COMMONWEALTH OF PENNSYLVANIA

OFFICE OF CONSUMER ADVOCATE
555 Walnut Street, 5th Floor, Forum Place
Harrisburg, Pennsylvania 17101-1923
(717) 783-5048
800-684-6560

@pa_oca
/pennoca

FAX (717) 783-7152
consumer@paoca.org

August 30, 2022

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120

Re: Pennsylvania Public Utility Commission
v.
Borough of Ambler – Water Department
Docket No. R-2022-3031704

Dear Secretary Chiavetta:

Consistent with 52 Pa. Code Section 5.412a of the Commission's regulations, which requires the electronic submission of pre-served testimony, enclosed for electronic filing please find the following Pre-Served Testimony, Schedules and Exhibits, and Verifications, that were admitted at the Hearing on August 2, 2022, on behalf of the Office of Consumer Advocate ("OCA") in the above-referenced proceeding.

Office of Consumer Advocate's Direct Testimony

OCA Statement 1 - Direct Testimony of Morgan N. DeAngelo, Appendix A, Schedules MND-1 through MND-6, Appendix B, and Verification

OCA Statement 2 - Direct Testimony of Terry L. Fought, Appendix A, Exhibits TLF-1 through TLF-7, and Verification

Office of Consumer Advocate's Surrebuttal Testimony

OCA Statement 1SR - Surrebuttal Testimony of Morgan N. DeAngelo, Schedules MND-1SR through MND-6SR, and Verification

OCA Statement 2SR - Surrebuttal Testimony of Terry L. Fought, Exhibit TLF-1SR, and Verification

All testimony is accompanied by a witness verification. The OCA's submission also addresses the requirements of the Commission's January 10, 2013 Implementation Order at Docket M-2012-2331973, which requires electronic access to pre-served testimony.

All parties and the presiding officers have been served previously with the testimony and schedule and copies of this letter have been served per the attached Certificate of Service.

Respectfully submitted,

/s/ Christine Maloni Hoover
Christine Maloni Hoover
Deputy Consumer Advocate
PA Attorney I.D. # 50026
E-Mail: CHoover@paoca.org

Enclosures:
cc: The Honorable Steven K. Haas (cover letter and Certificate of Service only - **via email only**)
The Honorable John M. Coogan (cover letter and Certificate of Service only - **via email only**)
Certificate of Service
*334729

CERTIFICATE OF SERVICE

Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket No. R-2022-3031704
	:	
Borough of Ambler – Water Department	:	

I hereby certify that I have this day served a true copy of the following document, the Office of Consumer Advocate's Letter Regarding the E-Filing of Pre-Served Testimony, upon parties of record in this proceeding in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant), in the manner and upon the persons listed below:

Dated this 30th day of August 2022.

SERVICE BY E-MAIL ONLY

Allison C. Kaster, Esquire
Bureau of Investigation & Enforcement
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street, 2nd Floor
Harrisburg, PA 17120
akaster@pa.gov
Counsel for I&E

Sharon E. Webb, Esquire
Office of Small Business Advocate
555 Walnut Street
1st Floor, Forum Place
Harrisburg, PA 17101-1923
swebb@pa.gov
Counsel for OSBA

Adeolu A. Bakare, Esquire
McNees Wallace & Nurick LLC
100 Pine Street
P.O. Box 1166
Harrisburg, PA 17108-1166
abakare@mcneeslaw.com
Counsel for the Borough of Ambler

Richard Shorin
255 Ridings Way
Ambler, PA 19002
rickshorin@verizon.net

/s/ Christine Maloni Hoover
Christine Maloni Hoover
Deputy Consumer Advocate
PA Attorney I.D. # 50026
E-Mail: CHoover@paoca.org

Counsel for:
Office of Consumer Advocate
555 Walnut Street
5th Floor, Forum Place
Harrisburg, PA 17101-1923
Phone: (717) 783-5048
Fax: (717) 783-7152
Dated: August 30, 2022
*334727

OCA Statement 1

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	:	
v.	:	Docket No. R-2022-3031704
BOROUGH OF AMBLER – WATER	:	

DIRECT TESTIMONY

OF

MORGAN N. DEANGELO

ON BEHALF OF

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

JULY 1, 2022

Table of Contents

Introduction:

Q. Please state your name, business address and occupation.

A. My name is Morgan N. DeAngelo. My business address is 555 Walnut Street, Forum Place, 5th Floor, Harrisburg, Pennsylvania 17101. I am currently employed as a Regulatory Analyst by the Pennsylvania Office of Consumer Advocate (OCA).

Q. Please describe your educational background and qualifications to provide testimony in this case.

A. I have a Master's degree in Business Administration and a Bachelor of Business Administration Degree, with a concentration in Finance and a minor in Accounting from Wilkes University. My educational background and qualifications are described in Appendix A.

Q. On whose behalf are you testifying in this proceeding?

A. I am testifying on behalf of the Office of Consumer Advocate.

Purpose of Direct Testimony

Q. What is the purpose of your Direct Testimony in this proceeding?

A. The purpose of my Direct Testimony is to provide my recommendations in the general rate filing submitted by the Borough of Ambler – Bureau of Water (Borough) to the Pennsylvania Public Utility Commission (Commission). I will address the appropriate overall rate of return, adjustments to rate case normalization, cash working capital, and recommendations for rate design and scaleback.

Revenue Increase

Q. What is the requested revenue increase for the total system and the outside-borough system, by the Borough?

A. The Borough recommends there be a $930,768 or 37.33% (Borough Rate Study. Sch. 1, Line 17, Col. 9) increase in revenue to the total system, with $637,691 or 45.41% allocated to the outside-borough customers. (Borough St. No. 2, p. 3 at 21-22)

Q. What do you recommend the revenue increase for the total system and the outside-borough system be?

A. I recommend there be no more than a $908,890 or 36.46% increase in revenue to the total system, with $528,866 or 37.66% allocated to the outside-borough customers. Sch. MND-1.

<u>OCA Adjustments</u>

Rate Case Normalization

Q. What has the Borough proposed?

A. The Borough has proposed to normalize its $339,000 estimated rate case expense over 36 months. (Borough Rate Study. Sch. 6, E3)

Q. Do you agree with the Borough's proposal?

A. No, I do not. The Borough's historical filing frequency between the last two rate cases and between the last rate case and this current case were 84 months and 96 months, respectively. (Ambler Response to I&E-RE-12-D) Therefore, I am recommending that the normalization period be 90 months based on the average length of time between rate case filings. The calculation of this adjustment is reflected on Sch. MND-3. If the

Borough recognizes the entirety of its projected rate case expenses, $339,000, the three-year normalization period would result in an annual expense of $113,000, compared to $45,200 over a seven-and-a-half-year period I am recommending. Sch. MND-3. By changing the normalization period to the period represented by the historical filing frequency, I am recommending an adjustment of $67,800. Id. As shown in that adjustment, I utilized the full projected rate case expense. However, the final rate case expense normalized over seven and a half years should be equivalent to the *actual* expenses incurred. In its rejoinder testimony, the Borough should provide an update of its actual rate case expense, plus its estimate of rate case expense to complete the rate case.

Cash Working Capital

Q. Please explain your adjustment to the Borough's claim for Cash Working Capital.

A. The Borough calculated its cash working capital based upon a 12.5%, or one-eighth, of the operations and maintenance (O&M) expense. (Borough St. No. 2, p. 7 at 9-10) Based on that methodology, the Borough has a cash working capital claim of $301,608. I have adopted this methodology, except that as shown on Sch. MND-2, I have adjusted the cash working capital to $293,133, to reflect O&M adjustment I have made on Sch. MND-1. My adjusted amount of $293,133 should be modified to reflect the total adjustments to O&M, as shown on Sch. MND-1, accepted by the Commission.

Rate Base

Q. Please explain your adjustment to the Borough's Rate Base.

A. The Borough made a total system rate base claim of $18,197,784 (Borough Rate Study, Sch. 4.) With my adjustment made to Cash Working Capital, I am making an adjustment

to the Borough's Rate Base, which can be found on Sch. MND-1, lines 1-3. My adjusted Rate Base amount is $18,189,309.

Rate Design

Q. Please describe the proposed rate structure.

A. The proposed rate structure is shown in a comparison of present and proposed rates. Rates are set so that the rates for the inside Borough and outside Borough service areas are equivalent except for a difference in the volumetric charge for outside Borough customers, which is higher to recover normalized rate case expense. Under proposed rates, the average bill for an outside-Borough residential customer using 14,600 gallons per quarter would increase from $80.03 to $116.19 per quarter, or by 45.2%. (Borough St. No. 1, p. 4 at 13). The total bill for an average outside-Borough commercial customer would increase from $184.38 to $269.39 per quarter, or 46.1%. Id. The total bill for an average outside-Borough industrial customer would increase from $2,505.27 to $3,700.30 per quarter, or 47.7%. Id.

Q. How are rates applied to consumption levels?

A. The Borough has two blocks they charge customers based on consumption levels. The first block rate is applied to every 1,000 gallons for the first 110,000 gallons used during the quarter. The second block rate is applied to every 1,000 gallons for any gallon used over 110,000 gallons during the quarter.

Q. Are there any customer concerns regarding the two-block rate structure?

A. Yes. At least one customer has expressed their concern about the two-block, declining rate structure.

Q. How many bills for residential, commercial, industrial and public customers were in the second block rate, sent by the Borough for the year ended September 30, 2021?

A. In response to an informal discovery request, the Borough provided a bill frequency analysis that shows 60 residential, 19 commercial, 5 industrial, and 31 public bills were billed at the second volumetric block rate. The total bills issued by the Borough during that same time were 14,569. I have attached the bill frequency analysis provided by the Borough as Appendix B to my testimony.

Q. Do you have any recommended changes to this rate design?

A. Yes. I recommend that the Borough conduct an analysis of the impact of eliminating the second block. The analysis should be provided to the parties within 90 days after the Commission order in this proceeding. I also recommend in the next rate case, the Borough should be required to eliminate the two-block structure, making it one block.

Q. Has the Borough eliminated a consumption block in the past?

A. Yes. In the Settlement approved in the Borough's 2007 rate case (Docket No. R-00062017, Order at p. 1, 1; Joint Petition for Settlement. p. 4, 7c)), the Borough agreed to eliminate its third consumption block and it did so in its 2014 rate case (Docket No. R-2014-2400003, Rate Filing. Section A, p. A-6).

Q. What scaleback should be applied for the final revenue requirement approved by the Commission?

A. Both the customer charges and the volumetric rate(s) should be scaled back to reflect a lower revenue requirement.

Rate of Return

Q. What did company witness, Mr. D'Ascendis, recommend regarding the rate of return and its components?

A. Using the Discounted Cash Flow Model (DCF), the Risk Premium Model, and the Capital Asset Pricing Model (CAPM), Mr. D'Ascendis recommended a rate of return of 6.54%, including a 10.75% return on equity component that includes a 100-basis point size adjustment. This, along with the recommended capital structure can be found on page 3 of Borough of Ambler Statement No. 4.

	Percent	Cost Rate	Cost of Money
Long Term Debt	50.26%	2.36%	1.19%
Common Equity	49.74%	10.75%	5.35%
Total	100.00%		6.53%

Q. What is the purpose of your calculation of the Rate of Return?

A. The purpose of my rate of return analysis is to provide a recommendation of the fair rate of return for the Borough. The standards for the fair rate of return are governed by the standards established in the cases of *Hope* and *Bluefield*[1], which the fair rate of return provides an opportunity for the utility to earn a return sufficient for financial integrity and capital attraction under efficient management and that satisfies the comparable earnings standard. The United States Supreme Court reviewed the issue of fair rate of return in *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591 (1944) (*Hope*). In *Hope*, the Court held that a fair rate of return "should be commensurate with

[1] *Bluefield Water Works and Improvement Company v. Public Service Commission of the State of West Virginia*, 262 U.S. (1923). *Federal Power Commission v. Hope Natural Gas Company*, 320 U.S. (1942).

returns on investments in other enterprises having corresponding risks" while being sufficient "to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and attract capital." (*Hope* at 603). The Court also noted, however, that:

> The rate-making process under the Act, i.e., the fixing of 'just and reasonable' rates, involves a balancing of the investor and consumer interests . . . and does not insure that the business shall produce revenues."

The Supreme Court added that consumers are obliged to rely upon regulatory commissions to protect them from excessive rates and charges. ((*See Permian Basin Area Rate Case*, 390 U.S. 747, 794-95 (1968) (citing *Atlantic Refining Co. v. Public Serv. Comm'n*, 360 U.S. 378, 388 (1981))

Q. What is your recommended capital structure and costs of debt and equity for ratemaking purposes?

A. For my recommendation, I accepted the proposed capital structure and cost of debt recommended by company witness D'Ascendis, and my return on equity estimate, using the DCF, is 7.35%. My final rate of return recommendation is 4.29% after the application of a Tax Adjustment factor for the reasons explained below.

	Percent	Cost Rate	15% Tax Adjustment Factor	Cost of Money
Long Term Debt	50.26%	2.36%		1.19%
Common Equity	49.74%	7.35%	6.25%	3.11%
Total	100.00%			4.29%

Sch. MND-4

Q. What models have you used to calculate the cost of capital?

A. I calculated the cost rate of equity for ratemaking purposes using the constant growth Discounted Cash Flow Model, with the Capital Asset Pricing Model as a check on reasonableness. All inputs were derived from a proxy group of seven regulated water and wastewater companies. Those companies are: American States Water Company, American Water Works Company, Inc., California Water Service group, Essential Utilities, Inc., Middlesex Water Company, SJW Group, and York Water Company.

Return on Equity

Discounted Cash Flow

Q. Please explain what process led you to your DCF recommendation.

A. I used the constant Growth DCF Model. After the derivation, the common equity cost rate is explained as the dividend yield plus the expected growth rate.

Q. What inputs did you use for your DCF model?

A. To calculate dividend yields, I used a method which utilized the estimated growth in earnings per share (EPS) of the seven utilities in my proxy group. Sch. MND-5. These EPS growth rates were extracted from Value Line Investments Surveys, Yahoo! Finance, and Zack's Investment Research. The most recent dividends of all seven utilities, along with the 90-day closing price of their respective stocks from the first quarter of 2022, were used to derive the dividend yield for my model. These dividend yields were adjusted to accommodate growth, so they were multiplied by one half the estimated growth rate.

Q. What were the results of your DCF analysis?

A. The results of my DCF analysis are in Exhibit MND-5 and are summarized below.

Results of DCF Calculation Using Proxy Groups: 7.35%

	Average Dividend Yield (1)	Value Line Projected 5 Year Growth in EPS	Zack's 5 Year Projected Growth in RPS	Yahoo! Finance Projected 5 Year Growth in EPS	Average Projected 5 Year Growth in EPS(2)	Adjusted Dividend Yield (3)	Indicated Common Equity Cost Rate (4)
American States Water Company	1.64%	6.50%	N/A	6.70%	4.40%	1.67%	6.07%
American Water Works Company, Inc.	1.52%	8.50%	8.08%	8.20%	6.20%	1.57%	7.76%
Essential Utilities, Inc.	2.22%	10.00%	6.14%	6.40%	5.64%	2.28%	7.92%
California Water Service Group	1.66%	8.50%	N/A	11.70%	6.73%	1.71%	8.45%
Middlesex Water Company	1.14%	5.00%	N/A	2.70%	2.57%	1.15%	3.72%
SJW Group	2.14%	15.00%	N/A	5.70%	6.90%	2.21%	9.11%
York Water Company	1.75%	6.50%	N/A	4.90%	3.80%	1.78%	5.58%
						Average	6.94%
						Median	7.76%
					Average of Mean and Median		7.35%

Tax Factor

Q. Why is an adjustment required to reflect the income tax status of municipal bonds as compared to investor-owned bonds?

A. Due to income taxes associated with dividends and capital gains, investors of investor-owned utilities (IOUs) require a higher equity return than they would if dividends and capital gains were tax exempt. Accordingly, the equity returns that investors require of IOUs, implicitly reflect a provision for the income taxes that the investor pays.

Q. Is it common to have a tax factor adjustment applied to the return on equity cost rate for a municipal utility subject to Commission jurisdiction?

A. Yes.

Q. Did the Borough calculate an income tax factor for purposes of adjusting the Borough's required return on equity?

A. No, the Borough did not include an income tax factor in their calculation.

Q. What was the most recent tax factor used by a municipal utility?

A. In the City of Lancaster's 2021 base rate case (Docket No. R-2021-3026682), the utility proposed a tax adjustment factor of 15%.

Q. Do you agree 15% is the best tax factor to use in this case?

A. While I do not agree that 15% is necessarily the best tax factor, in this case, I believe it is a fair, minimum level tax factor to apply.

Q. How was the personal income tax imputed in the recommendation?

A. The appropriate yield comparison is based on the spread between public utility and GO bonds to show the maximum income tax adjustment. The difference in bond yield spreads between the public utility and GO bonds produces an estimate of income tax rates of bond investors. The comparison requires credit quality of each type of bond used be matched (i.e., Baa vs. Baa).

Q. How did you impute the personal income tax into your recommendation?

A. As showing in Schedule MND-4, I applied the 15% tax adjustment to my 7.35% recommended cost of equity, producing 3.11% cost of common equity.

Capital Asset Pricing Model

Q. What purpose does the CAPM serve in your analysis?

A. The CAPM serves as a check on reasonableness. The PUC has historically used the DCF method as the primary determinant of estimating cost of equity.

Q. Please explain your calculation of return on equity using the CAPM and adjusted CAPM.

A. The Capital Asset Pricing Model describes the relationship between a security's investment risk and its market rate of return. Investors use this to identify the rate of return they should expect for a security of similar risk. The model uses the market risk premium, risk free rate, and the financial metric Beta to calculate the return on an asset with respect to its risk.

Q. What inputs did you use in your CAPM model?

A. To calculate the Risk-free rate, I used the 3-month average of yields on 30-year treasury securities. I used a 3-month average so as not to give too much weight to any particular day's rates, and I used 30-year treasury yields to represent the long-term nature of investment decisions, found in Sch. MND-6.[2]

Q. What were the results of your CAPM analysis?

A. The results of my CAPM analysis are in Sch. MND-6 and are summarized below.

Results of CAPM analysis: 5.70%

[2] Data extracted from Value Line Investment Survey, www.Zacks.com, www.yahoo.com, http://www.seekingalpa.come/www.seekingalpha.com and www.ycharts.com

Conclusion

Q. Please summarize your recommendations.

A. I recommend an ROE of 6.25%. In calculating the final rate of return for ratemaking purposes, my recommended rate of return is 4.29%, which includes an adjustment with the addition of a tax adjustment factor. I also recommend the adjustments I've made including Rate Case Normalization adjustment of $67,800, Cash Working Capital adjustment of $8,475, and Rate Design.

Q. Does that conclude your testimony?

A. Yes, it does. However, I reserve the right to modify or supplement my testimony if necessary.

Appendix A

QUALIFICATIONS OF
MORGAN N. DEANGELO

Education:

2020 M.B.A., Wilkes University

2018 B.B.A. concentration in Finance, minor in Accounting, Wilkes University

Positions:

June 2020 – Present	Regulatory Analyst, Pennsylvania Office of Consumer Advocate
2018 – 2020	Graduate Assistant, Office of Student Development, Wilkes University

Experience:

I am currently employed by the Pennsylvania Office of Attorney General, Office of Consumer Advocate (OCA) as a Regulatory Analyst. In this position, my responsibilities of reviewing utility company filings with the Pennsylvania Public Utility Commission (Commission) and analyzing the financial, economic, rate of return, and policy issues that are relevant to the filings. Additionally, I am tasked with preparing recommendations for the OCA's involvement in utility filings with the PA PUC, writing testimony and presenting oral testimony on behalf of the OCA.

Relevant Training:

IPU Regulatory Studies - Intermediate Course, August 2020

IPU Accounting and Ratemaking Course, February 2021

Previous Cases where testimony was submitted:

- Petition of Twin Lakes Utilities, Inc., P-2020-3020914
- Application of Pennsylvania American Water Company, A-2020-3019634
- PaPUC v. UGI Utilities, Inc. – Electric Division, R-2021-3023618
- PaPUC v. Pittsburgh Water and Sewer Authority, R-2021-3024773, R-2021,3024774, R-2021-3024779
- PaPUC v. Aqua Pennsylvania, Inc., Aqua Pennsylvania Wastewater, Inc., R-2021-3027285, R-2021-3027186
- PaPUC v. City of Lancaster – Water Department, R-2021-3026682
- Application of Aqua Pennsylvania Wastewater, Inc., A-2021-302726

Docket No. R-2022-3031704
Schedule MND-1
July 1, 2022

The Borough of Ambler - Water Bureau
Adjustment of Operations and Maintance Expenses
For the FPFTY Ending September 30, 2023

	Description	Total System	Total Outside-Borough	Notes
1	Rate Base per City	$ 18,197,784		Borough Statement No. 2, Sch. 4.
2	Adjust Cash Working Capital for OCA O&M Adj.	$ (8,475)		Sch. MND-2
3	Adjusted Rate Base	$ 18,189,309		
4	Rate of Return	4.29%		Sch. MND-4
5	Net Operating Income Requirement	$ 781,210		
6	Less: NOI - Present Rates	$ (195,480)		Borough Statement No. 2, Sch. 1. Line 17, Col. R.
7	Add: OCA Adjustments			
8	Rate Case Exp. Normalization	$ (67,800)		Sch. MND-3
9				
10	Total OCA Adjustments	$ (67,800)		
11				
12				
13	Revenue Increase - OCA	$ 908,890	$ 528,866	(((908,890-45,200)*0.56)+45,2000)=528,866
14				
15	Revenue Increase Percentage - OCA	36.46%	37.66%	Revenue Increase - OCA / Total Revenues
16				
17	Increase Requested by Borough	$ 930,768	$ 637,691	
18				
19	Percentage Increase Requested by Borough	37.33%	45.41%	Increase Requested by Borough / Total Revenues

Docket No. R-2022-3031704
Schedule MND-2
July 1, 2022

The Borough of Ambler - Water Bureau
Adjustment of Cash Working Capital
For the FPFTY Ending September 30, 2023

Line No.			
1	The Borough's Projected O&M	$	2,412,865
2	Less: OCA Adjustments to O&M	$	(67,800)
3	OCA Adjusted O&M	$	2,345,065
4	CWC Percentage		12.5%
5	Total Cash Working Capital	$	293,133
6			
7	The Borough's Cash Working Capital Expense	$	301,608
8	OCA Adjustment	$	(8,475)

Docket No. R-2022-3031704
Schedule MND-3
July 1, 2022

The Borough of Ambler - Water Bureau
Adjustment of Rate Case Expense
For the FPFTY Ending September 30, 2023

Line No.			
1	Rate Case Expense	$	339,000
2	Months to Normalize*		90
3	Annual Normalized Expense	$	45,200
4			
5	The Borough's FPFTY Expense	$	113,000
6	OCA Adjustment	$	(67,800)

*This number is calculated using the average number of months between the last two rate cases(Ambler Response to I&E-RE-12-D), 84 and 96 months, respectively. (84+96)/2=90 months.

