealey, Stewart C. Myers, Franklin Allen and Alex Edmans, *Principles of Corporate Finance*, page 189; McGraw-Hill/Irwin, 14th Edition, 2023.

1 **Consideration of Specific Risk Factors**

2 **Q. Beginning on page 44 of her Direct Testimony, Ms. Bulkley presented a**
3 **discussion of regulatory and business risks that she contended should be**
4 **considered when determining where KAW's ROE should fall within her**
5 **recommended range of results. Please summarize your understanding of these**
6 **considerations.**

7 A. Ms. Bulkley presented the risks and other considerations that she believes should
8 be considered in setting the allowed cost of equity for KAW. These risks
9 considerations include:

- 10 • Flotation costs (pages 45 through 48)
- 11 • KAW's capital expenditure program (pages 48 through 50)
- 12 • Environmental and Water Quality regulation (pages 50 through 52)
- 13 • Regulatory environment (pages 52 through 57)

14 **Q. Should the Commission consider flotation costs in its allowed ROE for KAW?**

15 A. No. The Commission's consistent past practice is not to allow flotation costs in the
16 allowed ROE for regulated utilities in Kentucky⁴³ and Ms. Bulkley has provided
17 no new evidence that should change this practice.

18 A flotation cost adjustment attempts to recognize and collect the costs of
19 issuing common stock. Such costs typically include legal, accounting, and printing
20 costs as well as broker fees and discounts. In my opinion, it is likely that flotation
21 costs are already accounted for in current stock prices and that adding an adjustment
22 for flotation costs amounts to double counting. A DCF model using current stock

⁴³ See Case No. 2021-00214, *Electronic Application of Atmos Energy Corporation for an Adjustment of Rates* (Ky. PSC May 19, 2022), Order at 48.

1 prices should already account for investor expectations regarding the collection of
2 flotation costs. Multiplying the dividend yield by a 4% flotation cost adjustment, for
3 example, essentially assumes that the current stock price is wrong and that it must be
4 adjusted downward to increase the dividend yield and the resulting cost of equity.
5 This is an inappropriate assumption regarding investor expectations. Current stock
6 prices most likely already account for flotation costs, to the extent that such costs are
7 even accounted for by investors.

8 **Q. Should the Commission increase KAW's ROE in consideration of its capital**
9 **expenditure program?**

10 A. No. It is up to the Company to prudently manage its expenditures and the timing
11 of its rate cases to ensure that it collects its prudent costs of providing service to its
12 ratepayers while maintaining a competitive return on its investments. Although
13 KAW does indeed have a significant projected capital expenditure program,
14 KAW's use of a future test year and its Qualified Infrastructure Program ("QIP")
15 both help mitigate the risk of the program.

16 **Q. Do you agree that the risks associated with environmental and water quality**
17 **regulations increase KAW's risk compared to the proxy group?**

18 A. I do not believe these additional risks significantly affect KAW's risk compared to
19 the proxy group and is not a basis for the Commission to give the Company a higher
20 return. Ms. Bulkley pointed out on page 52 of her Direct Testimony that these risks
21 affect the water utilities in the proxy group, but not the gas and electric companies
22 that were included. The fact is that KAW and American Water Works operate
23 regulated water operations that have low business risk. This was pointed out in the

1 AWW Investors Presentation I referenced in Section II of my Direct Testimony.
2 Further, AWW currently maintains strong and stable investment grade credit
3 ratings of A/Baa1, from which KAW benefits as a subsidiary.

4 **Q. On page 55 of her Direct Testimony, Ms. Bulkley testified that KAW does not**
5 **have protection against volumetric risk, which she then compared to the proxy**
6 **group in which 59.93% of operating companies had some form of protection**
7 **against volumetric risk. Does the absence of a “volumetric protection”**
8 **mechanism mean that the Commission should consider increasing the ROE**
9 **for KAW compared to the proxy group?**

10 A. No. KAW did not request revenue decoupling or other forms of so-called
11 volumetric protection in this case. It is inappropriate for KAW to seek a higher
12 ROE than the midpoint of the proxy group range due to a factor that the Company
13 did not otherwise mention or request in this case.

