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OCC EXHIBIT _____

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of Aqua)
Ohio, Inc. for Authority to Increase Its) Case No. 09-1044-WW-AIR
Rates and Charges in Its Lake Erie)
Division.)

**DIRECT TESTIMONY
OF
DANIEL J. DUANN, Ph.D.**

**On Behalf of
The Office of the Ohio Consumers' Counsel
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June 21, 2010

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ATTACHMENTS

- DJD-A SELECTED PUBLICATIONS OF DANIEL J. DUANN, Ph.D.
- DJD-B AQUA OHIO'S RESPONSE TO OCC INTERROGATORY NO. 25.

1 **I. INTRODUCTION**

2

3 ***Q1. PLEASE STATE YOUR NAME, ADDRESS AND POSITION.***

4 ***A1.*** My name is Daniel J. Duann. My business address is 10 West Broad Street, Suite
5 1800, Columbus, Ohio, 43215-3485. I am a Senior Regulatory Analyst with the
6 Office of the Ohio Consumers' Counsel ("OCC").

7

8 ***Q2. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND***
9 ***PROFESSIONAL EXPERIENCE.***

10 ***A2.*** I received my Ph.D. degree in public policy analysis from the Wharton School,
11 University of Pennsylvania. I also have a M.S. degree in energy management and
12 policy from the University of Pennsylvania and a M.A. degree in economics from
13 the University of Kansas. I completed my undergraduate study in business
14 administration at the National Taiwan University, Taiwan, Republic of China.

15

16 I was a utility examiner II with the Forecasting Section of the Ohio Division of
17 Energy ("ODOE"), Ohio Department of Development, from 1983 to 1985. From
18 1985 to 1986, I was an economist with the Center of Health Policy Research at
19 the American Medical Association in Chicago. At the end of 1986, I joined the
20 Illinois Commerce Commission ("ICC") as a senior economist in its Policy
21 Analysis and Research Division.

*Direct Testimony of Daniel J. Duann, Ph.D.
On Behalf of the Office of the Ohio Consumers' Counsel
PUCO Case No. 09-1044-WW-AIR*

1 I started working as a senior institute economist at the National Regulatory
2 Research Institute ("NRRI") at the Ohio State University in August 1987. At
3 NRRI, I worked in many areas of utility regulation and energy policy, including
4 competitive bidding for electricity, least-cost energy planning, unbundling and
5 deregulation of gas distribution service, incentive regulation in fuel procurement,
6 and regulatory initiatives in promoting natural gas vehicle and gas storage.

7
8 I was an independent business consultant from 1996 to 2007. I joined the OCC in
9 January 2008 as a Senior Regulatory Analyst. My current responsibilities are to
10 assist OCC's participation in regulatory proceedings involving rate cases and cost
11 recovery filings by electric, gas and water utilities. Regarding the subject of rate
12 of return regulation, I have testified in two water rate cases, have reviewed the
13 testimonies, and have assisted in the cross examinations of witnesses in several
14 rate cases and ESP (Electric Security Plan) proceedings.¹ I am also the lead
15 analyst on the OCC team participating in the SEET (Significantly Excessive
16 Earnings Test) Workshop and have prepared, coordinated and reviewed
17 comments filed by other parties.² Altogether, I have over fifteen years of
18 experience in utility regulation and energy policy. A list of my professional
19 publications is attached as Attachment DJD-A.

¹ PUCO Case Nos. 07-551-EL-AIR, 07-829-GA-AIR, 07-1112-WS-AIR, 08-72-GA-AIR, 08-227-WS-AIR, 08-917-EL-SSO, 08-1094-EL-SSO, 09-391-WS-AIR, and 09-560-WW-AIR.

² PUCO Case No. 09-786-EL-UNC.

1 **Q3. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY BEFORE THE**
2 **PUBLIC UTILITIES COMMISSION OF OHIO?**

3 **A3.** Yes. I have submitted testimonies before the Public Utilities Commission of Ohio
4 ("PUCO" or "Commission") in recent electric and water rate cases. They include
5 the following: *In the Matter of Application of The Dayton Power and Light*
6 *Company for Approval of Its Electric Security Plan*, Case No. 08-1094-EL-SSO,
7 *In the Matter of the Application of Ohio American Water Company to Increase Its*
8 *Rates for Water and Sewer Service Provided to Its Entire Service Area*, Case No.
9 09-391-WS-AIR, and *In the Matter of the Application of Aqua Ohio, Inc. for*
10 *Authority to Increase its Rates and Charges in its Masury Division*, Case No. 09-
11 560-WW-AIR.

12
13 **Q4. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY BEFORE OTHER**
14 **ADMINISTRATIVE, REGULATORY, OR LEGISLATIVE AGENCIES?**

15 **A4.** Yes. I submitted testimony before the Ohio Division of Energy on behalf of the
16 ODOE Staff regarding the Long-Term Forecast Reports of the Cleveland Electric
17 Illuminating Company (Case No. CEI-83-E) and The Toledo Edison Company
18 (Case No. TEC-84-E) in 1984 and 1985. I also testified before the Illinois
19 Commerce Commission in 1987 on behalf of the ICC Staff regarding the
20 divestiture of three nuclear power plants by the Commonwealth Edison Company
21 and related matters (Case Nos. 87-0043, 87-0044, 87-0057, 87-0096). In 1989, I
22 testified as an expert analyst before the California Legislature, Senate Committee
23 on Energy and Public Utilities regarding pending legislation (California SB 769)

1 that would have prohibited an electric utility from purchasing electricity from a
2 private energy producer fully or partially owned by a subsidiary or affiliate of the
3 utility.

4
5 ***Q5. WHAT DOCUMENTS HAVE YOU REVIEWED IN THE PREPARATION OF***
6 ***YOUR TESTIMONY?***

7 ***A5.*** I have reviewed Aqua Ohio, Inc.'s ("the Company" or "Aqua Ohio") Application
8 for Authority to Increase Its Rates and Charges in Its Lake Erie Division
9 ("Application") and related supporting testimonies. I also reviewed *A report by*
10 *the Staff of the Public Utilities Commission of Ohio* ("Staff Report") in this
11 proceeding and related Commission opinions and orders.³ In addition, I have
12 reviewed relevant Aqua Ohio responses to the Interrogatories and Data Requests
13 and Requests for Production of Documents sent by the OCC, the PUCO Staff, and
14 other parties to the Company. I have also reviewed the financial information in
15 trade and general publications related to Aqua Ohio, the group of comparable
16 water utilities, and other companies used in my analysis.

³ The Application was filed on December 11, 2009, supporting testimonies were filed on December 21, 2009, and the Staff Report was filed on May 21, 2010.