Docket No. R-2022-3031704
Schedule MND-4
July 1, 2022

The Borough of Ambler - Water Bureau
Rate of Return
For the FPFTY Ending September 30, 2023

	Percent	Cost Rate	15% Tax Adjustment Factor	Cost of Money
Long Term Debt	50.26%	2.36%		1.19%
Common Equity*	49.74%	7.35%	6.25%	3.11%
Total	100.00%			4.29%

* (0.0735*0.15)=0.0110, (0.0735-0.0110)*100=6.25%

DCF Calculation using Analyst Forecasts

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
	Average Dividend Yield (1)	Value Line Projected 5 Year Growth	Zack's 5 Year Projected Growth in RPS	Yahoo! Finance Projected 5 Year Growth	Average Projected 5 Year Growth in EPS(2)	Adjusted Dividend Yield (3)	Indicated Common Equity Cost Rate (4)
American States Water Company	1.64%	6.50%	N/A	6.70%	4.40%	1.68%	6.08%
American Water Works Company, Inc.	1.52%	8.50%	8.08%	8.20%	6.20%	1.57%	7.76%
Essential Utilities, Inc.	2.22%	10.00%	6.14%	6.40%	5.64%	2.28%	7.92%
California Water Service Group	1.66%	8.50%	N/A	11.70%	6.73%	1.72%	8.45%
Middlesex Water Company	1.14%	5.00%	N/A	2.70%	2.57%	1.15%	3.72%
SJW Group	2.14%	15.00%	N/A	5.70%	6.90%	2.21%	9.11%
York Water Company	1.75%	6.50%	N/A	4.90%	3.80%	1.78%	5.58%
						Average	6.95%
						Median	7.76%
					Average of Mean and Median		7.35%

N/A= Not Available

Notes:
(1) Most recent dividend divided by the 90 day average price ended April 1, 2022.
(2) Average of columns 2 through 4
(3) This reflects a growth rate component equal to one-half the conclusion of growth rate x column 1 to reflect the periodic payment of dividends (Gordon Model) as opposed to the continuous payment.
Thus, for American States Water Company, 1.64% x (1+(1/2 x 4.40%)) = 1.67%.
(4) Column 5 + Column 6.

Source of Information:
Value Line Investment Survey
www.zacks.com Downloaded on 06/19/2022
www.yahoo.com Downloaded on 06/19/2022

Calculation of CAPM

CAPM	=	Rf (1)	+	Beta (2)	*	(3) (Rm	-	Rf)
5.70%	=	3.05%	+	0.49	*	5.40%		

(1) Average Return on 30 Year Treasury Rate
(2) Average beta
(3) Forecasted Risk Premium from https://seekingalpha.com/article/4506593-risk-premia-forecasts-major-asset-classes-may-3-2022

Source of Information:
Value Line Investment Survey
www.zacks.com Downloaded on 06/19/2022
www.yahoo.com Downloaded on 06/19/2022

Appendix B

Attachments to OCA Statement 1

Ambler Response to I&E-RE-12-D

Informal Discovery – Outside and Non Residential Bill Frequency

Docket No. R-2022-3031704
Borough of Ambler Supplement No. 40 to Tariff Water – Pa. P.U.C. No. 5

Responses to I&E Set RE Data Requests

I&E-RE-12-D: Reference Bureau of Water Schedule 6, p. 2, Adjustment E3 concerning rate case expense. Provide the following details for the last three base rate proceedings:

A. The docket number and date of filing.

B. Whether the case was fully litigated or settled.

C. The effective date of each rate increase (including phase-ins).

D. The actual rate case expense for each base rate proceeding.

E. The claimed amount of rate case and the amount actually incurred for each filing.

Response:

Docket No.: R-00038103
Filed: January 30, 2003
Case was fully litigated.
Effective Date of Rate Increase: July 28, 2003
Actual/Proposed Rate Case Expense: The Borough has not been able to locate records of actual and proposed rate case expenses from this case.

Docket No. R-00062017:
Filed: January 31, 2007
Case was settled.
Effective Date of Rate Increase: This was done in three steps, with step 1 rates effective February 14, 2008. Step 2 and Step 3 rates were effective 30 days after the Borough completed agreed upon capital projects, the completion of Well #15 and the painting of the Houston Road Tank.
Actual/Proposed Rate Case Expense: The Borough has not been able to locate records of actual and proposed rate case expenses from this case.

Docket No. R-2014-2400003:
Filed: January 31, 2014
Case was settled.
Effective Date of Rate Increase: January 1, 2015
Actual Rate Case Expense: $55,907
Proposed Rate Case Expense: $220,000

Response Provided by: Connie Heppenstall, Valuation and Rate Consultants, LLC

Date: May 31, 2022

BOROUGH OF AMBLER
OUTSIDE BOROUGH
BILL FREQUENCY REPORT FOR THE YEAR ENDED SEPTEMBER 30, 2021

Residential - Quarterly
All Meters

Consumption 1,000 Gallons	Number of Bills	Total Consumption	Cumulative Bills	Cumulative Consumption	Consolidated Factor	Percentage Of Bills
(1)	(2)	(3)	(4)	(5)	(6)	(7)
0.00	409	0	409	0	0	2.89%
0.75	28	21	437	21	10,289	3.09%
1.00	158	158	595	179	13,749	4.20%
1.50	36	54	631	233	20,480	4.45%
1.80	1	2	632	235	24,594	4.46%
2.00	198	396	830	631	27,301	5.86%
2.24	46	103	876	734	30,554	6.18%
2.99	54	162	930	895	40,495	6.57%
3.00	297	891	1,227	1,786	40,600	8.66%
3.74	68	254	1,295	2,041	50,175	9.14%
4.00	374	1,496	1,669	3,537	53,521	11.78%
4.49	97	435	1,766	3,972	59,619	12.47%
4.52	1	5	1,767	3,977	60,016	12.47%
5.00	499	2,495	2,266	6,472	65,967	16.00%
5.24	85	445	2,351	6,917	68,775	16.60%
5.98	91	545	2,442	7,461	77,612	17.24%
6.00	544	3,264	2,986	10,725	77,799	21.08%
6.24	1	6	2,987	10,731	80,437	21.09%
6.24	1	6	2,988	10,738	80,527	21.09%
6.73	88	592	3,076	11,330	85,981	21.72%
7.00	623	4,361	3,699	15,691	88,953	26.11%
7.48	91	681	3,790	16,372	93,977	26.76%
8.00	623	4,984	4,413	21,356	99,372	31.15%
8.23	115	946	4,528	22,302	101,595	31.97%
8.98	92	826	4,620	23,128	108,804	32.62%
9.00	696	6,264	5,316	29,392	109,033	37.53%
9.49	1	9	5,317	29,401	113,351	37.54%
9.72	116	1,128	5,433	30,529	115,439	38.36%
10.00	742	7,420	6,175	37,949	117,849	43.59%
10.47	96	1,005	6,271	38,955	121,621	44.27%
10.49	1	10	6,272	38,965	121,747	44.28%
11.00	713	7,843	6,985	46,808	125,788	49.31%
11.22	94	1,055	7,079	47,863	127,368	49.98%
11.73	1	12	7,080	47,874	130,996	49.98%
11.97	91	1,089	7,171	48,964	132,668	50.62%
11.98	1	12	7,172	48,976	132,780	50.63%
12.00	694	8,328	7,866	57,304	132,892	55.53%
12.18	1	12	7,867	57,316	134,025	55.54%
12.72	69	877	7,936	58,193	137,401	56.03%
13.00	603	7,839	8,539	66,032	139,170	60.28%
13.46	76	1,023	8,615	67,055	141,781	60.82%
14.00	488	6,832	9,103	73,887	144,755	64.26%
14.21	81	1,151	9,184	75,039	145,829	64.84%
14.96	68	1,017	9,252	76,056	149,554	65.32%
15.00	476	7,140	9,728	83,196	149,751	68.68%
15.71	60	942	9,788	84,138	152,892	69.10%

16.00	468	7,488	10,256	91,626	154,170	72.40%
16.05	1	16	10,257	91,642	154,358	72.41%
16.46	74	1,218	10,331	92,860	155,952	72.93%
16.96	1	17	10,332	92,877	157,885	72.94%
17.00	403	6,851	10,735	99,728	158,038	75.79%
17.20	53	912	10,788	100,640	158,738	76.16%
17.95	46	826	10,834	101,466	161,264	76.48%
18.00	294	5,292	11,128	106,758	161,424	78.56%
18.70	33	617	11,161	107,375	163,550	78.79%
19.00	310	5,890	11,471	113,265	164,451	80.98%
19.45	33	642	11,504	113,907	165,658	81.21%
19.75	1	20	11,505	113,926	166,456	81.22%
20.00	279	5,580	11,784	119,506	167,126	83.19%
20.20	38	767	11,822	120,274	167,593	83.46%
20.94	36	754	11,858	121,028	169,346	83.71%
21.00	238	4,998	12,096	126,026	169,475	85.39%
21.69	25	542	12,121	126,568	170,906	85.57%
22.00	188	4,136	12,309	130,704	171,536	86.90%
22.44	31	696	12,340	131,400	172,353	87.12%
23.00	174	4,002	12,514	135,402	173,375	88.34%
23.19	23	533	12,537	135,935	173,685	88.51%
23.94	13	311	12,550	136,246	174,903	88.60%
24.00	123	2,952	12,673	139,198	175,006	89.47%
24.68	16	395	12,689	139,593	176,027	89.58%
25.00	133	3,325	12,822	142,918	176,493	90.52%
25.43	21	534	12,843	143,452	177,073	90.67%
26.00	102	2,652	12,945	146,104	177,824	91.39%
26.18	13	340	12,958	146,445	178,044	91.48%
26.93	13	350	12,971	146,795	178,947	91.57%
27.00	76	2,052	13,047	148,847	179,033	92.11%
27.68	10	277	13,057	149,123	179,788	92.18%
27.69	1	28	13,058	149,151	179,806	92.18%
28.00	89	2,492	13,147	151,643	180,147	92.81%
28.42	11	313	13,158	151,956	180,579	92.89%
29.00	78	2,262	13,236	154,218	181,159	93.44%
29.17	10	292	13,246	154,509	181,318	93.51%
29.92	8	239	13,254	154,749	182,006	93.57%
30.00	63	1,890	13,317	156,639	182,079	94.01%
30.67	7	215	13,324	156,853	182,645	94.06%
31.00	49	1,519	13,373	158,372	182,924	94.41%
31.42	6	188	13,379	158,561	183,254	94.45%
32.00	43	1,376	13,422	159,937	183,713	94.75%
32.16	5	161	13,427	160,098	183,835	94.79%
32.91	2	66	13,429	160,164	184,387	94.80%
33.00	54	1,782	13,483	161,946	184,452	95.19%
33.66	6	202	13,489	162,148	184,902	95.23%
34.00	35	1,190	13,524	163,338	185,132	95.47%
34.41	8	275	13,532	163,613	185,393	95.53%
35.00	34	1,190	13,566	164,803	185,768	95.77%
35.16	3	105	13,569	164,908	185,861	95.79%
35.90	9	323	13,578	165,231	186,307	95.86%
36.00	33	1,188	13,611	166,419	186,363	96.09%
36.65	5	183	13,616	166,603	186,725	96.12%
37.00	32	1,184	13,648	167,787	186,916	96.35%
37.40	3	112	13,651	167,899	187,122	96.37%
38.00	20	760	13,671	168,659	187,431	96.51%
38.15	3	114	13,674	168,773	187,504	96.53%
38.90	1	39	13,675	168,812	187,871	96.54%

39.00	26	1,014	13,701	169,826	187,922	96.72%
39.64	5	198	13,706	170,024	188,221	96.76%
40.00	28	1,120	13,734	171,144	188,384	96.96%
40.39	1	40	13,735	171,185	188,553	96.96%
41.00	18	738	13,753	171,923	188,815	97.09%
41.89	3	126	13,756	172,048	189,181	97.11%
42.00	18	756	13,774	172,804	189,226	97.24%
42.64	1	43	13,775	172,847	189,475	97.25%
43.00	17	731	13,792	173,578	189,617	97.37%
43.38	7	304	13,799	173,882	189,760	97.42%
44.00	18	792	13,817	174,674	189,986	97.54%
44.13	1	44	13,818	174,718	190,032	97.55%
45.00	18	810	13,836	175,528	190,333	97.68%
45.63	1	46	13,837	175,574	190,540	97.68%
46.00	9	414	13,846	175,988	190,662	97.75%
46.38	4	186	13,850	176,173	190,782	97.78%
47.00	20	940	13,870	177,113	190,978	97.92%
47.12	2	94	13,872	177,207	191,015	97.93%
47.87	1	48	13,873	177,255	191,234	97.94%
48.00	14	672	13,887	177,927	191,271	98.04%
49.00	11	539	13,898	178,466	191,549	98.12%
50.00	4	200	13,902	178,666	191,816	98.14%
50.12	2	100	13,904	178,766	191,847	98.16%
50.86	2	102	13,906	178,868	192,042	98.17%
51.00	7	357	13,913	179,225	192,077	98.22%
51.61	1	52	13,914	179,277	192,231	98.23%
52.00	6	312	13,920	179,589	192,329	98.27%
53.00	8	424	13,928	180,013	192,574	98.33%
53.11	1	53	13,929	180,066	192,599	98.33%
53.86	2	108	13,931	180,174	192,776	98.35%
54.00	12	648	13,943	180,822	192,810	98.43%
54.60	3	164	13,946	180,985	192,944	98.45%
55.00	1	55	13,947	181,040	193,030	98.46%
55.35	1	55	13,948	181,096	193,107	98.47%
56.00	8	448	13,956	181,544	193,248	98.52%
56.10	1	56	13,957	181,600	193,269	98.53%
56.85	1	57	13,958	181,657	193,424	98.54%
57.00	5	285	13,963	181,942	193,456	98.57%
58.00	5	290	13,968	182,232	193,658	98.61%
58.34	1	58	13,969	182,290	193,725	98.62%
59.00	4	236	13,973	182,526	193,854	98.64%
59.09	1	59	13,974	182,585	193,872	98.65%
59.84	2	120	13,976	182,705	194,015	98.67%
60.00	4	240	13,980	182,945	194,045	98.69%
61.00	6	366	13,986	183,311	194,230	98.74%
62.00	2	124	13,988	183,435	194,409	98.75%
62.08	3	186	13,991	183,621	194,424	98.77%
63.00	4	252	13,995	183,873	194,583	98.80%
64.00	5	320	14,000	184,193	194,753	98.84%
64.33	1	64	14,001	184,257	194,807	98.84%
65.00	4	260	14,005	184,517	194,917	98.87%
66.00	5	330	14,010	184,847	195,077	98.91%
67.00	4	268	14,014	185,115	195,232	98.93%
68.00	6	408	14,020	185,523	195,383	98.98%
68.82	1	69	14,021	185,592	195,502	98.98%
69.00	4	276	14,025	185,868	195,528	99.01%
70.00	4	280	14,029	186,148	195,668	99.04%
71.00	2	142	14,031	186,290	195,804	99.05%

72.00	3	216	14,034	186,506	195,938	99.08%
73.00	4	292	14,038	186,798	196,069	99.10%
73.30	1	73	14,039	186,872	196,108	99.11%
74.00	4	296	14,043	187,168	196,196	99.14%
75.00	1	75	14,044	187,243	196,318	99.15%
76.00	5	380	14,049	187,623	196,439	99.18%
76.30	1	76	14,050	187,699	196,473	99.19%
77.00	1	77	14,051	187,776	196,554	99.20%
79.00	4	316	14,055	188,092	196,782	99.22%
80.00	2	160	14,057	188,252	196,892	99.24%
83.00	2	166	14,059	188,418	197,216	99.25%
84.00	2	168	14,061	188,586	197,322	99.27%
85.27	1	85	14,062	188,671	197,454	99.27%
86.00	1	86	14,063	188,757	197,529	99.28%
86.02	1	86	14,064	188,843	197,531	99.29%
87.00	1	87	14,065	188,930	197,630	99.29%
87.52	1	88	14,066	189,018	197,682	99.30%
88.00	6	528	14,072	189,546	197,730	99.34%
89.00	4	356	14,076	189,902	197,823	99.37%
90.00	1	90	14,077	189,992	197,912	99.38%
92.00	2	184	14,079	190,176	198,088	99.39%
95.00	1	95	14,080	190,271	198,346	99.40%
96.00	5	480	14,085	190,751	198,431	99.44%
97.00	3	291	14,088	191,042	198,511	99.46%
98.00	2	196	14,090	191,238	198,588	99.47%
99.00	2	198	14,092	191,436	198,663	99.48%
102.00	2	204	14,094	191,640	198,882	99.50%
103.00	3	309	14,097	191,949	198,953	99.52%
106.00	2	212	14,099	192,161	199,157	99.53%
107.00	1	107	14,100	192,268	199,223	99.54%
109.00	1	109	14,101	192,377	199,353	99.55%
110.00	4	440	14,105	192,817	199,417	99.58%
111.00	1	111	14,106	192,928	199,477	99.58%
113.00	1	113	14,107	193,041	199,595	99.59%
115.00	3	345	14,110	193,386	199,711	99.61%
116.00	1	116	14,111	193,502	199,766	99.62%
118.00	1	118	14,112	193,620	199,874	99.63%
119.00	1	119	14,113	193,739	199,927	99.63%
121.00	1	121	14,114	193,860	200,031	99.64%
123.00	1	123	14,115	193,983	200,133	99.65%
128.00	1	128	14,116	194,111	200,383	99.65%
129.00	1	129	14,117	194,240	200,432	99.66%
129.40	1	129	14,118	194,369	200,451	99.67%
132.00	1	132	14,119	194,501	200,573	99.68%
134.00	1	134	14,120	194,635	200,665	99.68%
135.00	2	270	14,122	194,905	200,710	99.70%
136.00	2	272	14,124	195,177	200,753	99.71%
146.00	1	146	14,125	195,323	201,163	99.72%
147.00	1	147	14,126	195,470	201,203	99.72%
149.00	1	149	14,127	195,619	201,281	99.73%
154.00	1	154	14,128	195,773	201,471	99.74%
155.00	2	310	14,130	196,083	201,508	99.75%
158.00	1	158	14,131	196,241	201,613	99.76%
165.00	1	165	14,132	196,406	201,851	99.77%
166.00	1	166	14,133	196,572	201,884	99.77%
167.00	2	334	14,135	196,906	201,916	99.79%
168.00	1	168	14,136	197,074	201,946	99.80%
176.00	1	176	14,137	197,250	202,178	99.80%

179.00	1	179	14,138	197,429	202,262	99.81%
180.00	1	180	14,139	197,609	202,289	99.82%
195.00	1	195	14,140	197,804	202,679	99.82%
201.00	1	201	14,141	198,005	202,829	99.83%
206.00	1	206	14,142	198,211	202,949	99.84%
221.00	1	221	14,143	198,432	203,294	99.84%
226.00	1	226	14,144	198,658	203,404	99.85%
227.00	2	454	14,146	199,112	203,425	99.87%
230.00	1	230	14,147	199,342	203,482	99.87%
250.00	2	500	14,149	199,842	203,842	99.89%
257.00	1	257	14,150	200,099	203,954	99.89%
260.00	1	260	14,151	200,359	203,999	99.90%
262.00	1	262	14,152	200,621	204,027	99.91%
280.00	1	280	14,153	200,901	204,261	99.92%
290.00	1	290	14,154	201,191	204,381	99.92%
335.00	1	335	14,155	201,526	204,876	99.93%
382.00	1	382	14,156	201,908	205,346	99.94%
431.00	1	431	14,157	202,339	205,787	99.94%
439.00	1	439	14,158	202,778	205,851	99.95%
472.00	1	472	14,159	203,250	206,082	99.96%
494.00	1	494	14,160	203,744	206,214	99.96%
500.00	1	500	14,161	204,244	206,244	99.97%
509.00	1	509	14,162	204,753	206,280	99.98%
615.00	1	615	14,163	205,368	206,598	99.99%
618.00	1	618	14,164	205,986	206,604	99.99%
626.00	1	626	14,165	206,612	206,612	100.00%