14 **Q. On page 56 of her Direct Testimony, Ms. Bulkley noted that Regulatory**
15 **Research Associates (“RRA”) recently lowered its regulatory ranking of**
16 **Kentucky from Average/1 to Average/2. Should the Commission grant a**
17 **higher ROE to KAW due to RRA’s opinion of Kentucky’s regulatory**
18 **environment?**

19 A. No, definitely not. Kentucky’s RRA ranking is still average. Ms. Bulkley provided
20 no basis or analysis in her testimony that a one notch lowering of Kentucky’s RRA
21 ranking should have any impact on KAW’s ROE.

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

23 A. Yes.

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

In the Matter of:

**ELECTRONIC APPLICATION OF KENTUCKY-)
AMERICAN WATER COMPANY FOR AN)
ADJUSTMENT OF RATES, A CERTIFICATE OF)
PUBLIC CONVENIENCE AND NECESSITY FOR)
INSTALLATION OF ADVANCED METERING)
INFRASTRUCTURE, APPROVAL OF CERTAIN)
REGULATORY AND ACCOUNTING)
TREATMENTS, AND TARIFF REVISIONS)**

CASE NO. 2023-00191

**EXHIBITS
OF
RICHARD A. BAUDINO**

ON BEHALF OF

**OFFICE OF THE ATTORNEY GENERAL OF THE
COMMONWEALTH OF KENTUCKY**

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

September 29, 2023

RESUME OF RICHARD A. BAUDINO

EDUCATION

New Mexico State University, M.A.

Major in Economics
Minor in Statistics

New Mexico State University, B.A.

Economics
English

Thirty-nine 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

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

**Expert Testimony Appearances
of
Richard A. Baudino
As of September 2023**

Date	Case	Jurisdict.	Party	Utility	Subject
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	Jomada 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 September 2023**

Date	Case	Jurisdct.	Party	Utility	Subject
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 September 2023**

Date	Case	Jurisdict.	Party	Utility	Subject
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
of
Richard A. Baudino
As of September 2023**

Date	Case	Jurisdict.	Party	Utility	Subject
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 September 2023**

Date	Case	Jurisdict.	Party	Utility	Subject
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. Intervenors	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	SWEPSCO, 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 Intervenors	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 September 2023**

Date	Case	Jurisdiction	Party	Utility	Subject
10/99	R-00994782	PA	Peoples Industrial Intervenor	Peoples Natural Gas Co.	Restructuring issues.
10/99	R-00994781	PA	Columbia Industrial Intervenor	Columbia Gas of Pennsylvania	Restructuring, balancing charges, rate flexing, alternate fuel.
01/00	R-00994786	PA	UGI Industrial Intervenor	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.

**Expert Testimony Appearances
of
Richard A. Baudino
As of September 2023**

Date	Case	Jurisdict.	Party	Utility	Subject
04/01	R-00006042	PA	Philadelphia Industrial and Commercial Gas Users Group	Philadelphia Gas Works	Revenue requirements, cost allocation and tariff issues.
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 Health Care 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 September 2023**

Date	Case	Jurisdict.	Party	Utility	Subject
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

**Expert Testimony Appearances
of
Richard A. Baudino
As of September 2023**

Date	Case	Jurisdict.	Party	Utility	Subject
07/08	R-2008-2028394	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy	Cost and revenue allocation, Tariff issues
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

**Expert Testimony Appearances
of
Richard A. Baudino
As of September 2023**

Date	Case	Jurisdct.	Party	Utility	Subject
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
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

**Expert Testimony Appearances
of
Richard A. Baudino
As of September 2023**

Date	Case	Jurisdict.	Party	Utility	Subject
04/11	R-2010-2214415	PA	Central Pen 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
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

**Expert Testimony Appearances
of
Richard A. Baudino
As of September 2023**

Date	Case	Jurisdict.	Party	Utility	Subject
08/13	9326	MD	Maryland Energy Group	Baltimore Gas and Electric	Cost and revenue allocation, rate design, special rider
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.