II. PURPOSE OF TESTIMONY

Q6. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A6. My testimony focuses on the determination of a just and reasonable cost rate of common equity (or return on equity, "ROE") and an overall cost of capital (or rate of return, "ROR") for Aqua Ohio related to this proceeding. I conclude that the Company's requested ROE of 10.85% and an overall ROR of 8.63% are unreasonable and unfair to its customers. The Company has provided no support for its proposed cost rate of common equity except indicating that the 10.85% return on equity was selected based on the knowledge of Aqua Ohio's Regional Controller about recent requests made by similarly situated water utilities. See Attachment DJD-B. I also discuss concerns I have regarding the cost of common equity and the rate of return recommended in the Staff Report. The PUCO Staff's proposed rate of return in the range of 7.62% to 8.14% and cost of common equity in the range of 8.89% to 9.90% are also too high.

III. OCC'S RECOMMENDATIONS FOR A JUST AND REASONABLE RATE OF RETURN.

Q7. WHAT ARE YOUR RECOMMENDATIONS?

A7. Based on my analysis of the financial condition of the Company, the cost of equity for comparable water utilities, and the effects of the recession on the utility companies in the last three years, I recommend that the Commission approve a

1 return on equity of 8.31% and an overall rate of return of 7.32% for Aqua Ohio in
2 this proceeding.

3
4 **Q8. PLEASE SUMMARIZE YOUR METHODOLOGY REGARDING THE**
5 **ESTIMATION OF AQUA OHIO'S COST OF COMMON EQUITY AND**
6 **COST OF CAPITAL.**

7 **A8.** I accepted the Company's proposed capital structure and cost rate of long-term
8 debt of 6.27%. To estimate Aqua Ohio's cost of common equity, I applied two
9 commonly-used financial models, the Capital Asset Pricing Model (CAPM) and
10 the Discounted Cash Flow Model (DCF). The average of the ROEs derived from
11 the two financial models is 8.31%. Based on Aqua Ohio's stand-alone capital
12 structure and the cost rates of its two capital components, I calculated the overall
13 cost of capital (or rate of return) to be 7.32%. A summary of the capital structure,
14 cost rates, and the overall cost of capital proposed by OCC, the PUCO Staff, and
15 Aqua Ohio is shown in Table 1.

**TABLE 1: A SUMMARY OF THE PROPOSED CAPITAL STRUCTURE,
COST RATES, AND OVERALL COST OF CAPITAL**

	<u>% of Total</u>	<u>Costs (%)</u>			<u>Weighted Cost (%)</u>		
		OCC	Staff*	Aqua Ohio**	OCC	Staff	Aqua Ohio
Long Term Debt	48.57%	6.27%	6.27%	6.27%	3.05%	3.04%	3.05%
Common Equity	51.43%	8.31%	8.89% - 9.90%	10.85%	4.27%	4.57% - 5.09%	5.58%
Total Capital	100.00%				7.32%	7.62% - 8.14%	8.63%

*: See Staff Report at 14-16.

**: See Application at Schedule D-1.

**Q9. PLEASE EXPLAIN THE CAPITAL STRUCTURE AND THE COST RATE
OF LONG-TERM DEBT USED IN YOUR ANALYSIS.**

A9. I used the stand-alone capital structure of Aqua Ohio rather than its parent company's (Aqua America, Inc.) consolidated capital structure. It is my opinion that this stand-alone capital structure of 48.57% long-term debt and 51.43% common equity adequately reflects the sources and costs of long-term financing for the capital projects and operations of Aqua Ohio in providing services in its Lake Erie Division.⁴ Regarding the cost of long-term debt, I accepted the cost rate of 6.27% proposed by the Company.⁵ The use of the embedded cost of long-

⁴ The stand-alone capital structure can be found in the direct testimony of Aqua Ohio's witness Robert A. Kopas at 3-4, and Application, Schedule D-1.

⁵ See direct testimony of Kopas at 4, also at Application, Schedule D-3.

1 term debt in calculating the overall cost of capital is reasonable in this proceeding.

2 The PUCO Staff has consistently used the embedded cost of long-term debt in its
3 estimation of the cost of capital in many previous water rate cases.

4
5 **Q10. PLEASE DESCRIBE AND EXPLAIN YOUR SELECTION OF A**
6 **COMPARABLE GROUP OF WATER COMPANIES THAT HAVE**
7 **BUSINESS AND FINANCIAL RISKS SIMILAR TO THOSE OF AQUA**
8 **OHIO.**

9 **A10.** The regulatory doctrine of setting a fair and reasonable return on common equity
10 for a regulated utility has been well established in the United States. It generally
11 refers to the provision of a return on common equity that allows a regulated utility
12 to have the *opportunity* to earn a return on invested capital that can attract
13 additional capital and maintain its financial integrity. Two U.S. Supreme Court
14 cases, the *Bluefield* and the *Hope* decisions, are commonly cited in defining the
15 regulatory principles of setting a fair and reasonable return on common equity.⁶

16
17 In this proceeding, it is my opinion that a fair and reasonable return on common
18 equity for Aqua Ohio should be equal or similar to the returns earned or expected
19 to be earned by water utilities with similar business and financial risks. Aqua
20 Ohio, Inc. is a wholly-owned subsidiary of Aqua America, Inc. Even though
21 Aqua Ohio does have 259,800 shares of common stock, these stocks are not

⁶ See *Bluefield Water Works & Improvement Co. v. Public Serv. Comm'n*, 262 U.S. 679, 692-93 (1923),
and *Federal Power Commission v. Hope Natural Gas Co.*, 320 US 591 (1944).

1 publicly traded in an open market.⁷ Aqua America, Inc. is the sole owner of all
2 the common stock of Aqua Ohio.⁸ There is no directly observable market price
3 for Aqua Ohio's common stock, and an ordinary investor cannot make a direct
4 investment in the common equity of Aqua Ohio, Inc. An ordinary investor can
5 only invest in the common stock of Aqua America, Inc. There is no distinct cost
6 of common equity for Aqua Ohio that is separated from the cost of common
7 equity of its publicly-traded parent company, Aqua America, Inc. Therefore, I
8 conclude that an estimated cost of common equity of Aqua America, Inc. is the
9 best proxy for the estimated cost of common equity of Aqua Ohio, Inc.

10 Currently, there are ten publicly-traded, investor-owned water companies
11 followed by the Value Line Investment Survey.⁹ Another publication, the AUS
12 Monthly Utility Report, covers eleven water utilities that include the same ten
13 companies followed by Value Line and Artesian Resources Corporation.¹⁰ Out of
14 the eleven publicly-traded water utilities, I selected four to be included in the
15 comparable group of companies for the purpose of estimating Aqua Ohio's cost of
16 common equity. The four companies are American Water Works Company, Inc.
17 ("AWK"), American States Water Company ("AWR"), Aqua America, Inc
18 ("WTR"), and California Water Service Group ("CWT"). The four companies
19 are all traded in the New York Stock Exchange, and each has a market

⁷ See Aqua Ohio, Inc. 2009 Annual Report at 2-5.