BOROUGH OF AMBLER
OUTSIDE BOROUGH
BILL FREQUENCY REPORT FOR THE YEAR ENDED SEPTEMBER 30, 2021

Commercial - Quarterly
All Meters

Consumption 1000 GALS (1)	Number of Bills (2)	Total Consumption (3)	Cumulative Bills (4)	Cumulative Consumption (5)	Consolidated Factor (6)	Percentage Of Bills (7)
0.0	61	0	61	0	0	17.48%
1.0	24	24	85	24	288	24.36%
1.5	1	1	86	25	419	24.64%
2.0	31	62	117	87	551	33.52%
2.2	3	7	120	94	608	34.38%
3.0	2	6	122	100	779	34.96%
3.0	20	60	142	160	781	40.69%
3.7	1	4	143	164	934	40.97%
4.0	17	68	160	232	988	45.85%
5.0	10	50	170	282	1,177	48.71%
5.2	1	5	171	287	1,219	49.00%
6.0	5	30	176	317	1,355	50.43%
7.0	5	35	181	352	1,528	51.86%
7.5	1	7	182	360	1,609	52.15%
8.0	11	88	193	448	1,696	55.30%
9.0	3	27	196	475	1,852	56.16%
10.0	5	50	201	525	2,005	57.59%
11.0	3	33	204	558	2,153	58.45%
12.0	8	96	212	654	2,298	60.74%
13.0	4	52	216	706	2,435	61.89%
14.0	2	28	218	734	2,568	62.46%
14.2	1	14	219	748	2,595	62.75%
15.0	8	120	227	868	2,698	65.04%
16.0	5	80	232	948	2,820	66.48%
17.0	3	51	235	999	2,937	67.34%
17.2	1	17	236	1,016	2,960	67.62%
18.0	4	72	240	1,088	3,050	68.77%
19.0	1	19	241	1,107	3,159	69.05%
20.0	3	60	244	1,167	3,267	69.91%
21.0	2	42	246	1,209	3,372	70.49%
22.0	2	44	248	1,253	3,475	71.06%
23.0	2	46	250	1,299	3,576	71.63%
24.0	5	120	255	1,419	3,675	73.07%
25.0	2	50	257	1,469	3,769	73.64%
25.4	1	25	258	1,495	3,809	73.93%
26.0	1	26	259	1,521	3,861	74.21%
27.0	1	27	260	1,548	3,951	74.50%
29.0	2	58	262	1,606	4,129	75.07%
30.0	5	150	267	1,756	4,216	76.50%
31.0	3	93	270	1,849	4,298	77.36%
33.0	4	132	274	1,981	4,456	78.51%
36.0	5	180	279	2,161	4,681	79.94%
38.0	2	76	281	2,237	4,821	80.52%
39.0	1	39	282	2,276	4,889	80.80%

40.0	1	40	283	2,316	4,956	81.09%
43.0	1	43	284	2,359	5,154	81.38%
44.0	1	44	285	2,403	5,219	81.66%
44.1	1	44	286	2,447	5,227	81.95%
45.0	2	90	288	2,537	5,282	82.52%
46.0	1	46	289	2,583	5,343	82.81%
48.0	5	240	294	2,823	5,463	84.24%
49.0	1	49	295	2,872	5,518	84.53%
50.0	2	100	297	2,972	5,572	85.10%
51.0	2	102	299	3,074	5,624	85.67%
53.0	2	106	301	3,180	5,724	86.25%
54.0	1	54	302	3,234	5,772	86.53%
54.6	1	55	303	3,288	5,800	86.82%
56.8	1	57	304	3,345	5,903	87.11%
57.0	1	57	305	3,402	5,910	87.39%
58.0	1	58	306	3,460	5,954	87.68%
60.0	2	120	308	3,580	6,040	88.25%
62.0	1	62	309	3,642	6,122	88.54%
69.0	1	69	310	3,711	6,402	88.83%
70.0	3	210	313	3,921	6,441	89.68%
73.0	1	73	314	3,994	6,549	89.97%
75.0	1	75	315	4,069	6,619	90.26%
79.0	3	237	318	4,306	6,755	91.12%
80.0	1	80	319	4,386	6,786	91.40%
81.5	1	82	320	4,468	6,832	91.69%
82.0	2	164	322	4,632	6,846	92.26%
85.0	1	85	323	4,717	6,927	92.55%
93.0	1	93	324	4,810	7,135	92.84%
96.0	1	96	325	4,906	7,210	93.12%
98.0	1	98	326	5,004	7,258	93.41%
99.0	1	99	327	5,103	7,281	93.70%
100.0	1	100	328	5,203	7,303	93.98%
103.0	1	103	329	5,306	7,366	94.27%
106.0	1	106	330	5,412	7,426	94.56%
114.0	1	114	331	5,526	7,578	94.84%
140.0	1	140	332	5,666	8,046	95.13%
146.0	1	146	333	5,812	8,148	95.42%
166.0	1	166	334	5,978	8,468	95.70%
172.0	1	172	335	6,150	8,558	95.99%
179.0	2	358	337	6,508	8,656	96.56%
246.0	1	246	338	6,754	9,460	96.85%
261.0	1	261	339	7,015	9,625	97.13%
270.0	1	270	340	7,285	9,715	97.42%
299.0	1	299	341	7,584	9,976	97.71%
440.0	1	440	342	8,024	11,104	97.99%
450.0	1	450	343	8,474	11,174	98.28%
456.0	1	456	344	8,930	11,210	98.57%
664.0	1	664	345	9,594	12,250	98.85%
707.0	1	707	346	10,301	12,422	99.14%
713.0	1	713	347	11,014	12,440	99.43%
974.0	1	974	348	11,988	12,962	99.71%
993.0	1	993	349	12,981	12,981	100.00%

BOROUGH OF AMBLER
OUTSIDE BOROUGH
BILL FREQUENCY REPORT FOR THE YEAR ENDED SEPTEMBER 30, 2021

Industrial - Quarterly
All Meters

Consumption 1000 GALS (1)	Number of Bills (2)	Total Consumption (3)	Cumulative Bills (4)	Cumulative Consumption (5)	Consolidated Factor (6)	Percentage Of Bills (7)
2.0	1	2	1	2	24	8.33%
3.0	1	3	2	5	35	16.67%
4.0	1	4	3	9	45	25.00%
6.0	1	6	4	15	63	33.33%
50.0	1	50	5	65	415	41.67%
79.0	1	79	6	144	618	50.00%
92.0	1	92	7	236	696	58.33%
177.0	1	177	8	413	1,121	66.67%
1,469.0	1	1,469	9	1,882	6,289	75.00%
1,606.0	1	1,606	10	3,488	6,700	83.33%
1,707.0	1	1,707	11	5,195	6,902	91.67%
1,880.0	1	1,880	12	7,075	7,075	100.00%

BOROUGH OF AMBLER
OUTSIDE BOROUGH
BILL FREQUENCY REPORT FOR THE YEAR ENDED SEPTEMBER 30, 2021

Public - Quarterly
All Meters

Consumption 1000 GALS (1)	Number of Bills (2)	Total Consumption (3)	Cumulative Bills (4)	Cumulative Consumption (5)	Consolidated Factor (6)	Percentage Of Bills (7)
0.0	4	0	4	0	0	7.69%
6.0	1	6	5	6	288	9.62%
10.0	1	10	6	16	476	11.54%
12.0	1	12	7	28	568	13.46%
13.0	1	13	8	41	613	15.38%
20.0	3	60	11	101	921	21.15%
30.0	1	30	12	131	1,331	23.08%
39.0	1	39	13	170	1,691	25.00%
60.0	1	60	14	230	2,510	26.92%
73.0	1	73	15	303	3,004	28.85%
81.0	1	81	16	384	3,300	30.77%
83.0	1	83	17	467	3,372	32.69%
94.0	1	94	18	561	3,757	34.62%
100.0	3	300	21	861	3,961	40.38%
117.0	1	117	22	978	4,488	42.31%
130.0	3	390	25	1,368	4,878	48.08%
139.0	1	139	26	1,507	5,121	50.00%
180.0	2	360	28	1,867	6,187	53.85%
186.0	1	186	29	2,053	6,331	55.77%
190.0	1	190	30	2,243	6,423	57.69%
198.0	1	198	31	2,441	6,599	59.62%
200.0	1	200	32	2,641	6,641	61.54%
208.0	1	208	33	2,849	6,801	63.46%
243.0	1	243	34	3,092	7,466	65.38%
253.0	1	253	35	3,345	7,646	67.31%
290.0	1	290	36	3,635	8,275	69.23%
300.0	1	300	37	3,935	8,435	71.15%
325.0	1	325	38	4,260	8,810	73.08%
370.0	1	370	39	4,630	9,440	75.00%
422.0	1	422	40	5,052	10,116	76.92%
432.0	1	432	41	5,484	10,236	78.85%
438.0	1	438	42	5,922	10,302	80.77%
440.0	1	440	43	6,362	10,322	82.69%
494.0	1	494	44	6,856	10,808	84.62%
519.0	1	519	45	7,375	11,008	86.54%
520.0	1	520	46	7,895	11,015	88.46%
530.0	1	530	47	8,425	11,075	90.38%
545.0	1	545	48	8,970	11,150	92.31%
555.0	1	555	49	9,525	11,190	94.23%
630.0	1	630	50	10,155	11,415	96.15%
772.0	1	772	51	10,927	11,699	98.08%
900.0	1	900	52	11,827	11,827	100.00%

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re:	Pennsylvania Public Utility Commission	:	
		:	
	v.	:	Docket No. R-2022-3031704
		:	
	Borough of Ambler – Water Department	:	

VERIFICATION

I, Morgan N. DeAngelo, hereby state that the facts set forth in my Direct Testimony, OCA Statement 1, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: July 1, 2022
*331332

Signature: Morgan N. DeAngelo
Morgan N. DeAngelo

Consultant Address: Office of Consumer Advocate
555 Walnut Street
5th Floor, Forum Place
Harrisburg, PA 17101-1923

OCA Statement 2

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	:	
v.	:	Docket No. R-2022-3031704
BOROUGH OF AMBLER – WATER	:	

DIRECT TESTIMONY

OF

TERRY L. FOUGHT

ON BEHALF OF

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

JULY 1, 2022

INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS FOR THE RECORD.

A. Terry L. Fought, 780 Cardinal Drive, Harrisburg, Pennsylvania, 17111.

Q BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am a self-employed consulting engineer retained by the Office of Consumer Advocate (OCA) for the purposes of providing testimony in this proceeding.

Q. DID YOU ASSIST THE OCA IN THE BOROUGH'S LAST BASE RATE CASE, DOCKET NO. R-2014-2400003?

A. Yes. I reviewed and commented on interrogatories answered by the Borough and provided assistance to OCA during the proceeding.

Q. PLEASE DESCRIBE YOUR BACKGROUND AND QUALIFICATIONS.

A. Appendix A, which is attached to this testimony, describes my educational background and applicable experience.

Q. WHAT ISSUES HAVE YOU BEEN ASKED TO INVESTIGATE REGARDING THIS BOROUGH OF AMBLER – WATER DEPARTMENT (BOROUGH) RATE CASE?

A. The OCA requested that I investigate issues related to the quality of service provided by the Borough.

Q. WHAT DID YOUR INVESTIGATION CONSIST OF?

A. My investigation included: (1) reviewing portions of the Borough's filing applicable to Quality of Service; (2) reviewing the direct testimony of Mary Aversa, Borough Statement No. 1; (3) reviewing the Borough's responses to OCA and I&E interrogatories regarding quality of service issues; and (4) reviewing informal complaints received by the Commission.

Q. BRIEFLY DESCRIBE THE BOROUGH'S WATER SYSTEM[1].

A. The Borough serves approximately 3,967 customers in Lower Gwynedd, Upper Dublin, Whitemarsh, and Whitpain Townships and 2,260 customers inside the Borough. Water is supplied entirely by groundwater wells located throughout the Borough's service territory having a total production capacity averaging 1,950 gallons per minute. The distribution system includes 70 miles of water mains and three storage facilities: Broad Axe Standpipe (2 million gallons); Houston Road Elevated Tank (1 million gallons); and Loch Alsh Standpipe (750,000 gallons). The Water System has three emergency interconnections - two with North Wales Water Authority and one with Aqua Pennsylvania, Inc.

Q. WHAT QUALITY OF SERVICE ITEMS IS YOUR TESTIMONY GOING TO ADDRESS?

A. My testimony is going to address five items: (1) maintenance of isolation valves; (2) fire hydrants; (3) meter age; (4) pressure surveys and (5) customer complaints.

[1] Borough Statement No. 1, pp. 2-3.

ISOLATION VALVES

Q. WHAT ARE ISOLATION VALVES?

A. Isolation valves are installed on water mains so that the water can be shut off in sections of the distribution system in case of a water main break or for main repairs and replacements. Isolation valves are also used to separate different pressure zones.

Q. WHY IS IT IMPORTANT TO EXERCISE ISOLATION VALVES?

A. It is important to exercise isolation valves to prevent the valves from seizing up and getting stuck from corrosion or other deposits adjacent to the valve. An isolation valve that cannot be fully closed will increase the water loss during a water main break and increase the number of customers affected by the main break.

Q. WHAT HAPPENS IF AN ISOLATION VALVE BECOMES INOPERABLE DUE TO LACK OF BEING EXERCISED?

A. The valve either has to be repaired or replaced. Isolation valves are generally in pavement and that makes it very expensive to repair or replace. Even repairing the valve requires that the valve be exposed so that interior parts can be removed and replaced.

Q. WHAT DOES IT MEAN TO EXERCISE ISOLATION VALVES?

A. Exercising an isolation valve is operating the valve through complete full open/close cycles until it operates with little resistance. This requires some effort even for a well-maintained valve because the number of turns to fully open or close an isolation valve can vary from 12 turns for a 3-inch valve to 38 turns for a 12-inch valve.

Q. HOW OFTEN SHOULD AN ISOLATION VALVE BE EXERCISED?

A. According to The National Environmental Services Center at West Virginia University, experts recommend exercising the valves annually, if possible, or at least once every two years.[2]

According to American Water Works Association (AWWA), "[e]ach valve should be operated through a full cycle and returned to its normal position on a schedule that is designed to prevent a buildup of tuberculation [rust formation in pipes as a result of corrosion] or other deposits that could render the valve inoperable or prevent a tight shutoff. The interval of time between operations of valves in critical locations or valves subjected to severe operating conditions should be shorter than for other less important installations but can be whatever time period is found to be satisfactory based on local experience."[3]

[2] Tech Brief, Valve Exercising, 2007, Vol. 7, Issue 2, The National Environmental Services Center of West Virginia University, Morgantown, WV.
[3] American Water Works Association, 1996, Manual of Water Supply Practices, Denver: AWWA.

Q. WHAT INFORMATION DID THE BOROUGH PROVIDE REGARDING EXERCISING ISOLATION VALVES?

A. In response to OCA-II-29, the Borough: (1) has 706 isolation valves in the jurisdictional areas and 219 isolation valves in the Borough; (2) estimates that 40% (or about 370) of the isolation valves need to be replaced; (3) is required to replace two isolation valves per year[4]; and (4) does not maintain a record of isolation valves needing replacement other than through the exercise program or isolating leaks. See Exhibit TLF-1 for the Borough's responses to OCA-I-29.

In response to TUS-20, the Borough submitted information on the isolation valves replaced and exercised on an annual basis for the calendar years 2016 through 2021. See Exhibit TLF-2 for the Borough's response to TUS-20 and Exhibit TLF-3 for a tabulation of the isolation valves that the Borough replaced and exercised during those seven years.

Q. WHY WAS THE BOROUGH REQUIRED TO ONLY REPLACE TWO ISOLATION VALVES PER YEAR BY DOCKET NO. R-2014-2400003?

A. At that time, the Borough did not have an estimate of the number of valves that needed to be replaced and the parties agreed that the Borough would be required to replace two isolation valves per year in the jurisdictional areas until the next base rate case.

[4] Per Docket No. R-2014-2400003

Q. WHAT ARE YOUR COMMENTS CONCERNING BOROUGH'S MAINTENANCE OF ISOLATION VALVES SINCE THE LAST BASE RATE CASE?

A. Assuming the Borough continues to exercise and repair/replace isolation valves at the same rate as the previous seven years, it will take a total of approximately 66 years [370/5.6] to replace 40% of the isolation valves and 20 years [925/46.4] to exercise all the isolation valves. See TLF-Exh. 3.

Q. WHAT IS YOUR RECOMMENDATION CONCERNING BOROUGH'S MAINTENANCE OF ISOLATION VALVES?

A. The Borough had and has a responsibility to properly maintain all of its water facilities, including exercising isolation valves on a routine basis to prevent their repair and/or replacement. Now the Borough has seven years of local experience in exercising its isolation valves and should be able to develop a reasonable schedule going forward to prevent the repair and/or replacement of the valves because they were not exercised.

I recommend the following:

(1) the Borough should keep a maintenance log in a live Excel format for each isolation valve that indicates every time that valve was successfully exercised, opened/closed for other reasons and notes any difficulties encountered. The log should include all valves exercised or repaired/replaced after January 1, 2016;

(2) the Borough should exercise (or attempt to exercise) all of the isolation valves in the PUC-jurisdictional areas until all the isolation valves have

been exercised and continue exercising the valves at a frequency that will prevent the repair/replacement of the valves due to the lack of exercising;

(3) each year, the Borough should replace at least 30 valves that cannot be exercised in the jurisdictional areas; and

(4) the Borough should continue to annually submit the status of maintenance of the isolation valves by submitting a copy of its maintenance log to the Commission and to the parties.

FIRE HYDRANTS

Q. HOW MANY OF THE BOROUGH'S FIRE HYDRANTS THAT ARE LOCATED IN THE JURISDICTIONAL AREAS CANNOT PROVIDE A MINIMUM FIRE FLOW OF 500 GALLONS PER MINUTE AT 20 POUNDS PER SQUARE INCH?

A. According to the Borough's responses to OCA-II-17 through 22: (1) there are 214 public fire hydrants in the jurisdictional areas; (2) the Borough does not know how many of these fire hydrants cannot provide the minimum fire flow of 500 gallons per minute (gpm) at 20 pounds per square inch; and (3) there are 56 public fire hydrants in the jurisdictional areas connected to water main with a size less than 6-inches. See Exhibit TLF-4.

Q. WHAT ARE DEP'S REQUIREMENTS FOR FIRE HYDRANTS?

A. According to DEP's Public Water Supply Manual, Part II, Community System Design Standards, the minimum size water main connected to a fire hydrant is 6-inches. See Exhibit TLF-5.

Q. WHAT IS YOUR RECOMMENDATION CONCERNING THE BOROUGH'S PUBLIC FIRE HYDRANTS?

A. Each of the 56 fire hydrants that are connected to less than 6-inch water mains should be marked as such so that they will only be used for flushing and blow-offs unless the Borough documents which hydrants can provide the minimum fire flow. This is important because it is generally accepted that (1) at least 500 gpm can be pumped from every fire hydrant and (2) if a fire company pumped 500 gpm from one of these 56 fire hydrants, it may cause negative pressures that contaminate other portions of the distribution system.

METER AGE

Q. WHAT ARE THE PUC'S REQUIREMENTS FOR TESTING AND REPLACING CUSTOMER METERS?

A. The PUC requirements for testing and replacing meters according to 52 Pa. Code § 65.8. Metered service are:

(a) *Allowable error.* No water meter which has an error in registration of more than 2% may be placed in service, nor may a water meter which has an error in registration of more than 4% be allowed to remain in service, when water is passing through it at approximately the following rates of flow:

Meter size (inches)	*Gallons per minute*
5/8	6
3/4	10
1	20
1-1/2	30
2	50

3	90
4	180
6	300

(b) *Periodic tests.* No public utility furnishing metered water service may allow a water meter of 1 inch or less nor a water meter of more than 1 inch to remain in service for a period longer than 20 years and 8 years respectively without testing it for accuracy and readjusting it if it is found to be incorrect beyond the limits established in subsection (a). Upon a customer's request the public utilities shall also perform a meter test without charge if a meter has been in service, and has not been tested, for a period greater than that specified in the following table:

Inch Meter	*Years*
5/8	10
3/4	8
1	6
More than 1	4

(c) *Meter test records.* Whenever a water meter is tested, the original test record should be kept indicating the information necessary for identifying the meter, the reason for making the test, the reading of the meter before being disturbed, and the accuracy of the meter together with data taken at the time of the test. This record shall be sufficiently complete to permit the convenient checking of the methods employed and the calculations made. A record shall also be kept, preferably numerically arranged, indicating the date of meter purchase, name of manufacturer, its size, its identification, its various places of installation with dates of installation and removal, and the dates and general results of all tests.

Q. WHAT INFORMATION DID THE BOROUGH PROVIDE REGARDING ITS CUSTOMERS' METER AGE?

A. The Chapter 110 Reports that the Borough submitted to DEP for the years 2019, 2021 and 2021 indicates that during 2019, 2020 and 2021 the Borough replaced 125, 154 and 226 meters respectively and the resulting average meter age was 17, 18, and 19 years respectively. This indicates that the Borough should test/replace more meters than they have been doing recently.

Q. WHAT IS YOUR RECOMMENDATION CONCERNING THE METER AGE OF THE CUSTOMERS' METERS?

A. The Borough should submit a schedule of proposed meter testing/replacements to ensure that customer meters are in compliance with § 65.8. Metered service.

PRESSURES AND PRESSURE SURVEYS

Q. WHAT ARE THE PUC'S REQUIREMENTS FOR PRESSURES AND PRESSURE SURVEYS?

A. According to 52 Pa. Code § 65.6. Pressures:

(a) *Variations in pressure.* The utility shall maintain normal operating pressures of not less than 25 p.s.i.g. nor more than 125 p.s.i.g. at the main, except that during periods of peak seasonal loads the pressures at the time of hourly maximum demand may be not less than 20 p.s.i.g. nor more than 150 p.s.i.g. and that during periods of hourly minimum demand the pressure may be not more than 150 p.s.i.g. A utility may undertake to furnish a service which does not comply with the foregoing specifications where compliance with such specifications would prevent it from furnishing adequate service to any customer or where called for by good engineering practices. The authority of the Commission to require service improvements incorporating standards other than those set forth in this subsection when, after investigation, it determines that such improvements are necessary is not hereby restricted.

(b) *Pressure gauges.* Within 2 years after the effective date of this section, each utility shall obtain one or more recording pressure gauges for each separately operated pressure zone for the purpose of making pressure surveys as required by this section. These gauges shall be able to record the pressure experienced on the zones and shall be able to record a continuous 24-hour test. Each utility serving 1,000 or more customers or 1,000 or more customers in any separately operated zone of a multi-zone utility shall maintain one or more of these recording pressure gauges in service at some representative point or points in each of the pressure zones of the utility.

(c) *Telemetering.* An utility may make the pressure surveys required by this section by means of telemetered information electronically transferred to printed copy instead of using recording pressure gauges.