**Expert Testimony Appearances
of
Richard A. Baudino
As of September 2023**

Date	Case	Jurisdiction	Party	Utility	Subject
12/15	45188	TX	Steering Committee of Cities Served by Oncor	Oncor Electric Delivery Co.	Ring-fence protections for cost of capital
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

**Expert Testimony Appearances
of
Richard A. Baudino
As of September 2023**

Date	Case	Jurisdict.	Party	Utility	Subject
03/17	R-3867-2013	Quebec, Canada	Canadian Federation of Independent Businesses	Gaz Metro	Marginal Cost of Service Study
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

**Expert Testimony Appearances
of
Richard A. Baudino
As of September 2023**

Date	Case	Jurisdct.	Party	Utility	Subject
05/19	19-E-0065 19-G-0066	NY	City of New York	Consolidated Edison Co.	Cost and revenue allocation, rate design, tariff issues, fast-charging station incentives
05/2019	19-0513-TF	VT	Vt. Dept. of Public Service	Vermont Gas Systems	Return on equity, capital structure
06/2019	5-TG-100	WI	Wisconsin Industrial Energy Group	WEPCO, Wisconsin Gas, Wisconsin PS	Transportation and balancing issues
07/2019	49494	TX	Cities Served by AEP Texas	AEP Texas, Inc.	Return on equity, capital structure
08/2019	19-G-0309 19-G-0310	NY	City of New York	Brooklyn Union Gas Co., KeySpan Gas East Corp.	Cost and revenue allocation, rate design, tariff issues and modifications
08/2019	19-0316-G-42T	WV	West Virginia Energy Users Gp.	Mountaineer Gas Company	Cost and revenue allocation
8/2019	5-UR-109	WI	Wisconsin Industrial Energy Gp.	Wisconsin Electric Power Co., Wisconsin Gas, LLC	Cost Allocation, Class cost of service study
8/2019	6690-UR-126	WI	Wisconsin Industrial Energy Gp.	Wisconsin Public Service Corp.	Cost Allocation, Class cost of service study
9/2019	9610	MD	Maryland Energy Group	Baltimore Gas and Electric Co.	Cost and revenue allocation, rate design
12/2019	2019-00271	KY	Office of the Attorney General	Duke Energy Kentucky, Inc.	Return on equity
2/2020	49831	TX	Texas Industrial Energy Consumers	Southwestern Public Service Co.	Return on equity, capital structure, rate of return
2/2020	E-7. Sub 1214	NC	NC Attorney General's Office	Duke Energy Carolinas	Return on equity, capital structure, rate of return, economic conditions
2/2020	E-2. Sub 1219	NC	NC Attorney General's Office	Duke Energy Progress	Return on equity, capital structure, rate of return, economic conditions
5/2020	R-2019-3015162	PA	Industrial Energy Consumers of Pennsylvania	UGI Utilities, Inc.	Return on equity, cost of debt, revenue allocation, rate design
6/2020	20-G-0101	NY	Multiple Intervenors	Corning Natural Gas Corp.	Cost and revenue allocation
9/2020	R-2020-2019369	PA	AK Steel	Pennsylvania-American Water Company	Cost and revenue allocation, rate design
9/2020	20-035-04	UT	The Kroger Co.	Rocky Mountain Power	Cost and revenue allocation, rate design
10/2020	2020-00174	KY	Ky. Office of the Attorney General, Ky. Industrial Utility Customers	Kentucky Power Co.	Return on equity
3/2021	2020-00349	KY	Ky. Office of the Attorney General, Ky. Industrial Utility Customers	Kentucky Utilities Co.	Return on equity

**Expert Testimony Appearances
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Richard A. Baudino
As of September 2023**