⁸ Ibid.

⁹ See Value Line Investment Survey of April 23, 2010 for the ten major water utilities covered: Aqua America, Inc., American States Water Co., Aqua America, Inc., California Water Service Group, and SouthWest Water Company, Connecticut Water Service, Inc., Middlesex Water Company, Pennichuck Corporation, SJW Corporation, and The York Water Company.

¹⁰ See AUS Monthly Utility Report, June 2010.

1 capitalization of more than \$700 million as of April 23, 2010. The other seven
2 water companies are excluded from the comparable group largely based on their
3 much smaller market capitalization in comparison to that of companies in the
4 comparable group. The use of market capitalization in choosing comparable
5 water utilities for Aqua Ohio is also consistent with the selection of large
6 companies when calculating the "equity risk premium" used in the Capital Asset
7 Pricing Model.¹¹

8
9 It is my opinion that this group of four publicly-traded, investor-owned water
10 utilities fairly reflects the business and financial risk facing Aqua Ohio and its
11 parent company Aqua America, Inc. The selected financial data of the investor-
12 owned water utilities, as reported in the most recent Value Line Investment
13 Survey and the AUS Monthly Utility Report, are shown in Table 2.

14

¹¹ In my CAPM analysis, I use the expected equity risk premium based on the difference of total returns between the group of S&P 500 companies and long-term government bonds. The smallest company in the S&P 500 group has a market capitalization of more than one billion dollars as of January 15, 2010. This is a much higher market capitalization than that of each one of the seven excluded water utilities.

**TABLE 2: SELECTED FINANCIAL DATA OF
AQUA OHIO'S COMPARABLE GROUP OF WATER UTILITIES¹²**

Company	AWK	AWR	WTR	CWT
Market Capitalization (\$million)*	3,800	700	2,400	800
2009 Sales Revenue (\$million)*	2,441	361	671	449
% of Regulated Revenue**	90	74	97	98
2009 Long-Term Debt Ratio (%)*	56.9	45.9	55.6	47.1
2009 Common Equity Ratio (%)*	43.1	54.1	44.4	52.9
Financial Strength*	B	B++	B+	B++
S&P Bond Rating**	A+	A	AA-	AA-
Moody Bond Rating**	N/A	A2	N/A	N/A
Beta*	0.65	0.80	0.65	0.75

***Q11. PLEASE DESCRIBE THE FINANCIAL MODELS USED IN YOUR
ESTIMATION OF AQUA OHIO'S COST OF COMMON EQUITY.***

A11. I used two financial models, the Capital Asset Pricing Model (CAPM) and the Discounted Cash Flow Model (DCF) to estimate the cost of common equity for Aqua Ohio. After obtaining the results of these two models, I calculated the average of the two costs of common equity and used it as the baseline cost of

¹² Data with an asterisk (*) are from April 23, 2010 Value Line Investment Survey and data with a double asterisk (**) are from the April 2010 AUS Utility Reports.

1 common equity of Aqua Ohio. I did not make any adjustment to the baseline cost
2 of common equity.

3
4 Under the CAPM, the cost rate of common equity for a public-traded company is
5 determined by the perceived relative risk of the company compared to the equity
6 market and the general level of return associated with risk-free investments. In
7 other words, the more risky the common stock of a company is perceived to be
8 relative to the entire equity market (or a large portion of the equity market), the
9 higher return the investors of that particular company will require for the
10 perceived higher risk. The Capital Asset Pricing Model can be expressed in the
11 following form:

$$r = r_f + \beta(r_m - r_f)$$

12
13 where r is the required rate of return

14 β is beta

15 r_m is the market return

16 r_f is the return on risk-free assets

17
18 Under the DCF model, the current stock price of a company is assumed to be
19 equal to the discounted value of future cash flow (typically in the form of
20 dividends) that the investors of that particular company expect to receive. The
21 internal discount rate associated with this stream of expected dividends over the
22 life of the investment is the required rate of return on common equity. Assuming

1 a constant rate of dividend growth, a DCF formula can be expressed as the
2 following:

$$K = D_1 / P_0 + g$$

4 where K is the required rate of return

5 D_1 is the current dividend

6 P_0 is the current stock price

7 g is the constant growth rate of dividend

8
9 It is my opinion that the results obtained through the proper application of the
10 CAPM and DCF are valid, sufficient and reasonable in setting the cost of equity
11 for Aqua Ohio. I have reviewed a number of testimonies on the cost of common
12 equity filed in prior water rate cases before the PUCO in recent years. Of the
13 testimonies that I have reviewed, all the expert analysts, whether representing the
14 utilities, the PUCO Staff, or other parties, have used the CAPM and DCF as the
15 primary financial models in estimating the cost of common equity. For example,
16 since 2001, the PUCO Staff has used the DCF model in nine major water rate
17 cases which the PUCO Staff has provided detailed cost of common equity
18 analysis.¹³ The PUCO Staff has used the CAPM in eight of the nine major water
19 rate cases during the same period of time.¹⁴
20

¹³ See case numbers 01-2924-WW-AIR, 03-2290-WW-AIR, 07-564-WW-AIR, 09-560-WW-AIR, 01-626-WW-AIR, 06-433-WS-AIR, 07-1112-WS-AIR, 09-391-WS-AIR, and 09-560-WW-AIR.

¹⁴ In one case, Aqua Ohio Inc., Case No. 03-2290-WW-AIR, the Staff relied only on the results of the DCF analysis for estimating the cost of common equity.

1 The results of the DCF and the CAPM are complimentary to each other. The
2 result of the DCF can be considered essentially an “absolute” measurement of the
3 cost (or required return) of common equity in the sense that it depends largely on
4 the expected dividend growth of the one specific company. The result obtained
5 through CAPM, on the other hand, reflects a “relative” measurement of the cost
6 of common equity that depends largely on the relative risk of the underlying
7 business to the entire equity market. The costs of common equity obtained from
8 these two models can serve as a “reference point” for each other. It is my opinion
9 that averaging the results obtained from these two financial models provides a
10 balanced and fair estimate of the cost of common equity for Aqua Ohio.

11
12 ***Q12. PLEASE DESCRIBE AND EXPLAIN YOUR APPLICATION OF THE***
13 ***CAPITAL ASSET PRICING MODEL IN ESTIMATING THE COST OF***
14 ***COMMON EQUITY OF AQUA OHIO, IN PARTICULAR, THE RETURN ON***
15 ***RISK-FREE ASSETS.***

16 ***A12.*** There are three main components in the application of a Capital Asset Pricing
17 Model: the return on risk-free investments, the beta, and the expected risk
18 premium of the entire equity market over risk-free investments.
19 The yields on long-term United States Treasury bonds are generally considered a
20 good proxy for the return on risk-free investment.¹⁵ The daily average over an
21 extended period of time (such as six months to one year) of actual market yields

¹⁵ See, for example, Roger A. Morin, *New Regulatory Finance*, Public Utilities Reports, Inc. (2006) at 151-153.