(d) *Pressure surveys.* At regular intervals, but not less than once each year, each utility shall make a survey of pressures in its distribution system of sufficient magnitude to indicate the pressures maintained at representative points on its system. The surveys should be made at or near periods of maximum and minimum usage. Records of these surveys shall show the date and time of beginning and end of the test and the location at which the test was made. Records of these pressure surveys shall be maintained by the utility for a period of at least three years and shall be made available to representatives, agents, or employees of the Commission upon request.

Notes of Decisions
Adequate Pressure

The 25 p.s.i.g. minimum expressed in subsection (a) is not intended to restrict the authority of the PUC to order improvements where service is inadequate; therefore, the PUC has the power to order needed improvements notwithstanding that the pressure in a utility's main meets the standard of the regulation. *Barone v. Pennsylvania Public Utility Commission*, 485 A.2d 519 (Pa. Cmwlth. 1984).

Q. WHAT ARE DEP'S REQUIREMENTS FOR SYSTEM PRESSURES?

A. According to DEP's Public Water Supply Manual, Part II, Community System Design Standards:

1. Pressure
All water mains, including those not designed to provide fire protection, shall be sized after a hydraulic analysis based on flow demands and pressure requirements. The pipe system and its appurtenances shall be designed to maintain a minimum pressure of 20 pounds per square inch, gauge (psig) at ground level at all points in the distribution system under all conditions of flow. The normal working pressure in the distribution system should be approximately 60 psig.[5]

[5] Public Water Supply Manual, Part II, Community System Design Standards, May 6, 2006, p. 186-187

Q. WHAT ARE THE DIFFERENCES BETWEEN THE PUC AND DEP PRESSURE REQUIREMENTS?

A. The PUC has a maximum and minimum pressure criterion while DEP has a minimum and normal working pressure criterion. The PUC has a minimum criterion of 25 psi at the main while DEP's minimum criteria is 20 psi at ground level. Assuming the distribution system main is buried 4.5 feet below ground, DEP minimum criteria is equivalent to 22 psi at the main.

Instead of having a pressure survey requirement for all water systems, DEP imposes a pressure survey requirement on specific systems with known pressure problems.

Q. WHAT ARE THE REPRESENTATIVE POINTS ON THE SYSTEM WHERE PRESSURE SURVEYS SHOULD BE CONDUCTED?

A. In general, the representative points are highest and lowest ground elevations of the distribution system in each pressure zone.

Q. HAS THE BOROUGH PROVIDED INFORMATION ON SYSTEM PRESSURES?

A. Yes. The Borough addressed pressures in response to TUS-21 which are pressures taken at most, if not all, of its fire hydrants. See Exhibit TLF-7.

Q. HAS THE BOROUGH PROVIDED A CUSTOMER COMPLAINT LOG THAT INCLUDES CUSTOMER COMPLAINTS REGARDING PRESSURES?

A. Yes. The Borough provided a Complaint Log[6] that included 71 low pressure complaints that includes two complaints made by the same customer during the same day. Almost all the pressure issues were explained by customer water softeners, meters, and filters and Borough water main breaks and main flushings. However, the Borough's Complaint Log did not indicate how the following pressure issues were resolved:

- Six low pressure complaints from 630 thru 647 Meadowbrook Lane, four during 2019, one during 2020 and one during 2021.
- 55 Hendricks Street on 02/21/22.
- 301 Gently Lane, on 6/13/22 and 6/22/22.

Q. WHAT IS YOUR RECOMMENDATION REGARDING PRESSURE COMPLAINTS ON THE LOG AND SURVEYS?

A. The Borough should explain how the above issues were resolved and that the pressures are in consistent with the requirements of 52 Pa. Code § 65.6. In future rate cases, if the Borough wants to continue to use pressures taken at fire hydrants to substitute for pressure surveys, they should continue to provide a customer complaint log that includes all customer complaints regarding pressure and state that the resolution of all the pressure complaints indicate compliance with 52 Pa. Code § 65.6.

[6] The addresses in the Complaint Log indicates it includes both Borough and Jurisdictional customers.

Q. ARE YOU AWARE OF ANY OTHER COMPLAINTS REGARDING PRESSURE?

A. No.

CUSTOMER COMPLAINTS

Q. WHAT ARE THE PUC'S REQUIREMENTS FOR CUSTOMER COMPLAINTS?

A. According to 52 Pa. Code § 65.3. Complaints.

(a) *Investigations.* A public utility shall make a full and prompt investigation of complaints made by the Commission or by others, including customers, relating to service or facilities.

(b) *Records of complaints.* A public utility shall preserve for a period of at least 5 years, written service complaints showing the name and address of the complainant, the date and character of the complaint and the final disposition of the complaint.

Q. WHAT INFORMATION HAS BEEN PROVIDED BY THE BOROUGH REGARDING QUALITY OF SERVICE CUSTOMER COMPLAINTS?

A. In addition to the pressure complaints discussed above, the Borough's Customer Complaint Log contained the following quality of service customer complaints between 6/1/2019 through 6/29/2022:

- Property Restoration
  - 2020 - 1
- Dirty Water (Credit given to Customers)
  - 2019 – 5
  - 2020 – 10
  - 2021 – 6
  - 2022 – 8
- Discolored Water
  - 2019 – 14
  - 2020 – 29
  - 2021 – 22
  - 2022 – 14
- No Water
  - 2019 – 6
  - 2020 – 7
  - 2021 – 14
  - 2022 - 1

Q. DO YOU CONSIDER THE ABOVE QUALITY OF SERVICE ISSUES UNREASONABLE FOR THE BOROUGH'S SYSTEM?

A. No. The number of the quality of service issues noted above are not unreasonable for a system the size of the Borough's that is totally supplied by well water.

Q. DO YOU HAVE ANY RECOMMENDATION'S REGARDING THE COMPLAINT LOG?

A. The Borough should submit a customer complaint log that satisfies 52 Pa. Code § 65.3 in a live Excel format annually to the parties prior to April 15 of each year. If the complaint log includes both Borough and jurisdictional customers, it should note which type of customer made the complaint. I suggest that the following categories be included so that the data can be sorted: date; location; pressure; dirty water; rusty water; water taste, odor, or color; staining (of laundry or plumbing fixtures); request for water testing; customer property damage; incomplete surface restoration; and health issues. The log should include the final disposition of the complaint.

<u>OTHER COMPLAINTS – INFORMAL, FORMAL</u>

Q. ARE YOU AWARE OF OTHER QUALITY OF SERVICE COMPLAINTS?

A. Not at this time.

Q. DOES THIS COMPLETE YOUR WRITTEN DIRECT TESTIMONY?

A. Yes, at this time. I reserve the right to supplement this testimony either in writing or orally if additional relevant information is received.

APPENDIX A

BACKGROUND AND QUALIFICATIONS

TERRY L. FOUGHT, P.E.

Education

Cleveland State University, Cleveland, Ohio, Bachelor of Civil Engineering, 1967

Professional Registrations

Professional Engineer, Pennsylvania, PE-023343-E, 1975

Professional Engineer, New Jersey, GE 25392, 1978 (Inactive)

Professional Engineer, Virginia, 10850, 1979 (Inactive)

Professional Land Surveyor, Pennsylvania, SU-000194-A, 1980 (Inactive)

Employment

From March 1983 to date, I have been a self-employed consulting engineer engaged in providing consulting engineering services to water and wastewater utilities, both private and municipal.

From May 1969 to March 1983, I was employed be E. H. Bourquard & Associates, Inc. as a project engineer to water and wastewater clients. At the time I left the firm I was a vice-president.

From 1962 to 1969, I was employed by the State of Ohio, Department of Highways and the Geauga County Ohio Sanitary Engineers Office as an engineer's assistant to assistant sanitary engineer with breaks in employment to attend college and 1½ years active duty military service.

Experience

I have prepared studies related to and designed water supply, treatment, transmission, distribution and storage facilities. I have provided services to the following private and municipal water suppliers: Amber Hill Mobile Home Park, Brockway Borough Municipal Authority, Dallas Water Company, Eastern Gas and Water Investment Company, Haddonfield Hills Development, Halifax Borough, Langhorne Spring Water Company, Mifflintown Municipal Authority, Neshaminy Water Resources Authority, Newberry Water Company, Pleasant View Mobil Home Park, H. B. Reese Candy Company, Shavertown Water Company, Smethport Water Company, Tunkhannock Water Company, and Watts Business Center.

I have prepared studies related to and designed wastewater collection and interceptor sewers, pumping stations and force mains, and treatment plants. I have provided services to the following private and municipal sewerage utilities: Brockway Glass Company, Central Dauphin School District, Clean Waste Technologies, Inc., Dauphin Borough, Dauphin Borough Municipal Authority, Halifax Area School District, Halifax Municipal Authority, Mercersburg Borough, Middle Paxton Township, Newberry Sewer Company, Newberry Township Municipal Authority, Park-a-way Park Family Campground, Reading Township Municipal Authority, Reynoldsville Borough, Saint Thomas Township, and Watts Business Center.

I have prepared over 100 stormwater management and drainage plans for land development and subdivision plans in Cumberland, Dauphin, and York Counties. Most of these plans included the design of storm sewer collection systems.

List of Public Utility cases which I have testified or provided substantial assistance:

NEW JERSEY BUREAU OF PUBLIC UTILITIES

Docket Number	Company Name
7712-1140	City of Trenton
787-847	Hackensack Water Company
814-119	City of Trenton
8310-862	City of Trenton

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Docket Number	Company Name
C-2010-2175673	Pennsylvania-American Water Company
C-2011-2259004	Endsley v PAWC
C-2012-2332951	Tschachler v UGI
C-2014-2447138	Hidden Valley Utility Services - Water
C-2014-2447169	Hidden Valley Utility Services - Wastewater
C-2018-2644592	Winola Water Company
C-2020-3022354	McKercher v Borough of Hanover
F-2011-2280415	Lynette Lugo Lopez v PGW
F-2012-2311590	Belinda Lyles v Aqua
F-2012-2330753	Scott v PGW
I-840377	Pennsylvania Gas and Water Company
I-00050109	PAWC High Fluoride Incident
I-00072313	WP Water & Sewer Co.
I-2009-2109324	Clean Treatment Sewer Company
I-2016-2526085	Delaware Sewer Company
P-2008-2075142	Pennsylvania-American Water Company
P-2014-2404341	Delaware Sewer Company
P-2017-2584953	Aqua Pennsylvania, Inc.
P-2017-2594725	Newtown Artesian Water Company
P-2017-2585707	Pennsylvania-American Water Company
P-2017-2589724	Suez Water Pennsylvania, Inc.
P-2020-3020914	Twin Lakes Utilities, Inc.
R-00850174	Philadelphia Suburban Water Company
R-00932785	Meadows Water Company
R-00963708 (Sewer)	Wynnewood Water & Sewer Corporation
R-00963709 (Water)	Wynnewood Water & Sewer Corporation
R-00984257	Consumers Pa. Water Company
R-00984334	National Utilities, Inc.
R-00984375	City of Bethlehem
R-00994672	Superior Water Company
R-00005031	Penn Estates Utilities, Inc.
R-00005050	Emporium Water Company
R-00005212 (Sewer)	Pennsylvania-American Water Company
R-00005997	Jackson Sewer Corporation
R-00027982 (Sewer)	Pennsylvania-American Water Company
R-00049862	City of Lancaster – Sewer Fund
R-00050607	Glendale Yearound Sewer Co.
R-00050659	Wonderview Water Co.
R-00050673	Pocono Water Co.
R-00050678	Mesco, Inc.

PENNSYLVANIA PUBLIC UTILITY COMMISSION (Continued)

Docket Number	Company Name
R-00050814	Marietta Gravity Water Co.
R-00051030	Aqua Pennsylvania, Inc.
R-00051167	City of Lancaster – Water Fund
R-00061297	Emporium Water Co.
R-00061492	Reynolds Disposal Co.
R-00061496	Columbia Water Co.
R-00061617	Allied Utilities Services
R-00061618	Imperial Point Water Co.
R-00061625	Phoenixville Sewer Fund
R-00061645	Eaton Water Co.
R-00062017	Borough of Ambler Water Department
R-00072074 (Sewer)	Aqua PA, Little Washington Division
R-00072075 (Sewer)	Aqua PA, Chesterdale/Williamstown Division
R-00072351	Village Water Company
R-00072491	Clarendon Water Company
R-00072492	City of Bethlehem, Bureau of Water
R-00072493 (Water)	Total Environmental Solutions, Inc., Treasure Lake
R-00072711	Aqua PA
R-2008-2020729	Blue Knob Water Company
R-2008-2020873	Warwick Drainage Company
R-2008-2020885	Warwick Water Works, Inc.
R-2008-2032689	PAWC Coatesville Wastewater Operations
R-2008-2039261	Superior Water Company
R-2008-2045157	Columbia Water Company
R-2008-2047291	Rock Spring Water Company
R-2008-2079310	AQUA, PA
R-2008-2081738	Little Washington Wastewater Company
R-09-2097323	Pennsylvania-American Water Company
R-2009-2102464	Reynoldsville Water Company
R-2009-2103937	PA Utility Company, Inc (Water)
R-2009-2103980	PA Utility Company, Inc (Sewer)
R-2009-2105601	Fryburg Water Company
R-2009-2110093	Birch Acres Water Company
R-2009-2115743	Lake Spangerberg Water Company
R-2009-2116908	Hanover Borough Water
R-2009-2117289	Utilities Inc, Westgate (Water)
R-2009-2117532	Penn Estates Utilities Inc (Water)
R-2009-2117750	Newtown Artesian Water Company
R-2009-2121928	Clean Treatment Sewage Company
R-2009-2122887	United Water Pennsylvania, Inc
R-2009-2132019	AQUA, PA
R-2010-2157062	Tri-Valley Water Supply Company, Inc
R-2010-2166208	Pennsylvania American Water Company (Wastewater)
R-2010-2171339	Reynolds Disposal Company
R-2010-2171918	TESI, Treasure Lake, Water Division
R-2010-2171924	TESI, Treasure Lake, Sewer Division
R-2010-2174643	City of Lock Haven
R-2010-2179103	City of Lancaster Water Department
R-2010-2191376	Superior Water Company
R-2010-2194499	Dear Haven Water Company
R-2010-2194577	Dear Haven Sewer Company

PENNSYLVANIA PUBLIC UTILITY COMMISSION (Continued)

Docket Number	Company Name
R-2010-2207833	Little Washington Waste Water, Masthope Division
R-2010-2207853	Little Washington Waste Water, SE Consolidated Division
R-2011-2218562	CMV Sewage Company, Inc.
R-2011-2232243	Pennsylvania-American Water Company
R-2011-2232985	United Water Company
R-2011-2244756	City of Bethlehem- Bureau of Water
R-2011-2246415	Twin Lakes Utilities, Inc.
R-2011-2248531	Wonderview Sanitary Facilities
R-2011-2248937	Fairview Sanitation Company
R-2011-2251181	Borough of Quakertown, Water
R-2011-2255159	Penn Estates Utility Inc - Water
R-2012-2286118	Audubon Water Company
R-2012-2330887	North Heidelberg Sewer Company
R-2012-2310366	City of Lancaster Sewer Fund
R-2012-2311725	Borough of Hanover - Sewer
R-2012-2315536	Imperial Point Water Company
R-2012-2336662	Rock Springs Water Company
R-2013-2350509	City of DuBois, Bureau of Water
R-2013-2355276	Pennsylvania-American Water Company
R-2013-2360798	Columbia Water Company
R-2013-2370455	Penn Estates Utilities, Inc. - Sewer Division
R-2013-2367108	Fryburg Water Company
R-2013-2367125	Cooperstown Water Company
R-2013-2390244	City of Bethlehem – Bureau of Water
R-2014-2400003	Borough of Ambler – Water Department
R-2014-2420204	Pocono Waterworks Company, Inc. (Water)
R-2014-2420211	Pocono Waterworks Company, Inc. (Sewer)
R-2014-2402324	Emporium Water Company
R-2014-2430945	Plumer Water Company
R-2014-2428304	Borough of Hanover Water Department
R-2014-2410003	City of Lancaster-Bureau of Water
R-2014-2427035	Venango Water Company
R-2014-2427189	B E Rhodes Sewer Company
R-2014-2447138	Hidden Valley Utilities Services - Water
R-2014-2447169	Hidden Valley Utilities Services – Sewer
R-2014-2452705	Delaware Sewer Company
R-2015-2462723	United Water Pennsylvania
R-2015-2470184	Borough of Schuylkill Haven Water Department
R-2015-2479962	Corner Water Supply
R-2015-2506337	Twin Lakes Utilities, Inc.
R-2016-2538600	Community Utilities of Pennsylvania, Inc.
R-2016-2554150	City of DuBois – Bureau of Water
R-2017-2595853	Pennsylvania-American Water Company
R-2017-2598203	Columbia Water Company
R-2017-2631441	Reynolds Water Company
R-2018-3000022	York Water Company
R-2018-3000834	Suez Water Company
R-2018-3002645 (Water)	Pittsburgh Water & Sewer Authority
R-2018-3002645 (Sewer)	Pittsburgh Water & Sewer Authority
R-2018-3001306 (Water)	Hidden Valley Utility Services
R-2018-3001307 (Sewer)	Hidden Valley Utility Services

PENNSYLVANIA PUBLIC UTILITY COMMISSION (Continued)

Docket Number	Company Name
R-2019-3008947 (Water)	Community Utilities of PA
R-2019-3008948 (Sewer)	Community Utilities of PA
R-2019-3010955	City of Lancaster Sewer Fund
R-2019-3010958	Twin Lakes Utilities, Inc.
R-2020-3017951	Pittsburgh Water and Sewer Authority
R-2020-3017970	Pittsburgh Water and Sewer Authority
R-2020-3019369	Pennsylvania-American Water Company
R-2020-3020256	City of Bethlehem
R-2020-3020917	Audubon Water Company
R-2020-3026116	Hanover Borough Water Department
R-2020-3024773	Pittsburgh Water and Sewer Authority (W)
R-2020-3024774	Pittsburgh Water and Sewer Authority (WW)
R-2020-3024779	Pittsburgh Water and Sewer Authority (SW)
R-2021-3025206	Community Utilities of Pennsylvania, Inc. (W)
R-2021-3025207	Community Utilities of Pennsylvania, Inc. (WW)
R-2021-3026682	City of Lancaster Water Department
R-2021-3027385	Aqua Water Company (W) (WW)

Docket No. R-2022-3031704
Borough of Ambler Supplement No. 40 to Tariff Water – Pa. P.U.C. No. 5

Responses to OCA Data Requests, Set II

OCA-II-29 Reference: Isolation valves: Order Docket No. R-2014-2400003. Settlement ¶ 7(g).

a. How many isolation valves are located in the jurisdictional areas?
b. How many of these jurisdictional valves need to be repaired or replaced?
c. How many isolation valves are located in the Borough?
d. How many of these Borough valves need to be repaired or replaced?

Response:

a. The Borough has 706 isolation valves located in the jurisdictional areas.

b. Per the Order at Docket No. R-2014-2400003, the Borough is required to replace two valves per year. The Borough also identifies additional necessary valve replacements through the. exercise program or when isolating valves to address leaks. The Borough does not otherwise maintain a record of needed valve replacements, but estimates that approximately 40% of the total system valves (inside-Borough and jurisdictional) need to be replaced.

c. There are 219 isolation valves located in the Borough.

d. See above response to (b).

Response Provided by: **Mary Aversa, Borough Manager**
Ambler Borough

Date: June 21, 2022

Docket No. R-2022-3031704
Borough of Ambler Supplement No. 40 to Tariff Water – Pa. P.U.C. No. 5

Responses to TUS Data Request – Set 1

TUS-20. The Commission's December 2014 Order, Ordering Paragraph No. 7 directed Ambler to continue to replace two isolation valves per year and required Ambler to submit a schedule by March 1 at the aforementioned docket showing work performed in the preceding calendar year. The schedule was to include the location, size, date installed, municipality for each valve replaced, and dates exercised. Ambler appears to have filed schedules with the Commission on February 21, 2017 and February 26, 2018 at Docket No. R-2014-2400003 for the 2016 and 2017 calendar years, respectively. However, Ambler does not appear to have to filed schedules for the calendar years between 2018 through 2021. Please submit a combined valve exercise schedule for the calendar years between 2018 through 2021 to include noting the two isolation valves that were replaced each calendar year between 2018 through 2021.

Response:

See Attachment TUS-20.