Date	Case	Jurisdiction	Party	Utility	Subject
3/2021	2020-00350	KY	Ky. Office of the Attorney General, Ky. Industrial Utility Customers	Louisville Gas and Electric Co.	Return on equity
3/2021	20-0746-G-42T	WV	West Va. Energy Users Group	Dominion Energy West Va.	Cost and revenue allocation, cost of equity
4/2021	17-12-03RE11	CT	Connecticut Industrial Energy Consumers	PURA Investigation Into Distribution System Planning	Economic development rates
6/2021	U-20940	MI	Dearborn Industrial Generation, LLC	DTE Gas Company	Cost and revenue allocation, rate design
7/2021	21-0043-G-PC	WV	West Va. Energy Users Group	Mountaineer Gas Co., UGI Corporation	Hold harmless conditions for utility acquisition
07/2021	U-35441	LA	Louisiana Public Service Commission	Southwestern Electric Power Company	Return on equity, cost of capital, service quality
08/2021	51802	TX	Texas Industrial Energy Consumers	Southwestern Public Service Company	Return on equity
09/21	2021-00190	KY	Kentucky Office of the Attorney General	Duke Energy Kentucky, Inc.	Return on equity, cost of debt
09/21	2021-00183	KY	Kentucky Office of the Attorney General	Columbia Gas of Kentucky, Inc.	Return on equity, cost of debt, capital structure
09/21	21-0369-W-42T	WV	West Va. Energy Users Group	West Virginia-American Water Company	Revenue stabilization mechanism
09/21	2021-00185	KY	Kentucky Office of the Attorney General	Delta Natural Gas Company, Inc.	Return on equity, cost of debt, capital structure
09/21	2021-00214	KY	Kentucky Office of the Attorney General	Atmos Energy Corporation	Return on equity, common equity ratio
11/21	R-2021-3027385, R-2021-3027386	PA	Aqua Large Users Group	Aqua Pennsylvania, Inc.	Cost and revenue allocation, Rate design
11/21	21-G-0394	NY	Multiple Intervenors	Corning Natural Gas Corp.	Cost and revenue allocation
06/22	21-G-0577	NY	Multiple Intervenors	Liberty Utilities (St. Lawrence Gas) Corp.	Cost of revenue allocation, rate design
07/22	2022-89-G	SC	South Carolina Office of Regulatory Staff	Piedmont Natural Gas Co.	Return on equity, capital structure cost of capital
07/22	R-2022-3031672, R-2022-3031673	PA	Cleveland-Cliffs Steel	Pennsylvania American Water Company	Cost and revenue allocation, rate design

**Expert Testimony Appearances
of
Richard A. Baudino
As of September 2023**

Date	Case	Jurisdict.	Party	Utility	Subject
10/22	2022-00147	KY	Kentucky Office of the Attorney General and the City of Clinton	Water Service Corporation of Kentucky	Cost of equity
12/22	2022-254-E	SC	South Carolina Office of Regulatory Staff	Duke Energy Progress	Cost of equity
12/22	22-08-08	CT	Connecticut Industrial Energy Consumers	United Illuminating Co.	Cost and revenue allocation, rate design, economic development rates
03/23	2022-00372	KY	Kentucky Office of the Attorney General	Duke Energy Kentucky, Inc.	Cost of equity, capital structure, weighted cost of capital
08/23	23-0280-G-42-T	WV	West Va. Energy Users Group	Mountaineer Gas Co.	Cost and revenue allocation, Rate design
09/23	6680-UR-124	WI	Wisconsin Industrial Energy Group	Wisconsin Power and Light Co.	Cost and revenue allocation, rate design
09/23	6690-UR-127	WI	Wisconsin Industrial Energy Group	Wisconsin Public Service Corp.	Revenue allocation, rate design
09/23	5-UR-110	WI	Wisconsin Industrial Energy Group	Wisconsin Electric Power Co.	Cost and revenue allocation, rate design
09/23	2023-00191	KY	Kentucky Office of the Attorney General	Kentucky-American Water Co.	Return on equity, capital structure, and weighted cost of capital



Investor Presentation

August 2023



Strong Balance Sheet and Credit Ratings

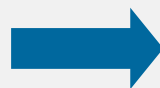
AWK Long-Term Senior Unsecured Ratings



S&P Global
A
(Stable Outlook)

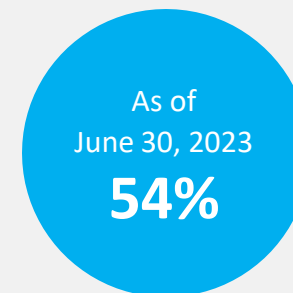
Moody's
Baa1
(Stable Outlook)

Ratings and Stable Outlook affirmed at S&P / Moody's (Feb. '23/Dec. '22)