1 of long-term U.S. Treasury bonds is a fair and reasonable representation of the
2 risk-free return for the purpose of estimating the cost of common equity.

3
4 It is my opinion that the average market price (alternatively the yield) of various
5 long-term U.S. Treasury bonds with different maturities over an extended period
6 of time (such as six months to one year) is an accurate indicator of the investors'
7 true expectation than the forecasted yields of government bonds provided by a
8 few analysts in various publications. Consequently, I accepted the PUCO Staff's
9 methodology of calculating the return on risk-free assets and its results in the
10 CAPM analysis. The PUCO Staff used the weighted average of ten-year and
11 thirty-year daily closing Treasury yields for the period from April 1, 2009 through
12 March 31, 2010, with the weighting done in a manner that emphasizes yields in
13 more recent quarters.¹⁶ The estimated return on risk-free assets proposed by the
14 PUCO Staff is 4.02%, which is the average of 3.58% for the 10-year yield and
15 4.47% for the 30-year yield.

16
17 ***Q13. PLEASE DESCRIBE AND EXPLAIN YOUR CHOICE OF THE BETA IN***
18 ***THE APPLICATION OF THE CAPITAL ASSET PRICING MODEL.***

19 ***A13.*** The second component of CAPM is "beta." The beta coefficient measures the
20 relative risk (or the variation in price) of a particular investment (such as the
21 common stock of a water company) to the entire equity market. By definition, the
22 entire equity market has a beta of 1.0. A stock with a price movement (measured

¹⁶ See Staff Report at 15.

1 in term of the percentage of change) that is greater than the price movement of the
2 entire equity market is considered riskier than the market, and thus has a beta
3 coefficient greater than 1.0. On the other hand, the stock price of a regulated
4 utility tends to have a price movement in percentage that is smaller than the price
5 movement in percentage of the entire equity market, which means that in general,
6 regulated utilities are considered less risky than the entire equity market. There
7 are a number of sources providing the estimated values of the "beta" of publicly
8 traded companies. They include the Value Line Investment Survey, the
9 Morningstar Ibbotson Beta Book, Yahoo Finance, Reuters, Bloomberg, and MSN
10 Investors.

11
12 In my analysis, I use the beta coefficient published in the most recent Value Line
13 Investment Survey. According to Value Line, the beta coefficient reported in the
14 Investment Survey is derived from a regression analysis of the relationship
15 between weekly percentage changes in the price of a stock and weekly percentage
16 changes in the NYSE index over a period of five years.¹⁷ It is my understanding
17 that the PUCO Staff has consistently used the beta coefficient reported in the
18 Value Line Investment Survey in its CAPM analysis in recent rate cases.
19 Specifically, in all the eight water rate cases since 2001 that the PUCO Staff has

¹⁷ See Value Line Investment Survey Glossary of Investment Terms at http://www.valueline.com/sup_glossb.htm.

1 conducted detailed CAPM analysis, the PUCO Staff used the “beta” of
2 comparable water utilities reported by the Value Line.

3
4 The values of the “beta” of the four water utilities in the comparable group are:
5 0.65 for AWK, 0.80 for AWR, 0.65 for WTR, and 0.75 for CWT.¹⁸ The average
6 of the “beta” of the four water utilities in the comparable group is 0.7125.

7
8 ***Q14. PLEASE DESCRIBE AND EXPLAIN YOUR CHOICE OF THE EXPECTED***
9 ***EQUITY RISK PREMIUM IN THE APPLICATION OF THE CAPITAL***
10 ***ASSET PRICING MODEL.***

11 ***A14.*** The third component of CAPM is the “expected equity risk premium.” The
12 “expected equity risk premium” is typically defined as the difference between the
13 expected total return (stock price appreciation plus dividends) of investing in
14 common equity versus investing in “risk-free” assets such as long-term U.S.
15 government bonds. Strictly speaking, the long-term U.S. government bonds are
16 not risk-free investments. Even though the risk of default (that is not receiving
17 the coupon rate interest) is extremely low, the market values of the long-term
18 government bonds may change significantly over time in response to the general
19 economy, investors’ perceptions of the credit market, and the monetary policies of
20 the United States and other countries. Nevertheless, it is my opinion that the
21 long-term historical total return of U.S. government bonds is appropriate to use as

¹⁸ See Value Line Investment Survey of the four water utilities on April 23, 2010.

1 the return on risk-free assets in calculating the expected equity risk premium in
2 this proceeding.

3
4 As for the total return on the equity market, the historical total return over an
5 extended period of time of a portfolio of broadly-based stocks is typically chosen
6 for the purpose of calculating the expected equity risk premium. Two commonly-
7 used stock market benchmarks are the Standard & Poor's 500 Index (S&P 500
8 Index) and the New York Stock Exchange Index.¹⁹ In recent water rate cases, the
9 PUCO Staff has consistently used the S&P 500 Index, as advocated by the
10 Ibbotson SBBI Yearbook, as the equity market benchmark in calculating the
11 expected equity risk premium used in its CAPM analysis. Specifically, of the
12 eight water rate cases since 2001 that the PUCO Staff has conducted detailed
13 CAPM analysis, the PUCO Staff used the total returns of large company stocks
14 reported in the Ibbotson Yearbook (that is the S&P 500 Index) in calculating the
15 equity market premium. This is the same approach I used in my CAPM analysis.

16
17 Another issue in estimating the expected risk premium is the choice of arithmetic
18 mean versus geometric mean of historical returns. There is some debate
19 regarding whether an arithmetic mean or a geometric mean of total return can
20 provide a more "accurate" estimate of the total return to the entire equity market

¹⁹ See Ibbotson SBBI 2009 Valuation Yearbook, Morningstar, Inc., 2009 at 55.

1 over an extended period of time, and consequently a better measure of the
2 expected equity risk premium.²⁰

3
4 There is no argument that the geometric mean, by definition, is a better
5 measurement of the compounded and cumulative nature of the total returns of
6 stocks over an extended period of time. According to the *SBBI 2009 Yearbook*,
7 the Arithmetic Mean Return as reported is "a simple average of a series of
8 returns" and the Geometric Mean Return is "a measure of the *actual* average
9 performance of a portfolio over a given time period." (Emphasis added.)²¹ It is
10 my opinion that the arithmetic mean of total return does overstate the return
11 experienced by investors over an extended period of time in most instances.