Response Provided by: Mary Aversa, Borough Manager

Date: April 25, 2022

Borough Of Ambler

131 Rosemary Avenue
AMBLER, PENNSYLVANIA 19002

PHONE 215-646-1000
FAX 215-641-1355 ADMINISTRATION
FAX 215-641-1921 WATER DEPARTMENT
WEBSITE: www.boroughofambler.com

February 7, 2022

Joseph Bresnan, Esq.
Bresnan Law Offices
100 Springhouse Drive, Suite 207
Collegeville, PA 19426

Dear Joe:

Pursuant to PA PUC's requirement for Ambler Borough Water Department to replace two valves in our distribution system annually, as well as continue the procedure of exercising valves in the distribution system, please be advised that the following scheduled and/or emergency valve replacements or insertions were made during calendar year 2021:

2021 VALVE REPLACEMENTS

Location: Butler Ave & Prophecy Creek
Valve: Insertion
Size: 10 inch
Date: 2/2021
Municipality: Ambler Borough

Location: Race St & N. Ridge Ave
Valve: Insertion
Size: 4 inch
Date: 11/2021
Municipality: Ambler Borough

Location: 504 N Bethlehem Pike
Valve: Insertion
Size: 8 inch
Date: 12/2021
Municipality: Lower Gwynedd Township

Location: Houston Rd & Penn Ambler Rd
Valve: Gate
Size: 4 inch
Date: 4/2021
Municipality: Lower Gwynedd Township

Location: Butler Pike & Chestnut Ave
Valve: Insertion
Size: 10 inch
Date: 2/2021
Municipality: Ambler Borough

Location: 426 N Bethlehem Pike
Valve: Insertion
Size: 8 inch
Date: 12/2021
Municipality: Lower Gwynedd Township

Location: Alene Rd & Bethlehem Pike
Valve: Gate
Size: 8 inch
Date: 12/2021
Municipality: Lower Gwynedd Township

Location: Knight Rd & Francis Ave
Valves: 3 Gate
Sizes: 3 – 10 inch
Date: 11/2021
Municipality: Lower Gwynedd Township

Location: Knight Rd & Brookside Ave
Valves: 3 Gate
Sizes: 3 - 10 inch
Date: 11/2021
Municipality: Lower Gwynedd Township

Location: Knight Rd & Norma Rd
Valves: 3 Gate
Sizes: 3 – 10 inch
Date: 11/2021
Municipality: Lower Gwynedd Township

Location: 431 Knight Rd @ Well 12
Valve: Gate
Size: 6 inch
Date: 11/2021
Municipality: Lower Gwynedd Township

The following valves in our distribution system were exercised by the Ambler Borough Water Department in 2021:

VALVES EXERCISED IN 2021

STREET	AT	4"	6"	8"	10"	12"	EXERCISED
Bethlehem Pike	Mt. Pleasant Ave.		3				8-2021
Euclid Ave.	Park Ave.	1					3-2021
Euclid Ave.	North St.	4					3-2021
Mt. Pleasant Ave.	Railroad Ave.	1					8-2021
Mt. Pleasant Ave.	N. Spring Garden St.	4					8-2021
Mt. Pleasant Ave.	N. Ridge Ave.	1					8-2021
Mt. Pleasant Ave.	Pleasant Acres Dr.		1				8-2021
Mt. Pleasant Ave.	Reiffs Mill Rd.	3					8-2021
Mt. Pleasant Ave.	Overlook Rd.		1				8-2021
Clair Martin Place	Rose Valley Way	2					8-2021
Highland Ave.	Villa Dr.		2	2			8-2021
Highland Ave.	Van Sant Lane		2	1			8-2021
Inverness Ave.	S.E. Turnaround		2				8-2021
Meissen Court	Rose Valley Way	2		1			3-2021
Quinard Court	Rose Valley Way	1		1			3-2021
Rose Valley Way	S.E. Turnaround	1		2			8-2021
Willowmere Ln.	Willow Ave.	1		3			8-2021
Butler Pike	Hampton Lane			3			8-2021

Ambler Borough Water Department is hereby providing notification, as required by the PA PUC reporting date of March 1, 2022, regarding scheduled valve replacements and valve exercising schedules for 2022.

2022 VALVES SCHEDULED TO BE REPLACED

Location: Knight Rd & Houston Rd
Valve: Insertion
Size: 8 inch
Date: Scheduled for 2022
Municipality: Lower Gwynedd Township

Location: Haywood Ave & Tennis Ave
Valve: Insertion
Size: 6 inch
Date: Scheduled for 2022
Municipality: Ambler Borough

Finally, Ambler Borough Water Department intends to schedule, mark and exercise valves in 2022 as follows:

2022 VALVES SCHEDULED TO BE EXERCISED

STREET	AT	4"	6"	8"	10"	12"	EXERCISED
ASH GROVE	CREEK DR	2	2	4			scheduled
ARROWHEAD TRAIL	CHEROKEE CIRCLE		1	1			scheduled
ARROWHEAD TRAIL	CHIPPEWA RIDGE			3			scheduled
ARROWHEAD TRAIL	IROQUOIS WAY			2			scheduled
ARROWHEAD TRAIL	SENECA RUN		1	1			scheduled
ARROWHEAD TRAIL	SUSQUEHANNA RD			3			scheduled
BANNOCKBURN AVE	BETHLEHEM PIKE		3				scheduled
BETHLEHEM PIKE	PENNSYLVANIA AVE	1					scheduled
BETHLEHEM PIKE	WASHINGTON LN						scheduled
BETHLEHEM PIKE	MONTGOMERY AVE		2				scheduled
BETHLEHEM PIKE	SPRING AVE (OR LA)	3	1				scheduled
BETHLEHEM PIKE	PROSPECT AVE		1				scheduled
BETHLEHEM PIKE	ELLERSLIE AVE	1					scheduled
BETHLEHEM PIKE	HARTRANFT AVE		1				scheduled
BETHLEHEM PIKE	STUART LANE		1				scheduled
BETHLEHEM PIKE	RANDOLPH AVE	1	1				scheduled
BETHLEHEM PIKE	BROOKWOOD DR		5				scheduled
BETHLEHEM PIKE	INVERNESS AVE						scheduled
BETHEHEM PIKE	HIGHLAND AVE	1	1	1			scheduled
FT WASHINGTON AVE	PENNSYLVANIA AVE		1				scheduled
FT WASHINGTON AVE	WALNUT LN						scheduled
FT WASHINGTON AVE	MONTGOMERY AVE		2				scheduled
FT WASHINGTON AVE	SPRING AVE	2		2			scheduled
FT WASHINGTON AVE	PROSPECT AVE		2	2			scheduled
FT WASHINGTON AVE	HIGHLAND AVE			3			scheduled
FT WASHINGTON AVE	THOMAS DR			1			scheduled
FT WASHINGTON AVE	LOCH ALSH AVE			6			scheduled
FT WASHINGTON AVE	HAWTHORNE LN		1			4	scheduled
FT WASHINGTON AVE	SUSQUEHANNA RD					2	scheduled

Should you need anything further, please feel free to contact me.

Regards,

Steven Smallberger

Steve Smallberger
Water Superintendent
Ambler Borough Water Department

Borough Of Ambler

131 Rosemary Avenue
AMBLER, PENNSYLVANIA 19002

PHONE 215-646-1000
FAX 215-641-1355 ADMINISTRATION
FAX 215-641-1921 WATER DEPARTMENT
WEBSITE: www.boroughofambler.com

February 24, 2021

Joseph Bresnan, Esq.
Bresnan Law Offices
100 Springhouse Drive, Suite 207
Collegeville, PA 19426

Dear Joe:

Pursuant to PA PUC's requirement for Ambler Borough Water Department to replace two valves in our distribution system annually, as well as continue the procedure of exercising valves in the distribution system, please be advised that the following emergency and scheduled valve replacements or insertions were made during calendar year 2020:

2020 VALVE REPLACEMENTS

Marion & Knight Rds (scheduled - new valve)
Valve: New
Size: 8 inch
Date: June 2020
Muncipality: Lower Gwynedd Township

Francis & Knight Rds (scheduled - new valve)
Valve: New
Size: 8 inch
Date: June 2020
Municipality: Lower Gwynedd Township

N. Spring Garden & Houston Rds (emergency)
Valve: Insertion
Size: 4 inch
Date: November 2020
Municipality: Lower Gwynedd Township

Pen Ambler & Foulke Rds (emergency)
Valve: Insertion
Size: 6 inch
Date: November 2020
Municipality: Lower Gwynedd Township

Brookside & N Spring Garden (emergency)
Valve: Replacement
Size: 6 inch
Date: November 2020
Municipality: Lower Gwynedd Township

Marion & Houston Rd (emergency)
Valve: Insertion
Size: 6 inch
Date: November 2020
Municipality: Lower Gwynedd Township

The following valves were exercised by the Ambler Borough Water Department in 2020 in our distribution system:

STREET	AT	4"	6"	8"	10"	12"	EXERCISED
WALKER ROAD			1				9-8-2020
VICTOR LANE	NASH DRIVE			1			8-18-2020
NASH DRIVE	KENYON DRIVE			1			8-18-2020
MARION AVENUE	NORMA ROAD		1				9-8-2020
KNIGHT ROAD	FRANCIS AVENUE		1				9-8-2020
MT. PLEASANT AVENUE	HENDRICKS STREET		1				9-8-2020
SPRING AVENUE	FT. WASHINGTON AVENUE			1			1-2-2020
SPRING AVENUE	SUMMIT AVENUE			1			1-2-2020
FT. WASHINGTON AVENUE	PROSPECT AVENUE		1				5-29-2020
FT. WASHINGTON AVENUE	SPRING AVENUE		1				5-28-2020
HOOVER ROAD	KNIGHT ROAD		1				7-11-2020
SUMMIT AVENUE	PROSPECT AVENUE			1			7-8-2020
MADISON AVENUE	SPRING AVENUE			1			1-26-2020
HOUSTON ROAD	KNIGHT ROAD	1					7-11-2020
HOUSTON ROAD	MARION AVENUE	1					7-11-2020

Ambler Borough Water Department is hereby providing notification, as required by the PA PUC reporting date of March 1, 2021 regarding scheduled valve replacements and valve exercising schedules for 2021.

2021 VALVE REPLACEMENTS

Location: Butler Ave & Prophecy Creek
Valve: Insertion
Size: 10 inch
Date: completed 2/2021
Municipality: Ambler Borough

Location: Butler Pike & Chestnut Ave
Valve: Insertion
Size: 10 inch
Date: completed 2/2021
Municipality: Ambler Borough

Location: Race St. & N. Ridge Ave.
Valve: Insertion
Size: 4 inch
Date: Scheduled for 2021
Municipality: Ambler Borough

Location: Knight Rd. & Houston Rd.
Valve: Insertion
Size: 8 inch
Date: Scheduled for 2021
Municipality:Lower Gwynedd Township

Finally, Ambler Borough Water Department intends to schedule, mark and exercise valves in 2021 as follows:

STREET	AT	4"	6"	8"	10"	12"	EXERCISED
Bethlehem Pike	Mt. Pleasant Ave.		3				scheduled
Euclid Ave.	Park Ave.	3					scheduled
Euclid Ave.	North St.	4					scheduled
Mt. Pleasant Ave.	Railroad Ave.	1					scheduled
Mt. Pleasant Ave.	N. Spring Garden St.	4					scheduled
Mt. Pleasant Ave.	N. Ridge Ave.	1					scheduled
Mt. Pleasant Ave.	Pleasant Acres Dr.		1				scheduled
Mt. Pleasant Ave.	Reiffs Mill Rd.	3					scheduled
Mt. Pleasant Ave.	Overlook Rd.		1				scheduled
Arbor Lane	Tennis Ave.		3				scheduled
Clair Martin Place	Rose Valley Way	2					scheduled
Highland Ave.	Villa Dr.		2	2			scheduled
Highland Ave.	Van Sant Lane		2	1			scheduled
Inverness Ave.	S.E. Turnaround		2				scheduled
Meissen Court	Rose Valley Way	2		1			scheduled
Quinard Court	Rose Valley Way	1		1			scheduled
Rose Valley Way	S.E. Turnaround	1		2			scheduled
Willowmere Ln.	Willow Ave.	1		3			scheduled
Alter Estate	Private Street			3			scheduled
Butler Pike	Hampton Lane			3			scheduled

Should you need anything further, please feel free to contact me.

Regards,

Steve Smallberger
Water Superintendent
Ambler Borough Water Department

Borough
Of
Ambler

131 Rosemary Avenue
AMBLER, PENNSYLVANIA 19002

PHONE 215-646-1000
FAX 215-641-1355 ADMINISTRATION
FAX 215-641-1921 WATER DEPARTMENT
WEBSITE: www.boroughofambler.com

February 20, 2020

Joseph Bresnan, Esq.
Dischell, Bartle & Dooley, P.C.
224 King Street
Pottstown, PA 19464

Dear Joe:

Pursuant to PA PUC's requirement for Ambler Borough Water Department to replace two valves in our distribution system annually, as well as continue the procedure of exercising valves in the distribution system, please be advised that the following emergency and scheduled valve replacements or insertions were made during calendar year 2019:

2019 VALVE REPLACEMENTS

Lindenwold Terrace & Ardross Ave (scheduled)
Valve: Replacement
Size: 12 inch
Date: September, 2019
Muncipality: Upper Dublin Township

Skippack Pk & Joshua Lane (scheduled)
Valve: Insertion
Size: 10 inch
Date: August, 2019
Municipality: Whitemarsh Township

Militia Hill & Skippack Pike (emergency)
Valve: Insertion
Size: 10 inch
Date: July, 2019
Municipality: Whitemarsh Township

Skippack Pike & Dorsam Way (emergency)
Valve: Insertion
Size: 10 inch
Date: August, 2019
Municipality: Whitemarsh Township

Militia Hill & Skippack Pike (emergency)
Valve: Insertion
Size: 8 inch
Date: August, 2019
Municipality: Whitemarsh Township

The following valves were exercised by the Ambler Borough Water Department in 2019 in our distribution system:

STREET	AT	4"	6"	8"	10"	12"	EXERCISED
Lower Gwynedd Township							
ALENE RD	JUDIE LN		1	2			12-2-2019
ALENE RD	JUDIE LN		2	2			12-3-2019
BETHLEHEM PIKE	SHEBLE LN			1			12-2-2019
BETHLEHEM PIKE	SPRINGWOOD LN		2	1			12-3-2019
BETHLEHEM PIKE	LOCUST LN		1	1			12-4-2019
DAGER RD	KYLE LN			2			12-4-2019
DAVIS RD	HAYS LN		1	2			12-3-2019
DAVIS RD	JUDIE LN			3			12-3-2019
HAMILTON RD	JUDIE LN		1	1			12-3-2019
LOCUST LN	LOCUST LN	2	2	1			12-4-2019
LOCUST LN	POPLAR CT			3			12-4-2019
Upper Dublin Township							
CEDAR RD	FOREST CREEK DR	1		2			12-2-2019
HADDON PL	WALLACE DR		2	1			12-2-2019
HAZLEWOOD DR	VICTOR LN			4			12-4-2019
HAZLEWOOD DR	DONNA DR		3				12-4-2019
HIGHLAND AVE	SUMMIT AVE		1	1			12-2-2019
HIGHLAND AVE	MADISON AVE		1	2			12-3-2019
HIGHLAND AVE	STEVENS DR			2			12-3-2019
HIGHLAND AVE	HARTRANFT AVE			2			12-3-2019
KENYON DR	THOMAS DR			3			12-4-2019

Ambler Borough Water Department is hereby providing notification, as required by the PA PUC reporting date of March 1, 2020, regarding scheduled valve replacements and valve exercising schedules for 2020.

Location: Skippack Pike & Butler Ave
Valve: Insertion
Size: 12 inch
Date: Scheduled for 2020
Municipality: Whitemarsh Township

Location: Butler Ave & Maple Ave
Valve: Insertion
Size: 10 inch
Date: Scheduled for 2020
Municipality: Ambler Borough

Location: Butler Pike & Chestnut Ave
Valve: Insertion
Size: 4 inch
Date: Scheduled for 2020
Municipality: Ambler Borough

Location: Bethlehem Pike & Church Rd
Valve: Insertion
Size: 6 inch
Date: Scheduled for 2020
Municipality: Upper Dublin Township

Finally, Ambler Borough Water Department intends to schedule, mark and exercise valves in 2020 as follows:

STREET	AT	4"	6"	8"	10"	12"	EXERCISED
Ambler Borough							
Bethlehem Pike	Mt. Pleasant Ave.		3				scheduled
Euclid Ave.	Park Ave.	3					scheduled
Euclid Ave.	North St.	4					scheduled
Mt. Pleasant Ave.	Railroad Ave.	1					scheduled
Mt. Pleasant Ave.	N. Spring Garden St.	4					scheduled
Mt. Pleasant Ave.	N. Ridge Ave.	1					scheduled
Mt. Pleasant Ave.	Pleasant Acres Dr.		1				scheduled
Mt. Pleasant Ave.	Reiffs Mill Rd.	3					scheduled
Mt. Pleasant Ave.	Overlook Rd.		1				scheduled
Upper Dublin Township							
Arbor Lane	Tennis Ave.		3				scheduled
Clair Martin Place	Rose Valley Way	2					scheduled
Highland Ave.	Villa Dr.		2	2			scheduled
Highland Ave.	Van Sant Lane		2	1			scheduled
Inverness Ave.	S.E. Turnaround		2				scheduled
Meissen Court	Rose Valley Way	2		1			scheduled
Quinard Court	Rose Valley Way	1		1			scheduled
Rose Valley Way	S.E. Turnaround	1		2			scheduled
Willowmere Ln.	Willow Ave.	1		3			scheduled
Whitemarsh Township							
Alter Estate	Private Street			3			scheduled
Butler Pike	Hampton Lane			3			scheduled

Should you need anything further, please feel free to contact me.

Regards,

Philip Benigno

Philip Benigno
Water Supervisor
Ambler Borough Water Department

Borough Of Ambler

131 Rosemary Avenue
AMBLER, PENNSYLVANIA 19002

PHONE 215-646-1000
FAX 215-641-1355 ADMINISTRATION
FAX 215-641-1921 WATER DEPARTMENT
WEBSITE: www.boroughofambler.com

February 1, 2019

Joseph Bresnan, Esq.
Dischell, Bartle & Dooley, P.C.
224 King Street
Pottstown, PA 19464

Dear Joe:

Pursuant to PA PUC's requirement for Ambler Borough Water Department to replace two valves in our distribution system annually, as well as continue the procedure of exercising valves in the distribution system, please be advised that the following emergency and scheduled valve replacements or insertions were made during calendar year 2018:

2018 VALVE REPLACEMENTS

Highland Ave & Park Ave (scheduled)
Valve: Insertion
Size: 6 inch
Date: 9/15/18
Muncipality: Ambler Borough

Alene Rd & Bethlehem Pk (scheduled)
Valve: Replacement
Size: 8 inch
Date: 5/2/18
Municipality: Lower Gwynedd Township

Morris Rd & Betsy Ln (emergency)
Valve: Replacement
Size: 8 inch
Date: 1/24/18
Municipality: Whitpain Township

Park Ave & Lindenwold Ave (emergency)
Valve: Insertion
Size: 4 inch
Date: 7-7-18
Municipality: Ambler Borough

Ridge Ave & Race St (emergency)
Valve: Insertion
Size: 4 inch
Date: 4/26/18
Municipality: Ambler Borough

Ridge Ave & Forest Ave (emergency)
Valve: Insertion
Size: 4 inch
Date: 6/14/18
Municipality: Ambler Borough

The following valves were exercised by the Ambler Borough Water Department in 2018 in our distribution system:

STREET	AT	4"	6"	8"	10"	12"	EXERCISED
Whitemarsh Township							
DORSAM WAY	SKIPPACK PIKE			2	1		5-17-18
DORSAM WAY	BRANCH ALTER ESTATE			1			5-17-18
DORSAM WAY	AT TURNAROUND	1					5-17-18
HAMPTON LANE	S.E. TO TURNAROUND	5					6-7-18
Whitpain Township							
GRAYSTONE RD	HOGAN LN		1				5-14-18
GRAYSTONE RD	JEFRON LN		3				5-17-18
GRAYSTONE RD	GORDON RD		2				5-14-18
GRAYSTONE RD	PADDOCK RD		3				5-14-18
Upper Dublin Township							
ALBERT RD	AT DEAD END		2				5-7-18
ALBERT RD	VAN SANT LN		3				5-7-18
BELLAIRE RD	VILLA DR			2			5-7-18
MELISSA DR	SHADY PLACE			4			5-4-18
MELISSA DR	THELMA LN		3				5-7-18
MELISSA DR	WINDSOR PL			4			3-16-18
MELISSA DR	VAN SANT LN		3				5-10-18
MELISSA DR	FARM LN			3			3-16-18
HIGHLAND AVE	BELLAIRE RD			3			5-7-18
Ambler Borough							
DOC'S COURT	MT PLEASANT AVE	1	1				6-7-18
DANIEL DR	MT PLEASANT AVE	1	2				6-7-18
PLEASANT ACRE DR	MT PLEASANT AVE	1	2				6-7-18

Ambler Borough Water Department is hereby providing notification, as required by the PA PUC reporting date of March 1, 2019, regarding scheduled valve replacements and valve exercising schedules for 2019.

Lindenwold Ter & Ardross Ave (scheduled)
Valve: Replacement
Size: 12 inch
Date: Scheduled for 2019
Muncipality: Upper Dublin Township

Skippack Pk & Butler Ave (scheduled)
Valve: Insertion
Size: 12 inch
Date: Scheduled for 2019
Municipality: Whitemarsh Township

Skippack Pk & Joshua Ln (scheduled)
Valve: Insertion
Size: 12 inch
Date: Scheduled for 2019
Municipality: Whitemarsh Township

Penn Ambler Rd & Houston Rd (scheduled)
Valve: Insertion
Size: 4 inch
Date: Scheduled for 2019
Municipality: Lower Gwynedd Township

Finally, Ambler Borough Water Department intends to schedule, mark and exercise valves in 2019 as follows:

STREET	AT	4"	6"	8"	10"	12"	EXERCISED
Lower Gwynedd Township							
ALENE RD	JUDIE LN		1	2			scheduled
ALENE RD	JUDIE LN		2	2			scheduled
BETHLEHEM PIKE	SHEBLE LN			1			scheduled
BETHLEHEM PIKE	SPRINGWOOD LN		2	3			scheduled
BETHLEHEM PIKE	LOCUST LN		1	1			scheduled
DAGER RD	KYLE LN			2			scheduled
DAVIS RD	HAYS LN		1	2			scheduled
DAVIS RD	JUDIE LN			3			scheduled
DAVIS RD	MARIE RD			1			Scheduled
HAMILTON RD	JUDIE LN		2	2			scheduled
LOCUST LN	LOCUST LN	2	2	1			scheduled
LOCUST LN	POPLAR CT			3			scheduled
Upper Dublin Township							
CEDAR RD	FOREST CREEK DR	1		2			scheduled
CLAIR MARTIN PL	ROSE VALLEY WAY	2					scheduled
HADDON PL	WALLACE DR		2	1			scheduled
HAZLEWOOD DR	VICTOR LN			4			scheduled
HAZLEWOOD DR	DONNA DR		3				scheduled
HIGHLAND AVE	SUMMIT AVE		1	1			scheduled
HIGHLAND AVE	MADISON AVE		1	2			scheduled
HIGHLAND AVE	STEVENS DR			3			scheduled
HIGHLAND AVE	HARTRANFT AVE			3			scheduled
KENYON DR	THOMAS DR			4			scheduled

Should you need anything further, please feel free to contact me.