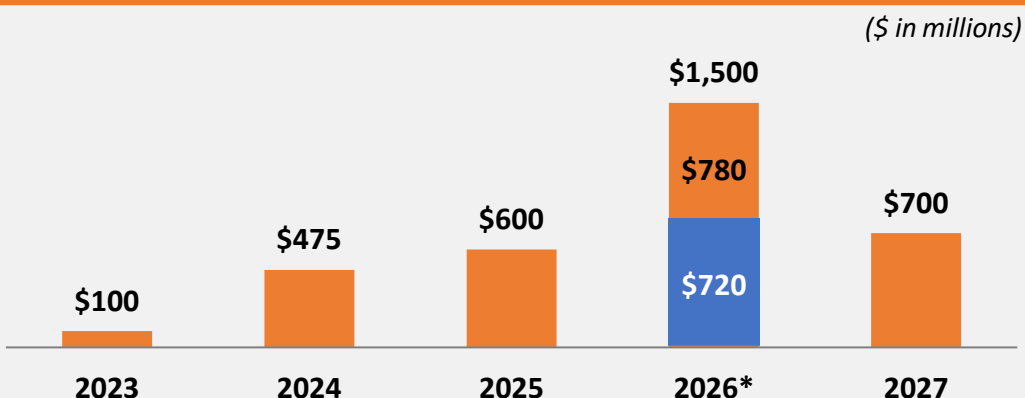
- ✓ Low risk business profile
- ✓ Strong regulatory jurisdictions
- ✓ Supportive financial plans

Total Debt to Total Capital**



Consolidated Debt Maturity Profile

as of June 30, 2023 (Rounded)



Liquidity Profile

(\$ in millions, rounded)

Available Liquidity as of 6/30/23

\$3,469

\$794

\$2,675

- Cash
- Credit

Credit Facility Amended on 10/26/22

- ✓ Increased Credit Facility capacity by \$500 million to \$2.75 billion from \$2.25 billion
- ✓ Extended maturity to October 2027
- ✓ Increased capacity to support growing business and capital investment plan

*Proceeds of \$720 million from the note related to the sale of HOS are due to the Company in December 2026

** Percentage shown is net of cash and cash equivalents of \$794 million



Regulatory Information – Top 10 States

	CALIFORNIA	ILLINOIS	INDIANA	KENTUCKY	MISSOURI
Authorized Rate Base*	\$667,632 ^(g)	\$1,642,200	\$1,182,170	\$443,654	\$2,318,849 ^(c)
ROE	9.50% ^(a)	9.78%	9.80%	9.70%	9.75% ^(d)
Equity	57.04% ^(a)	49.00%	53.41% ^(b)	48.90%	50.00% ^(e)
Effective Date of Rate Case	1/1/2021 ^(g)	1/1/2023	5/1/2020	6/28/2019	5/28/2023

	NEW JERSEY	PENNSYLVANIA	TENNESSEE	VIRGINIA	WEST VIRGINIA
Authorized Rate Base*	\$4,146,492	\$5,141,180 ^(c)	\$132,015	\$275,038 ^(c)	\$734,028
ROE	9.60%	10.00% ^(d)	10.00%	9.70%	9.80%
Equity	54.56%	55.20% ^(e)	34.38%	40.73%	47.97%
Effective Date of Rate Case	9/1/2022	1/28/2023	11/1/2012	4/24/2023 ^(f)	2/25/2022

*Rate Base stated in \$000s

- a) On June 29, 2023, Decision 23-06-025 set the authorized cost of capital through 2024. CA has a separate Cost of Capital case which sets the rate of return outside of a general rate proceeding. The decision established an ROE of 8.98% effective 30-days after the decision date. On June 30, 2023, the Company filed to implement an automatic ROE adjustment to 9.50% for 2023 based on the Commission approved Water Cost of Capital Adjustment Mechanism (WCCM), which was approved on July 25, 2023, increasing the return on equity to 9.50%, effective July 31, 2023.
- b) The Authorized Equity excludes cost-free items or tax credit balances at the overall rate of return which lowers the equity percentage as an alternative to the common practice of deducting such items from rate base.
- c) The Authorized Rate Base listed is the Company's view of the Rate Base allowed in the case; the Rate Base was not disclosed in the Order or the applicable settlement agreement.
- d) The ROE is the Company's view of the ROE allowed in the case; however, the ROE was not disclosed in the Order or the applicable settlement agreement.
- e) The equity ratio listed is the Company's view of the equity ratio allowed in the case; the actual equity ratio was not disclosed in the Order or the applicable settlement agreement.
- f) Interim rates were effective May 1, 2022 and received final Order April 24, 2023.
- g) The Rate Base and Effective date are based off of Year 1 of the rate case. Annual adjustments are made for Year 2 and 3 which reflect authorized capital improvements for Rate Base and inflationary adjustments for O&M.

PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23
Atmos Energy Corp.	High Price (\$)	116.330	117.840	119.720	118.780	125.280	122.840
	Low Price (\$)	105.780	110.470	111.100	110.790	115.830	114.520
	Avg. Price (\$)	111.055	114.155	115.410	114.785	120.555	118.680
	Dividend (\$)	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400
	Mo. Avg. Div.	2.67%	2.59%	2.56%	2.58%	2.46%	2.49%
	6 mos. Avg.	2.56%					
NiSource Inc.	High Price (\$)	28.260	28.950	28.950	27.690	28.660	28.040
	Low Price (\$)	25.920	27.580	26.450	26.420	27.000	26.070
	Avg. Price (\$)	27.090	28.265	27.700	27.055	27.830	27.055
	Dividend (\$)	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500
	Mo. Avg. Div.	3.69%	3.54%	3.61%	3.70%	3.59%	3.70%
	6 mos. Avg.	3.64%					
Northwest Natural Gas Co.	High Price (\$)	48.660	49.090	48.370	44.400	44.900	43.280
	Low Price (\$)	44.740	46.400	42.230	41.750	41.640	39.220
	Avg. Price (\$)	46.700	47.745	45.300	43.075	43.270	41.250
	Dividend (\$)	0.485	0.485	0.485	0.485	0.485	0.485
	Mo. Avg. Div.	4.15%	4.06%	4.28%	4.50%	4.48%	4.70%
	6 mos. Avg.	4.37%					
ONE Gas, Inc.	High Price (\$)	81.140	83.350	82.560	83.890	81.920	82.060
	Low Price (\$)	73.460	76.700	76.880	75.880	72.840	72.390
	Avg. Price (\$)	77.300	80.025	79.720	79.885	77.380	77.225
	Dividend (\$)	0.650	0.650	0.650	0.650	0.650	0.650
	Mo. Avg. Div.	3.36%	3.25%	3.26%	3.25%	3.36%	3.37%
	6 mos. Avg.	3.31%					
Spire, Inc.	High Price (\$)	71.820	72.070	69.990	68.040	65.940	63.820
	Low Price (\$)	65.600	67.100	64.110	62.270	61.780	58.000
	Avg. Price (\$)	68.710	69.585	67.050	65.155	63.860	60.910
	Dividend (\$)	0.720	0.720	0.720	0.720	0.720	0.720
	Mo. Avg. Div.	4.19%	4.14%	4.30%	4.42%	4.51%	4.73%
	6 mos. Avg.	4.38%					
Eversource Energy	High Price (\$)	78.480	81.360	78.640	72.340	74.810	72.330
	Low Price (\$)	72.460	76.720	67.790	68.050	69.700	63.300
	Avg. Price (\$)	75.470	79.040	73.215	70.195	72.255	67.815
	Dividend (\$)	0.675	0.675	0.675	0.675	0.675	0.675
	Mo. Avg. Div.	3.58%	3.42%	3.69%	3.85%	3.74%	3.98%
	6 mos. Avg.	3.71%					

PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23
American States Water Co.	High Price (\$)	89.010	95.080	92.690	92.850	89.930	89.730
	Low Price (\$)	82.510	87.630	86.580	84.260	83.240	84.100
	Avg. Price (\$)	85.760	91.355	89.635	88.555	86.585	86.915
	Dividend (\$)	0.3975	0.3975	0.3975	0.3975	0.3975	0.4300
	Mo. Avg. Div.	1.85%	1.74%	1.77%	1.80%	1.84%	1.98%
	6 mos. Avg.	1.83%					
California Water Service Gp.	High Price (\$)	58.500	61.590	57.550	58.300	53.790	53.380
	Low Price (\$)	54.100	55.300	54.260	49.630	49.000	50.250
	Avg. Price (\$)	56.300	58.445	55.905	53.965	51.395	51.815
	Dividend (\$)	0.260	0.260	0.260	0.260	0.260	0.260
	Mo. Avg. Div.	1.85%	1.78%	1.86%	1.93%	2.02%	2.01%
	6 mos. Avg.	1.91%					
Middlesex Water Company	High Price (\$)	78.390	82.350	81.540	84.380	84.350	81.780
	Low Price (\$)	72.640	72.570	66.510	77.990	77.250	75.060
	Avg. Price (\$)	75.515	77.460	74.025	81.185	80.800	78.420
	Dividend (\$)	0.3125	0.3125	0.3125	0.3125	0.3125	0.3125
	Mo. Avg. Div.	1.66%	1.61%	1.69%	1.54%	1.55%	1.59%
	6 mos. Avg.	1.61%					
SJW Group	High Price (\$)	77.860	81.860	78.420	76.870	73.140	70.820
	Low Price (\$)	71.420	74.990	73.970	68.230	65.870	65.290
	Avg. Price (\$)	74.640	78.425	76.195	72.550	69.505	68.055
	Dividend (\$)	0.380	0.380	0.380	0.380	0.380	0.380
	Mo. Avg. Div.	2.04%	1.94%	1.99%	2.10%	2.19%	2.23%
	6 mos. Avg.	2.08%					
Essential Utilities, Inc.	High Price (\$)	43.650	45.290	43.740	42.130	43.260	42.580
	Low Price (\$)	40.310	42.470	39.730	39.170	38.920	36.360
	Avg. Price (\$)	41.980	43.880	41.735	40.650	41.090	39.470
	Dividend (\$)	0.287	0.287	0.287	0.287	0.287	0.307
	Mo. Avg. Div.	2.73%	2.62%	2.75%	2.82%	2.79%	3.11%
	6 mos. Avg.	2.81%					
Monthly Avg. Dividend Yield		2.89%	2.79%	2.89%	2.95%	2.96%	3.08%
6-month Avg. Dividend Yield		2.93%					
3-Month Avg. Dividend Yield		3.00%					

Source: finance.yahoo.com

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>
1 Atmos Energy Corp.	7.50%	7.00%	7.30%	7.50%
2 NiSource Inc.	4.50%	9.50%	7.00%	6.70%
3 Northwest Natural Gas Co.	0.50%	6.50%	3.70%	2.80%
4 ONE Gas, Inc.	5.50%	6.50%	5.00%	5.00%
5 Spire, Inc.	5.00%	8.00%	4.20%	4.20%
6 Eversource Energy	6.50%	6.50%	5.70%	6.70%
7 American States Water Co.	8.50%	6.50%	6.30%	4.40%
8 California Water Service Gp.	6.50%	6.50%	10.80%	10.80%
9 Middlesex Water Company	6.50%	5.00%	2.70%	2.70%
10 SJW Group	5.00%	6.50%	6.10%	6.10%
11 Essential Utilities, Inc.	<u>8.00%</u>	<u>7.50%</u>	<u>5.60%</u>	<u>5.40%</u>
Averages	5.82%	6.91%	5.85%	5.66%
Median	6.50%	6.50%	5.70%	5.40%

Sources: Value Line Investment Survey, July 7, August 11, and August 25, 2023
Yahoo! Finance and Zacks growth rates retrieved August 25, 2023

Note: Yahoo! growth rates were used for unavailable Zacks growth rates for California Water Service, Middlesex Water Co., and SJW Group. Zacks growth rate used for unavailable Yahoo! Spire growth rate.

PROXY GROUP DCF RETURN ON EQUITY					
	(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>
Method 1:					
Dividend Yield	2.93%	2.93%	2.93%	2.93%	2.93%
Proxy Group Average Growth Rate	5.82%	6.91%	5.85%	5.66%	6.06%
Expected Dividend Yield	<u>3.01%</u>	<u>3.03%</u>	<u>3.01%</u>	<u>3.01%</u>	<u>3.01%</u>
DCF Return on Equity	8.83%	9.94%	8.86%	8.67%	9.07%
Method 2:					
Dividend Yield	2.93%	2.93%	2.93%	2.93%	2.93%
Proxy Group Median Growth Rate	6.50%	6.50%	5.70%	5.40%	6.03%
Expected Dividend Yield	<u>3.02%</u>	<u>3.02%</u>	<u>3.01%</u>	<u>3.01%</u>	<u>3.01%</u>
DCF Return on Equity	9.52%	9.52%	8.71%	8.41%	9.04%