12
13 It has been argued by some that a better measure of the historical total return
14 might not necessarily result in a better estimation of the cost of capital. However,
15 I do not see convincing empirical evidence that suggests an average investor
16 cannot understand the compounded nature of the value of his or her equity
17 investment over time or choose to focus on the average of uncompounded yearly
18 returns. In addition, while I am not attempting to offer a legal conclusion, it can
19 be argued that a mutual fund that does not publish the compounded total return
20 (that is the geometric mean of total return) may expose itself to the risk of not
21 fully disclosing relevant information such as the compounded annual return.

²⁰ See, for example, Ibbotson *SBBI 2009 Valuation Yearbook* at 59-60.

²¹ See Ibbotson *SBBI 2009 Valuation Yearbook* at 203.

1 There is no question that for most investors, the geometric mean of total return of
2 a stock or the stock market as a whole is more readily available than the
3 arithmetic mean of total return of a stock or the stock market as a whole.
4 Consequently, the issue of which measurement of total returns over an extended
5 period of time, arithmetic or geometric, more accurately provides the average
6 investor the right basis for their investment decisions has not been fully resolved
7 to date. The question at hand may not be whether one measurement of total return
8 is always better than another measurement of total return. It is not unreasonable
9 to assume that an average investor may have access to both the geometric mean
10 return and the arithmetic mean return data when making their investment
11 decisions. Then it is not unreasonable to use the average of these two equity risk
12 premium measurements derived from the spread of geometric means as well as
13 arithmetic means as the expected equity risk premium in the CAPM analysis.
14 This is the approach I use in this proceeding.

15
16 According to the *Ibbotson SBBI 2010 Valuation Yearbook*, the expected equity
17 risk premium based on arithmetic means is 6.0%, and the expected equity risk
18 premium based on geometric means is 4.4%. The expected equity risk premium
19 used for my CAPM analysis, as calculated by averaging the two expected equity
20 risk premiums, is 5.2%.

1 ***Q15. PLEASE DESCRIBE THE RESULTS OF YOUR CAPITAL ASSET PRICING***
2 ***MODEL IN ESTIMATING THE COST OF COMMON EQUITY OF THE***
3 ***COMPANY.***

4 ***A15.*** Based on a "beta" of 0.7125, a "risk-free" return of 4.02%, and an "expected
5 equity risk premium" of 5.2%, I calculated Aqua Ohio's cost of common equity to
6 be 7.725% under the CAPM.

7

8 ***Q16. PLEASE DESCRIBE AND EXPLAIN YOUR APPLICATION OF THE***
9 ***DISCOUNTED CASH FLOW MODEL IN ESTIMATING THE COST OF***
10 ***COMMON EQUITY OF AQUA OHIO, IN PARTICULAR THE STOCK***
11 ***PRICE AND THE CURRENT DIVIDEND YIELD.***

12 ***A16.*** There are three main components in the Discounted Cash Flow (DCF) Model: the
13 stock price, the current annual dividend, and the expected annual growth rate of
14 dividend. The expected growth rate of dividend seems to be the most critical and
15 difficult element involved in the DCF analysis.

16

17 Once again, the average actual stock price over an extended period of time is
18 appropriate for the DCF analysis in estimating the cost of equity for a utility
19 company. The forecasted stock price is of little value in the DCF model and was
20 not widely used in a regulatory proceeding. The PUCO Staff has consistently
21 used the average daily prices or the average of monthly high and low prices over a
22 twelve month period in its DCF analysis in recent water rate cases. In this
23 proceeding, the PUCO Staff used the average daily closing price of the four water

1 utilities during the period of April 1, 2009 to March 31, 2010.²² This is a
2 reasonable approach and I adopt the same price information for my DCF analysis.
3 As for the calculation of current dividend yield, the sum of the most recent four
4 quarterly dividends declared is typically used. The dividend information of a
5 publicly traded company is fully disclosed and easily verified. One typical
6 adjustment to the current dividend yield is related to the timing of dividend
7 increase, considering that the amount of annual dividend growth is usually paid in
8 equally quarterly installments.²³ This adjustment to the current annual dividend
9 yield can better recognize the timing of dividend payment and expected dividend
10 increase during the year. The Adjusted Yield can be calculated based on the
11 following formula:

12
13
$$\text{Yield} = D_0 * (1 + 0.5 * g) / P_0$$

14 where D_0 is the amount of current dividend

15 g is the constant annual growth rate of dividend

16 P_0 is the current stock price

²² See Staff Report at 15.

²³ See, for example, Ibbotson SBBI 2009 Valuation Yearbook at 51.

**Q17. PLEASE DESCRIBE AND EXPLAIN THE ESTIMATION OF ANNUAL
GROWTH RATE OF DIVIDENDS OF THE COMPARABLE COMPANIES
IN THE DCF ANALYSIS.**

A17. In my DCF analysis, I chose a constant dividend growth model. A constant rate of dividend growth is not an unreasonable assumption for a regulated water company. The demand for water is relatively inelastic and there is really no substitute for water for a typical water customer. Even in the last two and half years, with the most severe economic downturn since the Great Depression of the 1930s, only one of the eleven investor-owned and publicly traded water utilities covered in the Value Line Investment Survey and the AUS Monthly Utility Report²⁴ experienced a decline in sales revenues. In contrast, almost all major investor-owned electric and gas utilities have experienced some level of decline in sales revenue during the last two and half years, and some a significant decline. On the other hand, a water utility is generally a business with low or no business growth except in the case of major acquisition. In any event, it is my opinion that unless a strong case can be made that the future growth rate of earnings or dividends of a company will change significantly, the application of a constant DCF Model is preferred. There is no clear additional advantage for applying a multi-stage (or non-constant growth) DCF model in estimating the cost of common equity for a water utility.

²⁴ The Southwest Water Company.

1 I considered the following two indicators in estimating the future annual growth
2 rate of dividend for the four water utilities in the comparable group. These two
3 indicators are regularly reported in the Value Line Investment Survey:

- 4 1. 5-year (2005-2009) average annual rate of growth in earnings per
5 share, dividend per share, and book value per share;
- 6 2. Value Line projections (from estimates in 2007-2009 to estimates
7 in 2013 to 2015) of average annual rate of growth in per share
8 earnings, dividend, and book value.

9
10 It is my opinion that the historical and projected data provided by Value Line in
11 aggregate do present an adequate and sufficient description of those factors that
12 can influence the future growth of annual dividend. It is reasonable to use these
13 data in the DCF Model to estimate the cost of common equity of Aqua Ohio. I
14 have reviewed and considered other sources of earning and dividend growth
15 estimation, such as Yahoo, Bloomberg, Reuters, and MSN Money, and decided
16 not to incorporate them in the DCF analysis for various reasons. The selected
17 annual growth rates of various dividend-related indicators as reported in the Value
18 Line Investment Survey of April 23, 2010, are summarized in Table 3. Since the
19 historical and projected five-year growth rates for American Water Works
20 Company, Inc. are not available from Value Line at the present time, I instead
21 used the constant growth rate, 5.42%, which is the average of the other three
22 water utilities in the comparable group. In other words, I assume that the per
23 share earning, dividend, and book value of American Water Works Company,

Inc. will grow in a rate similar to the average rate of the other three water utilities
in the comparable group.