Regards,

Philip Benigno
Water Supervisor
Ambler Borough Water Department

Borough Of Ambler

131 Rosemary Avenue
AMBLER, PENNSYLVANIA 19002

PHONE 215-646-1000
FAX 215-641-1355 ADMINISTRATION
FAX 215-641-1921 WATER DEPARTMENT
WEBSITE: www.boroughofambler.com

February 23, 2018

Joseph Bresnan, Esq.
Dischell, Bartle & Dooley, P.C.
224 King Street
Pottstown, PA 19464

Dear Joe:

Pursuant to PA PUC's requirement for Ambler Borough Water Department to replace two valves in our distribution system annually, as well as continue the procedure of exercising valves in the distribution system, please be advised that the following emergency and scheduled valve replacements or insertions were made during calendar year 2017:

2017 VALVE REPLACEMENTS

Bethlehem Pk & Forest Ave (emergency)
Valve: Insertion
Size: 6 inch
Date 3/6/17
Municipality: Ambler Borough

Belmont Ave & Ridge Ave. (emergency)
Valve: Replacement
Size: 4 inch
Date 11/9/17
Municipality: Ambler Borough

Woodland Ave @ Bethlehem Pk (scheduled)
Valve: Replacement
Size: 4 inch
Date: 3/30/17
Municipality: Ambler Borough

Lafayette Ave & Bethlehem Pk (scheduled)
Valve: Replacement
Size: 6 inch
Date: 11/15/17
Municipality: Whitemarsh Township

Chestnut Street & Center Street (emergency)
Valve: Replacement
Size: 4 inch
Date 11/2/17
Municipality: Ambler Borough

The following valves were exercised by the Ambler Borough Water Department in 2017 in Whitpain Township:

Street Intersection Roster & Valve Inventory – WHITPAIN TOWNSHIP

STREET	AT	VALVES					MARKED & EXERCISED
		4"	6"	8"	10"	12"	
BATLESON RD	BETSY LANE			1			October 2017
BATLESON RD	BETSY LANE		1	2			October 2017
BATLESON RD	ALDRIN		1	2			October 2017
BATLESON RD	COLLINS PLACE		1	2			October 2017
BATLESON RD	MT PLEASANT AVE			1			October 2017
BETSY LANE	MERCER HILL RD		2				November 2017
BETSY LANE	GILLIN RD		1				November 2017
BETSY LANE	MORRIS RD		1	1			November 2017
BROOKFIELD LN	HOGAN LN			3			November 2017
GILLIN RD	MERCER HILL RD		3				November 2017
HOGAN LANE	RIDINGS LN		1	1			November 2017
RIDINGS WAY	RIDINGS WAY			2			November 2017
RIDINGS WAY	WOLF LANE			2			November 2017
SPLITRAIL LN	HEDGEROW CT	1		4			November 2017

Ambler Borough Water Department is hereby providing notification, as required by the PA PUC reporting date of March 1, 2018, regarding scheduled valve replacements and valve exercising schedules for 2018.

2018 SCHEDULED VALVE REPLACEMENTS

Morris Rd & Betsy Ln (emergency)
Valve: Replacement
Size: 8 inch
Date: 1/24/18
Municipality: Whitpain Township

Lindenwold Ter & Ardross Ave (scheduled)
Valve: Replacement
Size: 12 inch
Date: Scheduled for 2018
Municipality: Upper Dublin Township

Highland Ave & Park Ave (scheduled)
Valve: Insertion
Size: 6 inch
Date: Scheduled for 2018
Muncipality: Ambler Borough

Alene Rd & Bethlehem Pk (scheduled)
Valve: Replacement
Size: 8 inch
Date: Scheduled for 2018
Municipality: Lower Gwynedd Township

Ridge Ave & Race St (scheduled)
Valve: Replacement
Size: 2 @ 4 inch
Date: Scheduled for 2018
Municipality: Ambler Borough

Finally, Ambler Borough Water Department intends to schedule, mark and exercise valves in 2018 as follows:

2018 VALVE EXERCISING SCHEDULE

STREET	AT	VALVES				
		4"	6"	8"	10"	12"
Whitemarsh Township						
DORSAM WAY	SKIPPACK PIKE			2	1	
DORSAM WAY	BRANCH ALTER EST			1		
DORSAM WAY	AT TURNAROUND	1				
HAMPTON LANE	S.E. TO TURNAROUND	2				
Whitpain Township						
GRAYSTONE RD	HOGAN LN		1			
GRAYSTONE RD	JEFRON LN		3			
GRAYSTONE RD	GORDON RD		2			
GRAYSTONE RD	PADDOCK RD		3			
Upper Dublin Township						
ALBERT RD	AT DEAD END		2			
ALBERT RD	VAN SANT LN		3			
BELLAIRE RD	VILLA DR			2		
MELISSA DR	SHADY PLACE			4		
MELISSA DR	THELMA LN		3			
MELISSA DR	WINDSOR PLACE			4		
MELISSA DR	VAN SANT LN		3			
MELISSA DR	FARM LN			3		
Ambler Borough						
DOC'S COURT	MT. PLEASANT AVE	1	1			
DANIEL DRIVE	MT. PLEASANT AVE	1	2			
PLEASANT ACRE DR	MT PLEASANT AVE	1	2			

Should you need anything further, please feel free to contact me.

Regards,

Philip Benigno
Water Supervisor
Ambler Borough Water Dept.

Borough Of Ambler

131 ROSEMARY AVENUE
AMBLER, PENNSYLVANIA 19002

PHONE 215-646-1000
FAX 215-641-1355 ADMINISTRATION
FAX 215-641-1921 WATER DEPARTMENT
WEBSITE: www.boroughofambler.com

February 1, 2017

Joseph Bresnan, Esq.
Dischell, Bartle & Dooley, P.C.
1800 Pennbrook Parkway, #200
Lansdale, PA 19446

Dear Joe:

Pursuant to the requirement of the PA PUC for Ambler Borough Water Department to replace two valves in our distribution system during the calendar year 2016, please be advised that **four *emergency valve replacements*** were made this past year. Due to these efforts, we have deferred previously-listed scheduled valve replacements until 2017. The following four valves were replaced in 2016:

Butler Avenue at Lindenwold
Insertion Valve
Size: 10 inch
Date: 5/5/16
Municipality: Ambler Borough

Cavendish Drive at E. Butler Avenue
Resilient Gate Valve
Size: 6 inch
Date: 8/31/16
Municipality: Upper Dublin Township

N. Maple Street at W. Butler Avenue
Insertion Valve
Size: 4 inch
Date: 9/26/16
Municipality: Ambler Borough

Alene Road at cul-de-sac
Resilient Gate Valve
Size: 6 inch
Date: 10/12/16
Municipality – Lower Gwynedd

Additionally, please be advised valves were exercised in 2016 in the following franchise areas:

VALVE EXERCISING SCHEDULE – COMPLETED 2016

INTER SECTION	STREET	AT	VALVES					STATUS
			4"	6"	8"	10"	12"	
2	ALGONQUIN PASS	ARROWHEAD TRAIL		1				Marked & exercised 7-27-16
3	ALGONQUIN PASS	SEMINOLE GARDENS		2				Marked & exercised7-27-16
15	ASH GROVE	CREEK DRIVE	2	1	4			Marked & exerised 11-16-16; 11-21-16
16	ARROWHEAD TRAIL	CHEROKEE CIRCLE		1	1			Marked & exercised 7-28-16
17	ARROWHEAD TRAIL	CHIPPEWA RIDGE			3			Marked & exercised 8-5-16
18	ARROWHEAD TRAIL	IROQUOIS WAY			2			Marked & exercised 10-21-16
19	ARROWHEAD TRAIL	SENECA RUN		1	1			Marked & exercised 8-5-16
20	ARROWHEAD TRAIL	SUSQUEHANNA RD			3			Marked & exercised 8-29-16
72	CREEK DR	HIGHLAND AVE			3			Marked & exercised 11-28-16
73	CREEK DR	RED MAPLE GROVE			3			Marked & exercised 10-26-16; 11-18-16
74	CREEK DR	BASSWOOD GROVE	1	1	2			Marked & exercised 11-14-16; 11-16-16
75	CREEK DR	BLACKHAWK LN	1		2			Marked & exercised 11-17-16
76	CREEK DR	SPICEBUSH LN	0					No valves
77	CREEK DR	FT WASHINGTON AVE			3			Must be marked & exercised
78	CREEK DR	TUPELO GROVE	2	3	2			Marked & exercised 11-2-16; 11-14-16
114	IROQUOIS WAY	TENNIS AVE		1	4			Marked & exercised 10-3-16;11-16-16;11-9-16

Ambler Borough Water Department is hereby providing notification, as required by the PUC reporting date of March 1, 2017, to the PUC, regarding scheduled valve replacements and valve exercise schedules for 2017.

- VALVE REPLACEMENT: *Coordinate with PENNDOT Bethlehem Pike Paving Project*
  Location: **Alene Road (at Bethlehem Pike)**
  Municipality: **Lower Gwynedd Township**
  Valve Size: **8 - inch replacement valve**

- VALVE REPLACEMENT: *Coordinate with PENNDOT Bethlehem Pike Paving Project*
  Location: **Woodland Avenue (at Bethlehem Pike)**
  Municipality: **Ambler Borough**
  Valve Size: **4 - inch replacement valve**

- VALVE REPLACEMENT:
  Location: **Lindenwold Terrace (at Butler Avenue)**
  Municipality: **Ambler Borough**
  Valve Size: **10-inch replacement valve**

- VALVE REPLACEMENT:
  Location: **Lindenwold Terrace (at Ardross Avenue)**
  Municipality: **Upper Dublin Township**
  Valve Size: **12-inch replacement valve**

Finally, valves will be scheduled to be marked and exercised in 2017 as follows:

VALVE EXERCISING SCHEDULE – 2017

INTERSECTION	STREET	AT	VALVES				
			4"	6"	8"	10"	12"
3	BATLESON RD	BETSY LANE		1	2		
4	BATLESON RD	MORRIS RD			1		
5	BATLESON RD	COLLINS PLACE		1	2		
6	BATLESON RD	MT PLEASANT AVE			1		
7	BETSY LANE	MERCER HILL RD		1	3		
8	BETSY LANE	GILLIN RD		1	2		
9	BETSY LANE	MORRIS RD		1	2		
10	BROOKFIELD LN	HOGAN LN		3			
20	HOGAN LANE	RIDINGS LN		2	1		
31	RIDINGS WAY	RIDINGS WAY		1	2		
32	RIDINGS WAY	WOLF LANE		1	3		
33	SPLITRAIL LANE	HEDGEROW COURT	1		5		

Should you need anything further, please feel free to contact me.

Regards,

Philip Benigno

Philip Benigno
Water Supervisor
Ambler Borough Water Dept.

Isolation Valves Replaced and Exercised per the Ambler Borough's response to TUS-20

	Number Replaced			Number Exercised - Total System					
Year	Jurisdictional	Borough	Totals	4"	6"	8"	10"	12"	Totals
2016	2	2	4	6	11	33			50
2017	1	4	5	1	11	21			33
2018	2	4	6	9	25	19	1		54
2019	5	0	5	3	17	36			56
2020	6	0	6	2	7	6			15
2021	8	3	11	21	11	13			45
2022	1	1	2	11	26	29	0	6	72
Totals	25	14	39	53	108	157	1	6	325
Average/Year	3.6	2.0	5.6						46.4
5-Year Running Totals									
2016-2020	16	10		21	71	115	1	0	208
2017-2021	22	11		36	71	95	1	0	203
2018-2022	22	8		46	86	103	1	6	242

NOTE: Numbers for 2022 are Proposed

Docket No. R-2022-3031704
Borough of Ambler Supplement No. 40 to Tariff Water – Pa. P.U.C. No. 5

Responses to OCA Data Requests, Set II

OCA-II-17 How many public fire hydrants are located within the Borough?

Response:

There are 305 public fire hydrants located within the Borough.

Response Provided by: **Mary Aversa, Borough Manager**
Ambler Borough

Connie Heppenstall
Gannett Fleming Valuation and Rate Consultants, LLC

Date: June 15, 2022

Docket No. R-2022-3031704
Borough of Ambler Supplement No. 40 to Tariff Water – Pa. P.U.C. No. 5

Responses to OCA Data Requests, Set II

OCA-II-18 How many public fire hydrants are located within that part of the distribution system serving jurisdictional customers?

Response:

There are 214 public hydrants located outside the Borough that serve jurisdictional customers.

Response Provided by: **Connie Heppenstall**
Gannett Fleming Valuation and Rate Consultants, LLC.

Date: June 15, 2022

Docket No. R-2022-3031704
Borough of Ambler Supplement No. 40 to Tariff Water – Pa. P.U.C. No. 5

Responses to OCA Data Requests, Set II

OCA-II-19 How many public fire hydrants inside the Borough have a fire flow of less than 500 gallons per minute at 20 pounds per square inch?

Response:

The Borough has not performed a recent hydraulic study and does not have this data available.

Response Provided by: **Mary Aversa, Borough Manager**
Ambler Borough

Date: June 15, 2022

Docket No. R-2022-3031704
Borough of Ambler Supplement No. 40 to Tariff Water – Pa. P.U.C. No. 5

Responses to OCA Data Requests, Set II

OCA-II-20 How many public fire hydrants in that part of the distribution system serving jurisdictional customers have a fire flow of less than 500 gallons per minute at 20 pounds per square inch?

Response:

See Response to OCA Set II, No.19.

Response Provided by: **Mary Aversa, Borough Manager**
Ambler Borough

Date: June 15, 2022

Docket No. R-2022-3031704
Borough of Ambler Supplement No. 40 to Tariff Water – Pa. P.U.C. No. 5

Responses to OCA Data Requests, Set II

OCA-II-21 How many public fire hydrants inside the Borough are connected to a water main of less than 6-inches in diameter?

Response:

There are 38 public fire hydrants located within the Borough that are connected to a water main of less than 6-inches in diameter.

Response Provided by: **Mary Aversa, Borough Manager**
Ambler Borough

Date: June 15, 2022

Docket No. R-2022-3031704
Borough of Ambler Supplement No. 40 to Tariff Water – Pa. P.U.C. No. 5

Responses to OCA Data Requests, Set II

OCA-II-22 How many public fire hydrants in that part of the distribution system serving jurisdictional customers are connected to a water main of less than 6-inches in diameter?

Response:

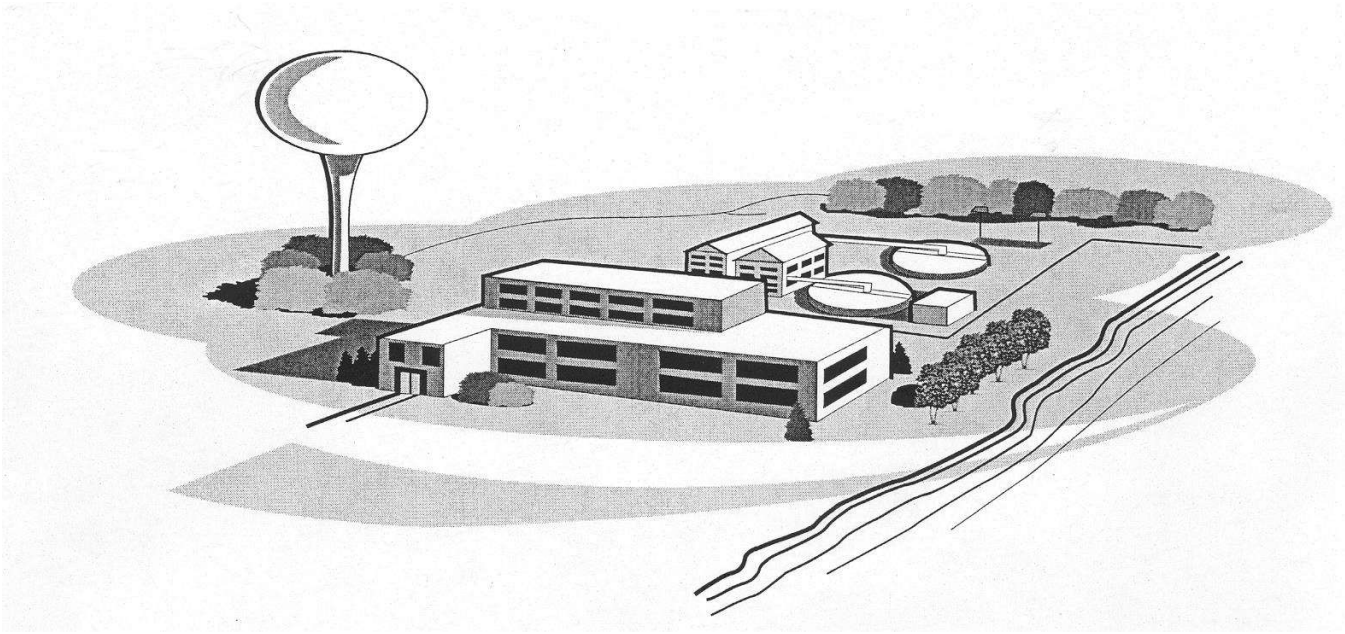
There are 56 public fire hydrants located outside of the Borough limits connected to a water main of less than 6-inches in diameter.

Response Provided by: **Mary Aversa, Borough Manager**
Ambler Borough

Date: June 15, 2022

Public Water Supply Manual

383-2125-108



PART II
COMMUNITY SYSTEM DESIGN STANDARDS

COMMONWEALTH OF PENNSYLVANIA
Department of Environmental Protection
For more information, visit DEP's Web site
at www.depweb.state.pa.us/, Keyword: "Drinking Water."

conditions of flow. The normal working pressure in the distribution system should be approximately 60 psig.

2. Diameter

The minimum size of water main which provides for fire protection and serving fire hydrants shall be 6-inch diameter. Larger sized mains will be required if necessary to allow the withdrawal of the required fire flow while maintaining the minimum residual pressure of 20 psig.

The minimum size of water main in the distribution system where fire protection is not to be provided should be a minimum of 3-inch diameter. Any departure from minimum requirements shall be justified by hydraulic analysis and future water use, and can be considered only in special circumstances.

3. Fire Protection

When fire protection is to be provided, system design should be such that fire flows and facilities are in accordance with the requirements of the State Insurance Services Office.

4. Dead Ends

Dead ends shall be minimized by looping all mains whenever practical. Where dead end lines are necessary in the first stage of construction of a distribution system, the lines shall be provided with the appropriate flushing devices as outlined in Section VIII.B.5.

5. Flushing

Where dead end mains occur, they shall be provided with an approved blow-off or flushing hydrant for flushing purposes. Flushing devices should be sized to provide flows which will give a velocity of at least 2.5 feet per second in the water main being flushed. Fire hydrants may be used for this purpose provided they comply with all of DEP's requirements on fire hydrant installation. No flushing device shall be directly connected to any sewer.

C. Shut-Off Valves

A sufficient number of valves shall be provided on water mains to minimize inconvenience and sanitary hazards will be minimized during repairs. Valves should be located at not more than 500 foot intervals in commercial districts and at not more than one block or 800 foot intervals in other areas of the distribution system.

D. Hydrants

Where freezing temperatures prevail, hydrants of the dry barrel type are preferred. Hydrants of this type should comply with the criteria set forth in AWWA's Standard

Primary Facility Report for AMBLER BORO WATER DEPT (19418)
REPORT FOR CALENDAR YEAR JAN 1 TO DEC 31, 2019

Client: AMBLER BORO MONTGOMERY CNTY

PRIMARY FACILITY NAME AND MAILING ADDRESS

Name and Address: BOROUGH OF AMBLER
131 ROSEMARY AVE
AMBLER, PA 19002-4416
Contact Information: PHILIP RUSSEL BENIGNO
WATER SUPERVISOR
Phone: 215-646-1000 Ext.124
Fax: 215-641-1921
Facility e-mail: PBENIGNO@BOROUGH.AMBLER.PA.US

PEAK DAY WATER USE FOR REPORT YEAR 2019

Date: 07/20/2019 (mm/dd/yyyy)
Gallons Per Day: 2,032,414

MINIMUM DAY WATER USE FOR REPORT YEAR 2019

Date: 01/03/2019 (mm/dd/yyyy)
Gallons Per Day: 1,361,615

POPULATION SERVED

Population Served: 20,000

AVERAGE DAILY WATER USE

Type	Metered Connections		Unmetered Connections	
	Number	Water Use (GPD)	Number	Water Use (GPD)
Domestic	5,580	834,769	0	0
Commercial	267	123,908	0	0
Industrial	22	30,232	0	0
Institutional	22	51,613	0	0
Bulk Sales to other PWS	0	0	0	0
Oil and Gas	0	0	0	0
Other	1	200,246	0	0
Water Losses				190,980
Total	5,892	1,240,768	0	190,980

Explain 'Other' Connections: Flushing and Backwashing Filter Plant

BREAKDOWN OF WATER LOSSES FOR THE SYSTEM

Type	Water Use (GPD)
Apparent Losses	No Information reported.
Real Losses	No Information reported.