**PROXY GROUP
Capital Asset Pricing Model Analysis**

Value Line Forward-Looking MRP

<u>Line No.</u>		<u>Value Line</u>
1	Market Required Return Estimate	14.77%
2	Risk-free Rate of Return, 30-Year Treasury Bond	4.30%
3	Risk Premium	
4	(Line 1 minus Line 2)	10.47%
5	Proxy Group Beta	0.81
6	Proxy Group Beta * Risk Premium	
7	(Line 4 * Line 5)	8.47%
8	CAPM Return on Equity	
9	(Line 2 plus Line 7)	12.77%

Supporting Data for CAPM Analyses

<u>30 Year Treasury Bond Data</u>	<u>Proxy Group Betas:</u>	<u>Value Line</u>
	<u>Avg. Yield</u>	
Mar-23	3.77%	0.85
Apr-23	3.68%	0.90
May-23	3.86%	0.80
Jun-23	3.87%	0.80
Jul-23	3.87%	0.85
Aug-23	<u>4.28%</u>	0.85
6 month average	3.90%	0.90
Source: Federal Reserve data		0.65
	Atmos Energy Corp.	0.70
	NiSource Inc.	0.70
	Northwest Natural Gas Co.	0.80
	ONE Gas, Inc.	0.80
	Spire, Inc.	0.80
	Eversource Energy	0.80
	American States Water Co.	0.80
	California Water Service Gp.	0.80
	Middlesex Water Company	0.80
	SJW Group	0.80
	Essential Utilities, Inc.	0.95
		0.81
<u>Value Line Projected Return Data:</u>		
Median Esimtated Div. Yield	2.30%	0.81
	Source: Value Line Investment Survey	
3 - 5 Year Price Appreciation	60.00%	
Estimated Annualized Price Appreciation	12.47%	
Est. Annual Total Return	14.77%	

Source: Value Line Summary and Index,
September 1, 2023

PROXY GROUP
Capital Asset Pricing Model Analysis
Historic Market Premium

	Arithmetic Mean	Supply Side ERP	Supply Side Less WWII Bias
Long-Term Annual Return on Stocks	12.00%		
Long-Term Annual Income Return on Long-Term Treas. Bonds	<u>4.90%</u>		
Historical Market Risk Premium	7.10%	6.35%	5.37%
Proxy Group Beta, Value Line	<u>0.81</u>	<u>0.81</u>	<u>0.81</u>
Beta * Market Premium	5.74%	5.14%	4.34%
Risk-free Rate of Return	<u>4.30%</u>	<u>4.30%</u>	<u>4.30%</u>
CAPM Cost of Equity, Value Line Beta	<u>10.04%</u>	<u>9.44%</u>	<u>8.64%</u>

Source: Kroll Cost of Capital Navigator: U.S. Cost of Capital Module:
*Summary Statistics of Annual Total Returns, Income Returns, and
Capital Appreciation Returns of Basic U.S. Asset Classes;*

*Basic Building Blocks of the Cost of Equity Capital - Risk Free Rate and Equity Risk
Premium (Abridged)*

PROXY GROUP
Capital Asset Pricing Model Analysis
Kroll and Damodaran MRPs

	<u>Kroll</u>	<u>Damodaran</u>
Market Risk Premium	5.50%	4.82%
Gas Proxy Group Beta	0.81	0.81
Beta times MRP	4.45%	3.90%
Risk-free Rate of Return	<u>4.30%</u>	<u>4.30%</u>
CAPM Cost of Equity	8.75%	8.20%

AFFIDAVIT

STATE OF GEORGIA)

COUNTY OF FULTON)

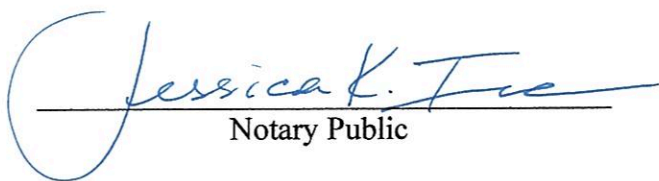
RICHARD A. BAUDINO, being duly sworn, deposes and states: that the attached is his sworn testimony and that the statements contained are true and correct to the best of his knowledge, information and belief.



Richard A. Baudino

Sworn to and subscribed before me on this

29th day of September, 2023.



Notary Public

Jessica K Inman
NOTARY PUBLIC
Cherokee County, GEORGIA
My Commission Expires 07/31/2027