**TABLE 3: SELECTED ANNUAL RATE OF GROWTH
OF PER SHARE EARNINGS, DIVIDEND, AND BOOK VALUE OF
COMPARABLE WATER UTILITIES**

Company Ticket	AWK	AWR	WTR	CWT
<hr/>				
5 Year Historical Growth Rate				
Annual Per Share Earnings	N/A	8.50%	5.50%	6.50%
Annual Per Share Dividend	N/A	2.00%	8.00%	1.00%
Annual Per Share Book Value	N/A	5.00%	10.00%	6.00%
Average of Historical Growth Rate		5.17%	7.83%	4.50%
<hr/>				
5 Year Projected Growth Rate				
Annual Per Share Earnings	N/A	6.50%	11.50%	6.50%
Annual Per Share Dividend	N/A	3.00%	5.50%	1.00%
Annual Per Share Book Value	N/A	3.50%	4.50%	3.00%
Average of Projected Growth Rate		4.33%	7.17%	3.50%
<hr/>				
Estimated Constant Dividend Growth Rate	5.42%	4.75%	7.50%	4.00%

As for the other two components of the DCF Model, I accepted the average stock price and the current annual dividend proposed in the Staff Report. Then, I estimated the cost of common equity based on my estimated constant dividend growth rate, adjusted current dividend yield, and the average stock price proposed by the PUCO Staff. These estimates are summarized in Table 4. My estimated cost of common equity for Aqua Ohio, 8.89%, is the average of the costs of common equity of the four comparable water utilities.

**TABLE 4: DCF-BASED ESTIMATES OF COST OF COMMON EQUITY
OF FOUR COMPARABLE WATER UTILITIES**

Company Ticket	AWK	AWR	WTR	CWT
Average Current Price	\$20.09	\$34.20	\$17.18	\$37.09
Current Annual Dividend	\$0.83	\$1.02	\$0.55	\$1.18
Current Yield	4.13%	2.98%	3.20%	3.18%
Constant Rate of Growth	5.42%	4.75%	7.50%	4.00%
Adjusted Yield	4.25%	3.07%	3.32%	3.25%
DCF-based Cost of Equity	9.67%	7.82%	10.82%	7.25%

Q18. PLEASE EXPLAIN YOUR CONCLUSION OF AQUA OHIO'S COST OF COMMON EQUITY AND OVERALL RATE OF RETURN BASED ON THE RESULTS OF THE CAPM AND DCF MODELS.

A18. I estimated Aqua Ohio's cost of common equity to be 7.725% under the CAPM and 8.89% under the DCF Model. The baseline cost of common equity for Aqua

1 Ohio is the average of the above two estimates. I gave no preference to either one
2 of these two financial models. It is my opinion that these two models are
3 complimentary to each other and that the average of the estimated costs of
4 common equity from these two models fairly and reasonably represents the cost
5 of common equity of Aqua Ohio. My recommended cost of common equity for
6 Aqua Ohio is 8.31%.

7
8 I accepted Aqua Ohio's proposed capital structure and the cost rate of its long-
9 term debt. Then, I calculated the weighted cost of capital, or the overall rate of
10 return, based on my estimated cost of common equity and the cost rate of long-
11 term debt as well as the stand-alone capital structure proposed by Aqua Ohio and
12 PUCO Staff. My recommended rate of return for Aqua Ohio is 7.32%.

13
14 **IV. EVALUATION OF AQUA OHIO'S PROPOSED RATE OF RETURN**
15

16 ***Q19. PLEASE DESCRIBE AQUA OHIO'S PROPOSED METHODOLOGY, IF***
17 ***ANY, FOR DETERMINING ITS COST OF EQUITY AND RATE OF***
18 ***RETURN IN THIS PROCEEDING.***

19 ***A19.*** Aqua Ohio proposed using its actual capital structure as of June 30, 2009, which
20 consists of 48.57% long-term debt and 51.43% common equity in this
21 proceeding.²⁵ The amounts and cost rates for each capital component are
22 summarized in Schedule D-1 of Aqua Ohio's Application. The Company has

²⁵ See direct testimony of Kopas at 3-4, and Application Schedule D-1.

1 calculated its embedded cost of long-term debt at 6.27% as of June 30, 2009.²⁶
2 Aqua Ohio's witness has not described and supported the proposed cost rate of
3 common equity and the resulting overall rate of return in his testimony. Aqua
4 Ohio proposed a cost rate of common equity of 10.85% and a weighted cost of
5 capital of 8.63% in Schedule D-1 of its Application. No additional explanations
6 were provided in the Application and accompanying testimony. In a response to
7 OCC Interrogatory No. 25, Aqua Ohio responded that its Regional Controller, Mr.
8 Robert A. Kopas, has determined the cost of common equity to be 10.85% based
9 on his knowledge of filings by similarly situated water utilities. See Attachment
10 DJD-B. There is no description or explanation about when these filings were
11 made, in which jurisdictions, and by which water utilities. Also, based on my
12 review of the Staff Reports of previous water rate cases in Ohio, PUCO Staff has
13 not used this particular approach.

14
15 ***Q20. DO YOU HAVE ANY CONCERNS REGARDING THE PROPOSED***
16 ***METHODOLOGY USED BY THE COMPANY IN ESTIMATING ITS COST***
17 ***OF COMMON EQUITY?***

18 ***A20.*** Yes.

19
20 ***Q21. WHAT CONCERNS DO YOU HAVE REGARDING THE PROPOSED***
21 ***METHODOLOGY USED BY THE COMPANY IN ESTIMATING ITS COST***
22 ***OF COMMON EQUITY?***

²⁶ See Application Schedule D-3.

1 **A21.** It is my opinion that the cost of common equity and rate of return as proposed in
2 the Application of Aqua Ohio are baseless and without proper support. They are
3 derived essentially from one person's subjective judgment without any
4 explanation or proof that they are reasonable and fair to the customers of Aqua
5 Ohio.