PRESENT NUMBER OF CONNECTIONS SERVED

Municipality Name	Present Number of Connections						% Pop Served	Multiple Unit Connections	
	Dom	Comm	Ind	Inst	Oil Gas	Other		No. Conn	No. Units
AMBLER BORO (MONTGOMERY)	1944	172	13	5	0	0	100	290	120

PRESENT NUMBER OF CONNECTIONS SERVED

Municipality Name	Present Number of Connections						% Pop Served	Multiple Unit Connections	
	Dom	Comm	Ind	Inst	Oil Gas	Other		No. Conn	No. Units
LOWER GWYNEDD TWP (MONTGOMERY)	575	23	3	7	0	0	14.25	18	82
UPPER DUBLIN TWP (MONTGOMERY)	2184	32	3	6	0	0	35	10	201
WHITEMARSH TWP (MONTGOMERY)	222	10	0	4	0	1	12	4	12
WHITPAIN TWP (MONTGOMERY)	655	30	3	0	0	0	6	4	12
TOTAL	5580	267	22	22	0	1		326	427

METERING, WATER CONSERVATION AND DISTRIBUTION SYSTEM

What is the average age of existing meters?	17 Years
Are you currently installing meters at new connections?	YES
Are you currently installing meters at unmetered connections?	YES
Is there an active meter replacement program for your water system?	YES
How many meters did you replace during the report year?	125
Did you provide water conservation information to your customers during the report year?	YES
What is the type, size (inches), and length of new pipe installed as an extension to your present system during the report year?	
What is the frequency of flushing the distribution system during the past year?	1
Did you work your hydrants during the report year?	YES
Did you work the valves in the system during the report year?	NO
Does your system have an active leak detection program?	YES
What type of equipment or methods do you use for leak detection?	
Aquascope ,Sonoscope,and contractor Does Entire System Once a Year	
Does your system have a cross-connection control program?	YES
Has the water pressure been inadequate in any part of the system?	NO
If yes, explain	
Service Area Boundary Map: The box contains the date of the latest submitted service area boundary map for your system. If this date is older than 5 years, blank, or there has been a change in the area since then, please use the online service area boundary mapping tool to review and submit a current map. (See Instructions)	01/01/2003
Describe major system changes such as purchases and transfers:	
None	

REPORT CONTACT INFORMATION

Report Preparer:

PHILIP BENIGNO
AMBLER BORO WATER DEPT
131 ROSEMARY AVE
AMBLER, PA 19002-4476
Phone: 215-646-1000
Email

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Primary Facility Report for AMBLER BORO WATER DEPT (19418)
REPORT FOR CALENDAR YEAR JAN 1 TO DEC 31, 2020

Client: AMBLER BORO MONTGOMERY CNTY

PRIMARY FACILITY NAME AND MAILING ADDRESS

Name and Address: BOROUGH OF AMBLER
131 ROSEMARY AVE
AMBLER, PA 19002-4416

Contact Information: STEVEN PAUL SMALLBERGER
WATER SUPERVISOR

Phone: 215-646-1000 Ext.124

Fax: 215-641-1921

Facility e-mail: SSMALLBERGER@BOROUGH.AMBLER.PA.US

PEAK DAY WATER USE FOR REPORT YEAR 2020

Date: 06/04/2020 (mm/dd/yyyy)

Gallons Per Day: 1,874,944

MINIMUM DAY WATER USE FOR REPORT YEAR 2020

Date: 10/31/2020 (mm/dd/yyyy)

Gallons Per Day: 1,205,177

POPULATION SERVED

Population Served: 20,000

AVERAGE DAILY WATER USE

Type	Metered Connections		Unmetered Connections	
	Number	Water Use (GPD)	Number	Water Use (GPD)
Domestic	5,469	808,512	0	0
Commercial	253	93,943	0	0
Industrial	18	26,344	0	0
Institutional	20	24,726	0	0
Bulk Sales to other PWS	0	0	0	0
Oil and Gas	0	0	0	0
Other	1	279,572	0	0
Water Losses				270,679
Total	5,761	1,233,097	0	270,679

Explain 'Other' Connections: Flushing and Backwashing filter plant

BREAKDOWN OF WATER LOSSES FOR THE SYSTEM

Type	Water Use (GPD)
Apparent Losses	No Information reported.
Real Losses	No Information reported.

PRESENT NUMBER OF CONNECTIONS SERVED

Municipality Name	Present Number of Connections						% Pop Served	Multiple Unit Connections	
	Dom	Comm	Ind	Inst	Oil Gas	Other		No. Conn	No. Units
AMBLER BORO (MONTGOMERY)	1941	165	11	4	0	0	36.49	18	429

PRESENT NUMBER OF CONNECTIONS SERVED

Municipality Name	Present Number of Connections						% Pop Served	Multiple Unit Connections	
	Dom	Comm	Ind	Inst	Oil Gas	Other		No. Conn	No. Units
LOWER GWYNEDD TWP (MONTGOMERY)	581	20	2	5	0	0	10.59	15	106
UPPER DUBLIN TWP (MONTGOMERY)	2074	30	3	7	0	0	36.9	11	270
WHITEMARSH TWP (MONTGOMERY)	219	10	0	4	0	1	4.2	12	27
WHITPAIN TWP (MONTGOMERY)	654	28	2	0	0	0	11.82	56	831
TOTAL	5469	253	18	20	0	1		112	1663

METERING, WATER CONSERVATION AND DISTRIBUTION SYSTEM

What is the average age of existing meters?	18 Years
Are you currently installing meters at new connections?	YES
Are you currently installing meters at unmetered connections?	NO
Is there an active meter replacement program for your water system?	YES
How many meters did you replace during the report year?	154
Did you provide water conservation information to your customers during the report year?	YES
What is the type, size (inches), and length of new pipe installed as an extension to your present system during the report year?	
What is the frequency of flushing the distribution system during the past year?	0
Did you work your hydrants during the report year?	YES
Did you work the valves in the system during the report year?	YES
Does your system have an active leak detection program?	YES
What type of equipment or methods do you use for leak detection?	
Aquascope, Sonoscope, contractor listens to whole system once a year	
Does your system have a cross-connection control program?	NO
Has the water pressure been inadequate in any part of the system?	NO
If yes, explain	
Service Area Boundary Map: The box contains the date of the latest submitted service area boundary map for your system. If this date is older than 5 years, blank, or there has been a change in the area since then, please use the online service area boundary mapping tool to review and submit a current map. (See Instructions)	01/01/2003
Describe major system changes such as purchases and transfers:	

REPORT CONTACT INFORMATION

Report Preparer:

STEVEN PAUL SMALLBERGER
BOROUGH OF AMBLER
131 ROSEMARY AVE.
AMBLER, PA 19002
Phone: 215-646-1000 Ext. 124
Fax: 215-641-1921
Email

Primary Facility Report for AMBLER BORO WATER DEPT (19418)
REPORT FOR CALENDAR YEAR JAN 1 TO DEC 31, 2021

Client: AMBLER BORO MONTGOMERY CNTY

PRIMARY FACILITY NAME AND MAILING ADDRESS

Name and Address:	BOROUGH OF AMBLER
	131 ROSEMARY AVE
	AMBLER, PA 19002-4416
Contact Information:	STEVEN PAUL SMALLBERGER
	WATER SUPERVISOR
Phone:	215-646-1000 Ext.124
Fax:	215-641-1921
Facility e-mail:	SSMALLBERGER@BOROUGH.AMBLER.PA.US

PEAK DAY WATER USE FOR REPORT YEAR 2021

Date:	04/20/2021 (mm/dd/yyyy)
Gallons Per Day:	2,125,544

MINIMUM DAY WATER USE FOR REPORT YEAR 2021

Date:	12/12/2021 (mm/dd/yyyy)
Gallons Per Day:	1,116,124

POPULATION SERVED

Population Served:	20,000

AVERAGE DAILY WATER USE

Type	Metered Connections		Unmetered Connections	
	Number	Water Use (GPD)	Number	Water Use (GPD)
Domestic	5,501	990,427	0	0
Commercial	260	131,402	0	0
Industrial	16	35,493	0	0
Institutional	18	40,997	0	0
Bulk Sales to other PWS	0	0	0	0
Oil and Gas	0	0	0	0
Other	1	9,654	0	0
Water Losses				224,367
Total	5,796	1,207,973	0	224,367

Explain 'Other' Connections: Flushing to waste at startup along with backwash water for filter plant at Whitemarsh facility.

BREAKDOWN OF WATER LOSSES FOR THE SYSTEM

Type	Water Use (GPD)
Apparent Losses	No Information reported.
Real Losses	No Information reported.

PRESENT NUMBER OF CONNECTIONS SERVED

Municipality Name	Present Number of Connections						% Pop Served	Multiple Unit Connections	
	Dom	Comm	Ind	Inst	Oil Gas	Other		No. Conn	No. Units
AMBLER BORO	1946	170	9	5	0	0	36.41	18	429

PRESENT NUMBER OF CONNECTIONS SERVED

Municipality Name	Present Number of Connections						% Pop Served	Multiple Unit Connections	
	Dom	Comm	Ind	Inst	Oil Gas	Other		No. Conn	No. Units
(MONTGOMERY)									
LOWER GWYNEDD TWP (MONTGOMERY)	578	21	2	5	0	0	10.49	15	106
UPPER DUBLIN TWP (MONTGOMERY)	2102	31	3	4	0	0	37.16	11	270
WHITEMARSH TWP (MONTGOMERY)	219	10	0	4	0	1	4.17	12	27
WHITPAIN TWP (MONTGOMERY)	656	28	2	0	0	0	11.78	56	831
TOTAL	5501	260	16	18	0	1		112	1663

METERING, WATER CONSERVATION AND DISTRIBUTION SYSTEM

What is the average age of existing meters?	19 Years
Are you currently installing meters at new connections?	YES
Are you currently installing meters at unmetered connections?	NO
Is there an active meter replacement program for your water system?	YES
How many meters did you replace during the report year?	226
Did you provide water conservation information to your customers during the report year?	YES
What is the type, size (inches), and length of new pipe installed as an extension to your present system during the report year?	
What is the frequency of flushing the distribution system during the past year?	2
Did you work your hydrants during the report year?	YES
Did you work the valves in the system during the report year?	YES
Does your system have an active leak detection program?	YES
What type of equipment or methods do you use for leak detection?	
Sonocope, Aquascope, Contractor listens to the whole system once a year	
Does your system have a cross-connection control program?	NO
Has the water pressure been inadequate in any part of the system?	NO
If yes, explain	
Service Area Boundary Map: The box contains the date of the latest submitted service area boundary map for your system. If this date is older than 5 years, blank, or there has been a change in the area since then, please use the online service area boundary mapping tool to review and submit a current map. (See Instructions)	01/01/2003
Describe major system changes such as purchases and transfers:	

REPORT CONTACT INFORMATION

Report Preparer:

STEVEN PAUL SMALLBERGER
WATER SUPERINTENDENT
BOROUGH OF AMBLER
131 ROSEMARY AVE.
AMBLER, PA 19002
Phone: 215-646-1000 Ext. 124

Docket No. R-2022-3031704
Borough of Ambler Supplement No. 40 to Tariff Water – Pa. P.U.C. No. 5

Responses to TUS Data Request – Set 1

TUS-21. The Commission's December 2014 Order, Ordering Paragraph No. 9 affirmed that Ambler will comply with the pressure survey requirements contained in 52 Pa. Code § 65.6. Please provide a copy of Ambler's 2021 pressure survey.

Response: See Attachment TUS-21

Response Provided by: Mary Aversa, Borough Manager

Date: April 25, 2022

No.	Street Name	Location	Municipality	Owner	Model/Year	Gal/Minute [15 min.]	Time Opened	Total Gallons Flowed	Drained?	Static	Static Flowing	Ring	Date
48	MAPLE ST	AT OAK ST	WHITPAIN	PUBLIC	K/1980								
50	OAK ST	AT RAILROAD AVE	WHITPAIN	PUBLIC	K/1996								
90	MAPLE ST	NEAR MT PLEASANT AVE	WHITPAIN	PUBLIC	K/2013	349	1:55 PM	6,980	NO, PUMPED, checked OK	80	X	Y	12/3/2021
102	RAILROAD AVE	BET MT PLEASANT & MATHERS	WHITPAIN	PUBLIC	K/1981								
134	W BUTLER PK	GREYSTONE APTS FRONT	WHITPAIN	PRIVATE	K/1990	604	9:25 PM	9,060	NO, PUMPED, checked OK	44	X	Y	10/18/2021
159	MEADE RD	BET SKIPPACK PK/WHITPAIN DR	WHITPAIN	PUBLIC	K/2021	349	11:10 AM	5,235	Y	42	X	Y	10/13/2021
168	WHITPAIN DR	AT W BUTLER PK	WHITPAIN	PUBLIC	M/1950	325	10:40 AM	4,875	Y	42	X	Y	10/13/2021
169	MEADE RD	AT W BUTLER PK	WHITPAIN	PUBLIC	K/2008	349	12:30 PM	5,235	Y	42	X	Y	10/13/2021
170	MEADE RD	BET W BUTLER & WHITPAIN DR	WHITPAIN	PUBLIC	M/1950	349	1:00 PM	5,235	Y	40	X	Y	10/13/2021
179	BETSY LN	AT GILLIN RD	WHITPAIN	PUBLIC	K/2003								
180	MORRIS RD	BET BETSY & MERCER HILL	WHITPAIN	PUBLIC	K/2002	604	10:00 AM	9,060	Y	60	X	Y	10/21/2021
185	MAPLE ST	BET RESERVOIR & OAK	WHITPAIN	PUBLIC	K/1998								
186	PADDOCK RD	MIDDLE OF BLOCK	WHITPAIN	PUBLIC	M/2007	1,107	11:32 AM	16,605	Y	46	X	Y	10/15/2021
188	BETSY LN	AT BATLESON RD	WHITPAIN	PUBLIC	M/1954								
189	GREYSTONE RD	AT HOGAN LN	WHITPAIN	PUBLIC	M/1954	1,121	10:45 AM	16,815	NO, PUMPED, checked OK	45	X	Y	10/15/2021

190	JEFRON DR	AT PADDOCK RD	WHITPAIN	PUBLIC	M/1954	349	11:00 AM	5,235	Y	45	X	Y	10/15/2021
191	GILLIN RD	AT MERCER HILL RD	WHITPAIN	PUBLIC	M/1954								
192	MT PLEASANT AVE	BET MORRIS & BATLESON	WHITPAIN	PUBLIC	M/1950	325	11:00 AM	4,875	Y	40	X	Y	10/21/2021
193	MT PLEASANT AVE	BET BATLESON & BRIDGE	WHITPAIN	PUBLIC	K/1986	604	12:45 PM	9,060	Y	50	X	Y	10/21/2021
195	MERCER HILL RD	BET MORRIS & GILLIN	WHITPAIN	PUBLIC	M/1954								
196	MORRIS RD	BET MT PLEASANT & BETSY	WHITPAIN	PUBLIC	M/1954	325	10:35 AM	4,875	Y	40	X	Y	10/21/2021
207	MERCER HILL RD	BET TOP & BOTTOM OF BETSY	WHITPAIN	PUBLIC	M/1955								
219	DETWEILER LN	AT GORDON RD	WHITPAIN	PUBLIC	K/2001	780	2:20 PM	11,700	Y	66	X	Y	10/15/2021
220	GREYSTONE RD	AT GORDON RD	WHITPAIN	PUBLIC	K/2008	750	1:00 PM	11,250	Y	60	X	Y	10/15/2021
246	RAILROAD AVE	BET OAK & MT PLEASANT	WHITPAIN	PUBLIC	M/1961								
253	RAILROAD AVE	NEAR MATHERS RD	WHITPAIN	PRIVATE	M/1963								
280	BATLESON RD	AT ALDRIN DR	WHITPAIN	PUBLIC	M/1973								
281	BATLESON RD	AT COLLINS PLACE	WHITPAIN	PUBLIC	M/1973								
282	BATLESON RD	AT MORRIS RD	WHITPAIN	PUBLIC	M/1973								
292	ALDRIN DR	MIDDLE OF BLOCK	WHITPAIN	PUBLIC	K/1977								
322	RIDINGS WAY	AT HOGAN LN LEFT SIDE	WHITPAIN	PUBLIC	K/1985	604	2:25 PM	9,060	Y	46	X	Y	10/13/2021
323	RIDINGS WAY	AT HOGAN LN RIGHT SIDE	WHITPAIN	PUBLIC	K/2015	493	1:50 PM	7,395	Y	44	X	Y	10/13/2021
324	RIDINGS WAY	BET WOLF & HOGAN	WHITPAIN	PUBLIC	K/1985	604	2:50 PM	9,060	Y	42	X	Y	10/13/2021
325	RIDINGS WAY	AT WOLF LN	WHITPAIN	PUBLIC	K/1985	604	9:10 AM	9,060	Y	44	X	Y	10/15/2021
326	RIDINGS WAY	AT FOXFIELD CT	WHITPAIN	PUBLIC	K/1985	604	9:40 AM	9,060	Y	44	X	Y	10/15/2021
327	RIDINGS WAY	NEAR W BUTLER PK	WHITPAIN	PUBLIC	K/1985	493	1:25 PM	7,395	Y	42	X	Y	10/13/2021
328	HOGAN LN	AT BROOKFIELD LN	WHITPAIN	PUBLIC	K/1987	604	10:15 AM	9,060	Y	62	X	Y	10/15/2021

333	W BUTLER PK	AT SPLITRAIL LN	WHITPAIN	PUBLIC	K/1988	425	11:11 AM	6,375	Y	36	X	Y	10/7/2021
334	HEDGEROW CT	AT SPLITRAIL LN	WHITPAIN	PUBLIC	K/1988	325	10:24 AM	4,875	Y	44	X	Y	10/7/2021
335	SKIPPACK PK	BET MEADE & IVY	WHITPAIN	PUBLIC	K/1988	425	11:45	6,375	Y	38	X	Y	10/7/2021
336	RAILROAD AVE	AT TENNIS AVE & RR BRIDGE	WHITPAIN	PUBLIC	K/1985								

No.	Street Name	Location	Municipality	Owner	Model/Year	Gal/Minute [15 min.]	Time Opened	Total Gallons Flowed	Drained?	Static	Static Flowing	Ring	Date
45	BETHLEHEM PIKE	BET TRAIN BRIDGE & PA AVE	WHITEMARSH	PUBLIC	MULL/2004	493	1:00 PM	7,395	Y	50	X	Y	10/20/2021
80	W BUTLER PK	AT NORRISTOWN RD	WHITEMARSH	PUBLIC	K/2002	325	2:30 PM	4,875	Y	30	X	Y	10/6/2021
117	W BUTLER PK	AT HORSE STABLE ENTRANCE	WHITEMARSH	PUBLIC	MULL/2000	325	10:10 AM	4,875	Y	38	X	Y	10/13/2021
118	W BUTLER PK	AT SKIPPACK PK NEAR TANK	WHITEMARSH	PUBLIC	M/NO DATE	325	1:08 AM	4,875	Y	30	X	Y	10/7/2021
119	SKIPPACK PK	BET DORSAM WAY & BUTLER PK	WHITEMARSH	PUBLIC	K/NO DATE	325	1:45 PM	4,875	NO PUMPED, PUMPED OUT	32	X	Y	10/7/2021
121	SKIPPACK PK	BET SHEAFF & JOSHUA	WHITEMARSH	PUBLIC	M/1994	325	9:15 AM	4,875	Y	32	X	Y	10/12/2021
122	SKIPPACK PK	AT JOSHUA RD	WHITEMARSH	PUBLIC	K/1995	449	11:30 AM	6,735	Y	60	X	Y	10/8/2021
129	W BUTLER PK	BET SPLITRAIL & WHITPAIN FARMS	WHITEMARSH	PUBLIC	K/1978	375	2:50 PM	5,625	Y	32	X	Y	10/6/2021
133	LAFAYETTE AVE	FRONT-NORTHWESTERN HOSPITAL	WHITEMARSH	PUBLIC	K/2000	493	2:29 PM	7,395	Y	86	X	Y	10/19/2021
153	SKIPPACK PK	BET SHEAFF & ALTER EST	WHITEMARSH	PUBLIC	K/1999	604	2:20 PM	9,060	No-pumped.Replaced inner parts 2-22	62	X	Y	10/7/2021
199	MORRIS RD	AT WILLOW RD	WHITEMARSH	PUBLIC	K/1989	698	2:18 PM	10,470	Y	70	X	Y	10/18/2021
200	SPRUCE RD	AT WILLOW RD	WHITEMARSH	PUBLIC	M/1954	493	2:15 PM	7,395	Y	60	X	N	10/18/2021

Exhibit TLF-7

201	BEECH RD	AT SPRUCE RD	WHITEMARSH	PUBLIC	K/2020	493	1:40 PM	7,395	Y	66	X	Y	10/18/2021
226	MILITIA HILL RD	AT TOLAND DR	WHITEMARSH	PUBLIC	M/NO DATE	325	12:50 PM	4,875	Y	80	X	Y	10/12/2021
227	TOLAND DR	MIDDLE OF BLOCK	WHITEMARSH	PUBLIC	M/1958	349	11:40 AM	5,235	Y	72	X	Y	10/12/2021
228	TOLAND DR	AT JOSHUA RD	WHITEMARSH	PUBLIC	K/1989	349	10:50 AM	5,235	Y	74	X	Y	10/12/2021
240	G.A. PROPERTY (1)	INSIDE GA IN BACK AT CUL DE SAC	WHITEMARSH	PRIVATE	K/NO DATE	493	12:40 PM	7,395	Y	46	X	Y	10/18/2021
242	MORRIS RD	AT MILL SPRING RD	WHITEMARSH	PUBLIC	M/1961	493	9:35 AM	7,395	Y	36	X	N	10/19/2021
243	MORRIS RD	AT SHEAFF LN	WHITEMARSH	PUBLIC	M/1961	493	9:15 AM	7,395	NO PUMPED, PUMPED OUT	35	X	N	10/19/2021
244	MORRIS RD	AT GA TENNIS COURTS	WHITEMARSH	PUBLIC	K/1982	780	10:10 AM	11,700	Y	60	X	Y	10/19/2021
245	MORRIS RD	AT GA FRONT ENTRANCE	WHITEMARSH	PUBLIC	K/2007	698	1:20 PM	10,470	Y	60	X	Y	10/19/2021
247	CAREY DR	AT W BUTLER PK	WHITEMARSH	PUBLIC	M/1962	449	10:45 AM	6,735	Y	46	X	N	10/18/2021
248	JOSHUA RD	AT PA TURNPIKE BRIDGE	WHITEMARSH	PUBLIC	M/1962	349	1:30 PM	5,235	Y	74	X	Y	10/12/2021
256	MILITIA WAY	AT CUL DE SAC	WHITEMARSH	PUBLIC	M/1968	349	1:55 PM	5,235	Y	70	X	Y	10/12/2021
260	SHEAFF LN	AT WHITEMARSH VALLEY RD	WHITEMARSH	PUBLIC	K/1986	650	12:40 PM	9,750	Y	62	X	Y	10/8/2021
261	WHITEMARSH VALLEY I	AT CUL DE SAC	WHITEMARSH	PUBLIC	K/1990	857	1:24 PM	12,855	Y	88	X	Y	10/8/2021
268	WILLIAMS RD	AT SHEAFF LN	WHITEMARSH	PUBLIC	M/1967	495	2:10 PM	7,425	NO, PUMPED, checked OK	55	X	Y	10/8/2021
269	WILLIAMS RD	AT CUL DE SAC	WHITEMARSH	PUBLIC	M/1967	974	2:40 PM	14,610	Y	70	X	Y	10/8/2021
285	W BUTLER PK	AT AXEWOOD WEST	WHITEMARSH	PRIVATE	M/1973	325	9:15 AM	4,875	Y	40	X	Y	10/13/2021
287	SYCAMORE LN	AT CUL DE SAC	WHITEMARSH	PUBLIC	K/1999	493	12:45 PM	7,395	Y	50	X	Y	10/18/2021
288	LAFAYETTE AVE	NORTHWESTERN HOSP AT LEFT	WHITEMARSH	PRIVATE	MULL/1973	325	10:45 AM	7,395	Y	40	X	Y	10/20/2021