6

7 **V. EVALUATION OF THE PROPOSED RATE OF RETURN STATED IN**
8 **THE STAFF REPORT**

9

10 ***Q22. PLEASE BRIEFLY DESCRIBE THE PROPOSED METHODOLOGY AND***
11 ***RESULTS IN ESTIMATING AQUA OHIO'S COST OF EQUITY AND THE***
12 ***OVERALL RATE OF RETURN THAT ARE IDENTIFIED IN THE STAFF***
13 ***REPORT.***

14 **A22.** The rate of return methodology used by the PUCO Staff in this proceeding is
15 similar to the methodology employed by the PUCO Staff in previous water rate
16 cases. In the Staff Report, PUCO Staff accepted the capital structure and cost rate
17 of long-term debt proposed by the Company. The PUCO Staff selected a
18 comparable group consisting of four publicly-traded water utilities listed as
19 "Water Utilities" by Yahoo Stock Screener with a market capitalization over \$500
20 million and those companies were also included in the Value Line Investment
21 Survey.²⁷ The PUCO Staff's cost of common equity estimate is the average of
22 the results of the CAMP and DCF model applied to the four comparable water

²⁷ See Staff Report at 14.

1 utilities. The PUCO Staff's estimated cost of common equity under the CAPM is
2 8.13% while their estimated cost of common equity under the DCF Model is
3 10.48%.

4
5 The PUCO Staff's baseline cost of common equity is the average of the costs of
6 common equity derived from the CAPM and the DCF models, which is 9.30%.
7 Then the PUCO Staff proposed a range for Aqua Ohio's cost of common equity,
8 8.80% to 9.80%, assuming a one hundred basis point range of uncertainty.²⁸ In
9 setting the range of the proposed cost of common equity, the PUCO Staff further
10 made an allowance for equity issuance and other costs, resulting in an adjustment
11 factor of 1.00991. The final recommended range of cost of common equity for
12 Aqua Ohio is 8.89% to 9.90%. Based on this cost rate of common equity and the
13 cost rate of long-term debt and capital structure proposed by the Company, PUCO
14 Staff recommended a range of 7.62% to 8.14% for the overall rate of return for
15 Aqua Ohio in this proceeding.

16
17 ***Q23. DO YOU HAVE ANY CONCERNS REGARDING THE PUCO STAFF'S***
18 ***PROPOSED COST OF COMMON EQUITY AND OVERALL RATE OF***
19 ***RETURN IN THIS PROCEEDING?***

20 ***A23.*** Yes.
21

²⁸ Id. at 16.

1 **Q24. PLEASE IDENTIFY THE CONCERNS YOU HAVE REGARDING THE**
2 **PUCO STAFF'S PROPOSED COST OF EQUITY AND OVERALL RATE OF**
3 **RETURN IN THIS PROCEEDING.**

4 **A24.** My first concern is the PUCO Staff's proposed adjustment factor of 1.00991 for
5 equity issuance and other costs.²⁹ This adjustment is considerably less than the
6 issuance cost adjustments in previous water rate cases. This smaller adjustment
7 of equity issuing and related costs probably reflects the high percentage of
8 retained earnings in relation to the total common equity.³⁰ However, this
9 adjustment for equity issuance and other costs is unnecessary. It increased the
10 proposed cost of common equity for about 0.10%, and thus would increase the
11 costs of water and wastewater services to the customers of Aqua Ohio. In its
12 Application and testimony, Aqua Ohio did not ask for an adjustment to its cost of
13 equity for equity issuance cost or other related costs. Aqua Ohio did not provide
14 proof that the Company indeed incurred any issuance cost or other related costs
15 that are still to be amortized. Aqua Ohio has provided no indication that the
16 Company would incur such costs in the reasonably near future.

17
18 My second concern is the expected equity risk premium used by the PUCO Staff
19 in its Capital Asset Pricing Model. The PUCO Staff's proposed equity risk
20 premium of 5.6% was overstated because it was based solely on the difference of
21 arithmetic mean total returns between large companies' stocks and long-term

²⁹ Ibid.

³⁰ See Staff Report at 111.

1 government bonds. As I have discussed, the geometric mean is a more accurate
2 measurement of the annual total returns on equity and risk-free investments, and
3 the average investor is likely to have better access to the compounded and
4 cumulative total returns, i.e., the geometric mean of total return. The exclusive
5 use of arithmetic mean of annual returns tends to inflate the historical annual rate
6 of return, and thus, inflate the estimated cost of common equity. In addition, it
7 appears that the PUCO Staff's expected equity risk premium was based on the
8 data reported for the years 1929 to 2008. More updated data for the total
9 historical returns of equity and government bonds for the years 1929 to 2009 are
10 available and should be used. The inclusion of the 2009 data is particularly
11 important, as there were very drastic changes in the prices of equity and
12 government bonds in 2009.

13
14 My third concern is related to the long-term growth rate of earnings and dividends
15 chosen by the PUCO Staff in its DCF analysis. The PUCO Staff, in its DCF
16 analysis, incorporated a dividend growth rate from the twenty-fifth year forward
17 based on the average annual change in nominal Gross National Product ("GNP"),
18 6.70%, for the years 1929 to 2008.³¹ In my opinion, this long-term growth rate of
19 nominal GNP may not continue in the future. For example, since 1990, the
20 annual change in nominal GNP never exceeded a long-term growth rate of 6.7%.³²
21 In only eight of the last thirty years has the annual growth rate of nominal GNP

³¹ See Staff Report at 16, and Schedule D-1.9.

³² See Staff Report, D-1.9.

1 exceeded the long-term growth rate of 6.70%, and all of these eight years were in
2 the 1980s, which had a very high rate of inflation. This might contribute to a high
3 growth rate in nominal GNP in these years. In addition, an economy-wide
4 indicator such as the annual growth rate of nominal GNP may not necessarily
5 reflect investor's expectations of long term dividend growth for a particular
6 company or a specific industry.

7 My fourth concern is related to the beta coefficients used by the PUCO Staff in its
8 CAPM analysis. It appears that the PUCO Staff was using the data from an
9 earlier Value Line Investment Survey that did not include a beta coefficient for
10 the American Water Works Co., Inc. The average beta used by the PUCO Staff,
11 0.7333, was the average of the beta coefficient of three water utilities, American
12 States Water Company ("AWR", 0.80), California Water Service Group ("CWT",
13 0.75), and Aqua America, Inc. ("WTR", 0.65). The most recent Value Line
14 Investment Survey did include the beta coefficient of American Water Works Co.,
15 Inc., 0.65. With that, the proper average beta for the CAPM in this proceeding
16 should be 0.7125.

17
18 **VI. CONCLUSION**

19
20 ***Q25. DOES THIS CONCLUDE YOUR TESTIMONY?***


21 ***A25.*** Yes. However, I reserve the right to supplement my testimony in the event that
22 the Company submits additional testimonies or additional new information or
23 other data in connection with this proceeding becomes available. I also reserve

*Direct Testimony of Daniel J. Duann, Ph.D.
On Behalf of the Office of the Ohio Consumers' Counsel
PUCO Case No. 09-1044-WW-AIR*

1 the right to supplement my testimony in the event that PUCO Staff fails to support
2 the recommendations made in the Staff Report and/or change any of its positions
3 made in the Staff Report regarding cost of equity and rate of return.

CERTIFICATE OF SERVICE

I hereby certify that a copy of *Testimony of Daniel J. Duann, Ph.D. on Behalf of the Office of the Ohio Consumers' Counsel* was provided to the persons listed below via first class U.S. Mail, postage prepaid, this 21st day of June, 2010.



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Selected Publications of Daniel J. Duann, Ph.D.

Journal Articles

Regulation, The Cato Review of Business & Government, "Turning up the Heat in the Natural Gas Industry," Vol. 19, 1996, (with Kenneth W. Costello).

Managerial And Decision Economics, "Designing a Preferred Bidding Procedure for Securing Electric Generating Capacity," Vol. 12, 1991.

The Journal of Energy and Development, "Direct Gas Purchases by Local Distribution Companies: Supply Reliability and Cost Implications," Vol. 14, 1989.

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Research Reports and Presentations

The National Regulatory Research Institute, *Pricing Local Distribution Services in A Competitive Market*, 1995.

Ninth NARUC Biennial Regulatory Information Conference, Ohio State University, *The Unbundling and Restructuring of Local Distribution Services in the Post-636 Gas Market*, 1994.

The National Regulatory Research Institute, *A Survey of Recent State Initiatives on EPACT and FERC Order 636*, 1994 (with Belle Chen).

The National Regulatory Research Institute, *Restructuring Local Distribution Services: Possibilities and Limitations*, 1994.

The National Regulatory Research Institute, *The FERC Restructuring Rule: Implications for Local Distribution Companies and State Public Utilities Commissions*, 1993.

The National Regulatory Research Institute, *A Synopsis of the Energy Policy Act of 1992: New Tasks for State Public Utility Commissions*, 1993.

International Symposium on Energy, Environment & Information Management, Argonne National Laboratory, *Natural Gas Vehicles: Barriers, Potentials, and Government Policies*, 1992.

The National Regulatory Research Institute, *Natural Gas Vehicles and the Role of State Public Service Commissions*, 1992 (with Youssef Hegazy).

The National Regulatory Research Institute, *Incentive Regulation for Local Gas Distribution Companies under Changing Industry Structure*, 1991 (with Mohammad Harunuzzaman, Kenneth W. Costello, and Sung-Bong Cho).

The National Regulatory Research Institute, *Discussion Papers on Competitive Bidding and Transmission Access and Pricing issues in the Context of Integrated Resource Planning*, 1990 (with Robert E. Burns, Kenneth Rose, Kevin Kelly, and Narayan Rau).

The National Regulatory Research Institute, *Gas Storage: Strategy, Regulation, and Some Competitive Implications*, 1990 (with Peter A. Nagler, Mohammad Harunuzzaman, and Govindarajan Iyyuni).

The National Regulatory Research Institute, *State Gas Transportation Policies: An Evaluation of Approaches*, 1989 (with Robert E. Burns and Peter A. Nagler).

The National Regulatory Research Institute, *Direct Gas Purchases by Gas Distribution Companies: Supply Reliability and Cost Implications*, 1989, (with Robert E. Burns and Peter A. Nagler).

The National Regulatory Research Institute, *Competitive Bidding for Electric Generating Capacity: Application and Implementation*, 1988 (with Robert E. Burns, Douglas N. Jones, and Mark Eifert).

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of Aqua)	
Ohio, Inc. for Authority to Increase its)	
Rates and Charges in its Lake Erie)	Case No. 09-1044-WW-AIR
Division.)	

**AQUA OHIO, INC.'S RESPONSES TO
THE OFFICE OF THE OHIO CONSUMERS' COUNSEL'S SECOND SET OF
INTERROGATORIES AND REQUESTS FOR PRODUCTION OF DOCUMENTS
PROPOUNDED UPON AQUA OHIO, INC.**

Now comes Aqua Ohio, Inc. ("Aqua"), by and through counsel, and hereby submits its Objections and Responses to the Office of the Ohio Consumers' Counsel's (hereinafter, "OCC") Second Set of Interrogatories and Request for Production of Documents (collectively "data requests") in the above-captioned proceeding.

Aqua's responses to these data requests are being provided subject to, and without waiver of, the general objections stated below and any specific objections posed in response to an individual interrogatory or data request. The general objections are hereby incorporated by reference, as if fully set forth, into the individual response made to each data request. Aqua's responses to these data requests are submitted without prejudice to, and without in any respect waiving, any general objections not expressly set forth herein.

The provision of any response below shall not waive Aqua's objections. The responses below, while based on diligent investigation and reasonable inquiry by Aqua and its counsel, reflect only the current state of Aqua's knowledge, understanding and belief with respect to the matters about which the data requests seek information, based upon the investigation and discovery to date. Aqua's discovery and investigation are not yet complete and are continuing as of the date of the responses below. Aqua anticipates the possibility that it may discover additional information and/or documents, and without obligating itself to do so, Aqua reserves the right to continue its discovery and to modify or supplement the responses below with such pertinent information or documents as it may reasonably discover. The responses below are made without prejudice to Aqua's

INTERROGATORIES¹

INT-24. Please confirm that the cost rate of common equity of 10.85%, as filed in Application Schedule D-1, was used by the Company in developing its proposed rate of return?

RESPONSE: That is correct.

Robert A. Kopas

INT-25. Please explain how the cost rate of common equity of 10.85%, as filed in Application Schedule D-1, was selected by the Company?

RESPONSE: The 10.85% was selected based on the Regional Controller's knowledge of recent rate requests made by similarly situated water utilities.

Robert A. Kopas

INT-26. Was the cost rate of common equity of 10.85% referred in OCC Interrogatory No. 24 based on the recommendation of an outside consultant?

RESPONSE: The Company did not employ an outside consultant for the 10.85% recommendation.

Robert A. Kopas

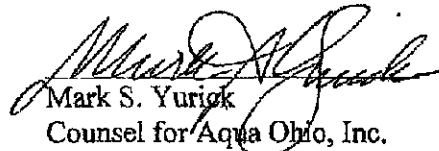
¹ In accordance with Ohio Adm. Code 4901-1-16(D)(5) the OCC is specifically requesting that all responses be supplemented with subsequently acquired information at the time such information is available - (Aqua acknowledges that this request has been made, without in any way waiving any objection it may have to this request.)

CERTIFICATE OF SERVICE

It is hereby certified that a true copy of the foregoing *Aqua Ohio, Inc. 's Responses to The Ohio Consumers' Counsel's Second Set of Interrogatories and Requests for Production of Documents Propounded Upon Aqua Ohio, Inc.* was served upon the persons listed below by regular U.S. Mail, postage prepaid (also electronically upon Aqua Ohio, Inc), this 11th day of May, 2010.

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