289	LAFAYETTE AVE	NORTHWESTERN HOSP AT RIGHT	WHITEMARSH	PRIVATE	MULL/1973	325	11:20 AM	7,395	Y	40	X	Y	10/20/2021
299	WOODCOCK LN	AT MILL SPRING RD	WHITEMARSH	PUBLIC	K/1978	493	12:20 PM	7,395	Y	44	X	Y	10/18/2021
347	DORSAM WAY	AT SKIPPACK PIKE	WHITEMARSH	PRIVATE	K/1992	325	9:40 AM	4,875	NO, PUMPED, checked OK	32	X	Y	10/8/2021
348	DORSAM WAY	AT CUL DE SAC	WHITEMARSH	PRIVATE	K/1992	325	9:10 AM	4,875	Y	32	X	Y	10/8/2021
349	SKIPPACK PK	ALTER ESTATE FRONT OF HOUSE	WHITEMARSH	PRIVATE	K/1996	325	9:25 AM	4,875	Y	22	X	Y	10/20/2021
351	SHAEFF LN	BET WILLIAMS & CREEK	WHITEMARSH	PUBLIC	K/1992	650	9:40 AM	9,750	Y	34	X	Y	10/12/2021
352	SHAEFF LN	BET CREEK & WOODCOCK	WHITEMARSH	PUBLIC	K/1992	OESN'T EXIS	?		?	?	?	?	?
356	SKIPPACK PK	ALTER ESTATE BACK OF HOUSE	WHITEMARSH	PRIVATE	K/1992	493	9:55 AM	7,395	Y	28	X	Y	10/20/2021
357	HAMPTON LN	AT W BUTLER PK	WHITEMARSH	PUBLIC	K/1996	325	1:50 PM	4,875	Y	44	X	Y	10/6/2021
358	HAMPTON LN	AT MIDDLE OF BLOCK	WHITEMARSH	PUBLIC	K/1996	325	1:10 PM	4,875	NO, PUMPED, checked OK	44	X	Y	10/6/2021
367	MORRIS RD - G.A.	GA IN FRONT OF ARTS CENTER	WHITEMARSH	PRIVATE	K/1996	425	10:35 AM	6,375	Y	62	X	Y	10/1/2021
368	MORRIS RD - G.A.	GA ARTS CENTER PARKING LOT	WHITEMARSH	PRIVATE	K/1996	425	11:00 AM	6,375	Y	62	X	Y	10/1/2021
385	G.A. PROPERTY (2)	GA IN BACK AT CUL-DE-SAC	WHITEMARSH	PRIVATE	2015:K/81 5 1/4	425	AA:25 AM	6,375	Y	46	X	Y	10/1/2021
387	LAFAYETTE AVE	AT ACROSS FROM 7151	WHITEMARSH	PUBLIC	K/2017	425	2:15 PM	6,375	Y	40	X	Y	10/20/2021

No.	Street Name	Location	Municipality	Owner	Model/Year	Gal/Minute [15 min.]	Time Opened	Total Gallons Flowed	Drained?	Static	Static Flowing	Ring	Date
41	JOHN'S LN	AT KENILWORTH LN	LG	PUBLIC	M/NO DATE		Per Frank old hydrant / no hose hooked						11/2/2021
51	FRANCIS AVE	AT N SPRING GARDEN ST	LG	PUBLIC	K/2002	349	10:25 AM	5,235	Y	32	x	Y	11/8/2021
62	FOULKE RD	BET PENN AMBLER & KNIGHT	LG	PUBLIC	M/1996		Couldn't flush. Had a flow gauge on it.						11/5/2021
65	W FRANCIS AVE	AT N SPRING GARDEN ST	LG	PUBLIC	K/1986		Couldn't flush. Had a flow gauge on it.						11/8/2021

87	HOUSTON RD	AT PENN AMBLER RD	LG	PUBLIC	M/1898	493	1:40 PM	7,395	Y	40	X	Y	11/5/2021
94	HOOVER RD	NEAR KNIGHT RD	LG	PUBLIC	K/1974	780	1112 AM	11,700	Y	75	X	Y	11/5/2021
104	E TENNIS AVE	NEAR BETHLEHEM PIKE	LG	PUBLIC	K/1984	250 est.	10:30 AM	3,750	NO, PUMPED, checked OK	72	X	X	10/29/2021
107	E TENNIS AVE	NEAR SUSQUEHANNA RD	LG	PUBLIC	K/2008	250 est.	9:20 AM	3,750	NO, PUMPED, checked OK	72	X	X	10/29/2021
145	HOUSTON RD	AT MARION AVE	LG	PUBLIC	M/NO DATE	349	1:00 PM	5,235	Y	65	X	Y	11/5/2021
175	HOOVER RD	AT PENN AMBLER RD	LG	PUBLIC	M/1950	780	11:40 AM	11,700	Y	70	X	Y	11/5/2021
178	NORMA RD	AT MARION AVE	LG	PUBLIC	M/1950	493	10:25 AM	7,395	Y	46	X	Y	11/5/2021
203	FRANCIS AVE	NEAR KNIGHT RD	LG	PUBLIC	M/1955	Only winterized. Too many cars too close to hydrant.							11/8/2021
212	JUDIE LN	AT ALENE RD	LG	PUBLIC	M/1955	349	1:25 PM	5,235	NO, PUMPED, checked OK	35	X	X	11/1/2021
213	JUDIE LN	AT HAMILTON LN	LG	PUBLIC	K/1980	604	155 PM	9,060	Y	58	X	X	11/1/2021
217	JOHN'S LN	AT SUSQUEHANNA RD	LG	PUBLIC	M/1956	604	2:20 PM	9,060	Y	54	X, ORANGE RING		11/2/2021
218	JUDIE LN	BET DAVIS & MARIE	LG	PUBLIC	K/1984	500	2:25 PM	7,500	Y	52	X	X	11/1/2021
223	ALENE RD	AT CUL DE SAC	LG	PUBLIC	K/1988	604	2:50 PM	9,060	Y	60	X	X	11/1/2021
229	DAVIS RD	BET HAYS & JUDIE	LG	PUBLIC	M/1958	250 est.	10:50 AM	3,750	Y	35	X	X	11/3/2021
230	DAVIS RD	AT MARIE RD	LG	PUBLIC	K81/2008	604	10:25 AM	9,060	Y	50	X	X	11/3/2021
238	HOUSTON RD	AT LOWER GWYNEDD ELEM	LG	PUBLIC	K/1997	698	2:00 PM	10,470	Y	78	X	X	11/4/2021
239	HOUSTON RD	NEAR WATER TANK	LG	PUBLIC	MULL/2000	750	1:00 PM	11,250	Y	62	X	X	11/4/2021
249	MONTGOMERY RD	NEAR BETHLEHEM PIKE	LG	PUBLIC	M/1963	250 est.	9:00 AM	3,750	NO, PUMPED, checked OK	35	X	X	11/3/2021

Exhibit TLF-7

250	MONTGOMERY RD	NEAR MT PLEASANT AVE	LG	PUBLIC	M/1963	250 est.	2:30 PM	3,750	NO, PUMPED, checked OK	35	X	X	11/4/2021
251	ROBERTS RD	AT CUL DE SAC	LG	PUBLIC	M/1968	349	1:55 PM	5,235	Y	35	X	X	11/3/2021
253	RAILROAD AVE	AT MATHER'S RD	LG	PUBLIC	NO NAME/DATE	349	11:45 AM	5,235	Y	40	X	Y	11/5/2021
254	BROOKSIDE AVE	AT N SPRING GARDEN ST	LG	PUBLIC	M/1963		Couldn't flush. Had a flow gauge on it.						
275	HOUSTON RD	IN MEADOWS CONDO COMPLEX	LG	PUBLIC	M/1971	604	11:20 AM	9,060	Y	34	X	X	11/3/2021
387	JOHN'S LN	AT BETHLEHEM PIKE	LG	PUBLIC	2015: K-81 5 1/	604	1:05 PM	9,060	Y	56	X	Y	11/2/2021
388	WHS SCHOOL	AT DAGER RD TURNAROUND	LG	PRIVATE	2015: K-81 5 1/	604	9:30 AM	9,060	Y	74	X	Y	11/5/2021
283	DAGER RD	AT WISSAHICKON TENNIS CTS	LG	PRIVATE	M/1978	349	11:20 AM	5,235	NO, PUMPED, checked OK	35	X	X	11/4/2021
284	DAGER RD	AT WHS BACK PARKING LOT	LG	PRIVATE	K/2003	698	11:45 AM	10,470	NO, PUMPED, checked OK	72	X	X	11/4/2021
286	HOUSTON RD	AT WMS	LG	PRIVATE	K/1989	780	1:40 PM	11,700	Y	76	X	X	11/4/2021
329	BETHLEHEM PIKE	AT MERRILL RD	LG	PUBLIC	K/1985	604	11:40 AM	9,060	Y	60	X	X	11/3/2021
330	DAVIS RD	AT CUL DE SAC	LG	PUBLIC	K/2005	349	9:35 AM	5,235	Y	42	X	X	11/3/2021
341	SPRINGWOOD LN	AT CUL DE SAC	LG	PUBLIC	K/1988	698	2:20 PM	10,470	Y	72	X	X	11/3/2021
342	KYLE LN	MIDDLE OF BLOCK	LG	PUBLIC	K/1989	604	10:25 AM	9,060	Y	76	X	X	11/4/2021
343	BETHLEHEM PIKE	AT SPRINGWOOD LN	LG	PUBLIC	NONAME/DATE	493	1:10 PM	7,395	Y	72	X	X	11/3/2021
344	DAGER RD	AT WHS BACK LOT ENTRANCE	LG	PUBLIC	K/1995	604	10:50 AM	9,060	NO, PUMPED, checked OK	76	X	X	11/4/2021
353	LOCUST ST	AT POPLAR CT	LG	PUBLIC	K/1994	349	9:20 AM	5,235	Y	70	X	X	11/4/2021
354	LOCUST ST	AT CUL DE SAC	LG	PUBLIC	K/1994	349	9:45 AM	5,235	Y	72	X	X	11/4/2021

Exhibit TLF-7

362	ARBOR LN	MIDDLE OF BLOCK	LG	PUBLIC	K/1999	604	1:55 PM	9,060	Y	60	X	X	10/29/2021
363	BETHLEHEM PIKE	BET SPRINGWOOD & ROBERTS	LG	PUBLIC	K/2001	493	1:30 PM	7,395	Y	72	X	X	11/3/2021
364	BETHLEHEM PIKE	BET ROBERTS & MERRIL	LG	PUBLIC	K/2002	698	12:40 PM	10,470	Y	60	X	X	11/3/2021
366	HOUSTON RD	WHS FRONTAGE ACROSS WMS	LG	PUBLIC	K/1992	780	1:20 PM	11,700	Y	72	X	X	11/4/2021
374	HOUSTON RD	IN ELEM SCHOOL LOT	LG	PRIVATE	K/1996	604	9:04 AM	9,060	Y	76	X	Y	11/5/2021
389	WHITEFIELD CT	AT BETHLEHEM PIKE	LG	PUBLIC	K/2018	493	2:40 PM	7,395	Y	72	X	X	11/3/2021
390	WHITEFIELD CT	AT BETHLEHEM PIKE	LG	PUBLIC	K/2018	493	3:00 PM	7,395	Y	62	X	X	11/3/2021
	BLOWOFF AT	KENILWORTH	LG			150	1:45 PM	2,250					11/2/2021
	BLOWOFF AT	MT PLEASANT & N SP GARDEN	LG			150	1120 AM	2,250					11/8/2021

No.	Street Name	Location	Municipality	Owner	Model/Year	Gal/Minute [15 min.]	Time Opened	Total Gallons Flowed	Drained?	Static	Static Flowing	Ring	Date
2	SCHIAVONE LN	AT FARM LN	UD	PUBLIC	MULL/2001	325	9:20 AM-15 MIN	4,875	Y	36	X	Y	11/17/2021
3	LOCH ALSH AVE	AT WELL NO 8	UD	PUBLIC	K/1985	325	1:40 PM-15 MIN	4,875	Y	30	X	Y	11/9/2021
8	ARDROSS AVE	AT CEDAR RD	UD	PUBLIC	K/2005	325	145 PM-15 MIN	4,875	Y	36	X	Y	10/26/2021
9	ARDROSS AVE	AT BETHLEHEM PIKE	UD	PUBLIC	K/1984	325	2:30 PM-15 MIN	4,875	Y	34	X	Y	10/26/2021
11	CEDAR RD	AT LINDENWOLD TER	UD	PUBLIC	K/1992	493	10:15 AM-15 MIN	7,395	Y	42	X	Y	11/9/2021
12	CEDAR RD	AT ARGYLE AVE	UD	PUBLIC	K/1988	325	2:25 PM-30 MIN	9,750	Y	32	X	Y	10/25/2021
14	ARGYLE AVE	AT DOUGLAS ST	UD	PUBLIC	K/1981	325	11:15 AM-15 MIN	4,875	Y	0	X	Y	11/9/2021
16	MEADOWBROOK AVE	AT DOUGLAS ST	UD	PUBLIC	K/1978	493	12:50 PM-15 MIN	7,395	Y	70	X	Y	10/26/2021
31	MADISON AVE	AT SPRING AVE	UD	PUBLIC	K/1982	349	12:35 PM-15 MIN	5,235	Y	40	X	Y	11/15/2021
45	BETHLEHEM PIKE	AT LITTLE ITALY RESTAURANT	UD	PUBLIC	M/2004	698	2:35 PM-25 MIN	17,450	Y	74	X	Y	12/2/2021
46	BANNOCKBURN AVE	AT BETHLEHEM PIKE	UD	PUBLIC	K/2001	349	2:05 PM-15 MIN	5,235	Y	78	X	Y	11/29/2021

Exhibit TLF-7

54	BETHLEHEM PIKE	BET HAGUES MILL & FOREST	UD	PUBLIC	M/1898	349	12:25 PM-20 MIN	6,980	Y	44	X	Y	12/2/2021
55	BETHLEHEM PIKE	AT WILLOW AVE	UD	PUBLIC	K-1979	349	9:40 AM-20 MIN	6,980	NO, PUMPED, checked OK	48	X	X	10/28/2021
56	WILLOW AVE	BET BETH PIKE & ROSE VALLEY	UD	PUBLIC	K/1996	698	10:30 AM-30 MIN	20,940	NO, PUMPED, checked OK	80	X	X	10/28/2021
57	WILLOW AVE	NEAR SUSQUEHANNA RD	UD	PUBLIC	K/1974	604	11:20 AM-30 MIN	18,120	NO, PUMPED, checked OK	80	X	X	10/28/2021
59	BETHLEHEM PIKE	IN FRONT OF TRINITY CHURCH	UD	PUBLIC	K/1989	493	9:00 AM-15 MIN	7,395	NO, PUMPED, checked OK	60	X	X	11/30/2021
61	CHURCH ST	AT ROSEMARY AVE	UD	PUBLIC	K/1981	493	2:00 PM-25 MIN	12,325	Y	56	X	X	12/2/2021
63	HIGHLAND AVE	AT CHURCH ST	UD	PUBLIC	K/1993	349	1:00 PM-15 MIN	5,235	NO, PUMPED, checked OK	42	X	OR	11/11/2021
70	RANDOLPH AVE	AT BELLAIRE AVE	UD	PUBLIC	K/1982	349	1:40 PM-20 MIN	6,980	Y	58	X	X	11/25/2021
71	RANDOLPH AVE	AT GLENCOE AVE	UD	PUBLIC	K/2015	349	1:15 PM-20 MIN	6,980	Y	58	X	X	11/23/2021
72	HARTRANFT AVE	AT BETHLEHEM PIKE	UD	PUBLIC	K/2003	349	11:05 AM-50 MIN	17,450	Y	66	X	Y	11/23/2021
74	MONTGOMERY AVE	AT SUMMIT AVE	UD	PUBLIC	K/2004	349	12:45 PM-15 MIN	5,235	Y	64	X	Y	11/16/2021
75	SUMMIT AVE	AT PENNSYLVANIA AVE	UD	PUBLIC	KI/1972	349	10:25 AM-15 MIN	5,235	NO, PUMPED, checked OK	52	X	Y	11/16/2021
76	SUMMIT AVE	AT PROSPECT AVE	UD	PUBLIC	KI/1972	493	2:50 PM-15 MIN	7,395	Y	50	X	Y	11/15/2021
78	MADISON AVE	AT MONTGOMERY AVE	UD	PUBLIC	K/1974	349	1:00 PM-15 MIN	5,235	NO, PUMPED, checked OK	42	X	Y	11/15/2021
81	HARTRANFT AVE	AT GLENCOE AVE	UD	PUBLIC	K/2004	349	12:45 PM-20 MIN	6,980	Y	58	X	Y	11/23/2021

82	ELLERSLIE AVE	AT AMBLER RD	UD	PUBLIC	K/1974	349	12:46 PM-15 MIN	5,235	Y	70	X	Y	11/29/2021
84	SPRING AVE	AT BETHLEHEM PIKE	UD	PUBLIC	K/2007	325	1:20 PM-20 MIN	6,500	Y	58	X	Y	11/23/2021
86	AMBLER RD	AT RANDOLPH AVE	UD	PUBLIC	K/1984	325	1:18 PM-15 MIN	4,875	Y	70	X	Y	11/29/2021
88	PROSPECT AVE	AT BELLAIRE AVE	UD	PUBLIC	K/2006	325	1:00 PM-15 MIN	4,875	O-PUMPE	40	X	Y	11/22/2021
91	CHURCH ST	BET BANNOCKBURN & SOUTHERN	UD	PUBLIC	M/1898	325	1:15 PM-20 MIN	6,500	NO, PUMPED, checked OK	40	X	N	12/3/2021
93	BANNOCKBURN AVE	BET RENFREW & TRINITY PLACE	UD	PUBLIC	K/1998	325	1:35 PM-15 MIN	4,875	NO, PUMPED, checked OK	78	X	Y	11/29/2021
95	FARM LN	AT MELISSA AVE	UD	PUBLIC	K/1981	349	2:15 PM-15 MIN	5,235	Y	42	X	Y	11/16/2021
98	RENFREW AVE	NEAR TRINITY PLACE	UD	PUBLIC	K/2006	349	1:00PM-20 MIN	6,980	Y	66	X	Y	12/2/2021
99	RENFREW AVE	NEAR BANNOCKBURN AVE	UD	PUBLIC	K/1984	349	1:25 PM-20 MIN	6,980	Y	76	X	Y	12/2/2021
100	MADISON AVE	AT 309 EXPRESSWAY BRIDGE	UD	PUBLIC	K/2004	349	9:40 AM-15 MIN	5,235	Y	34	X	Y	11/15/2021
103	MADISON AVE	AT PROSPECT AVE	UD	PUBLIC	K/2002	349	10:20 AM-15 MIN	5,235	Y	50	X	Y	11/15/2021
128	ELLIGER AVE	AT PROSPECT AVE	UD	PUBLIC	M/NO DATE	349	11:20 AM-15 MIN	5,235	Y	44	X	OR	11/22/2021
135	RANDOLPH/S MAIN S	INSIDE STEEL CO. IN BACK	UD	PRIVATE	MULL/2002	349	2:00 PM-15 MIN	5,235	Y	46	X	Y	11/25/2021
136	SPRING AVE	AT FORT WASHINGTON AVE	UD	PUBLIC	K/2006	325	10:20 AM-35 MIN	11,375	Y	38	X	Y	11/11/2021
138	ELLIGER AVE	AT SPRING AVE	UD	PUBLIC	K/1997	349	9:15 AM-15 MIN	5,235	NO, PUMPED, checked OK	58	X	Y	11/23/2021
139	ELLIGER AVE	AT MONTGOMERY AVE	UD	PUBLIC	K/2005	493	9:45 AM-30 MIN	14,790	NO, PUMPED, checked OK	70	X	X	11/23/2021
141	MORRIS RD	BET BUTLER & MERCER HILL	UD	PUBLIC	K/2003	1000	9:30 AM-15 MIN	15,000	Y	60	X	Y	10/21/2021
142	WASHINGTON LN	AT MONTGOMERY AVE	UD	PUBLIC	K/2005	325	2:40 PM-15 MIN	4,875	Y	38	X	Y	11/22/2021

143	BUTLER AVE	AT MEADOWBROOK AVE	UD	PUBLIC	K/2009	698	1:55 PM-15 MIN	10,470	Y	82	X	Y	10/27/2021
144	LOCUST RD	AT SPRING AVE	UD	PUBLIC	K/1985	***	10:40 AM-SHUT		NO, PUMPED, checked OK	50			11/23/2021
159	LOCH ALSH AVE	IN FRONT OF HIGH SCHOOL	UD		K81/2009	349	10:55 AM-15 MIN	5,235	Y	30	X	Y	11/10/2021
161	SUMMIT AVE	NEAR HIGHLAND AVE	UD	PUBLIC	M/1941	349	2:10 PM-15 MIN	5,235	Y	50	X	OR	11/15/2021
162	SUMMIT AVE	AT 309 EXPRESSWAY BRIDGE	UD	PUBLIC	M/1950	349	2:30 PM-15 MIN	5,235	Y	52	X	OR	11/15/2021
163	HARTRANFT AVE	NEAR MADISON AVE	UD	PUBLIC	M/1949	349	11:00 AM-20 MIN	6,980	NO, PUMPED, checked OK	48	X	OR	11/16/2021
164	HARTRANFT AVE	NEAR HIGHLAND AVE	UD	PUBLIC	K/2006	349	11:30 AM-20 MIN	6,980	Y	48	X	Y	11/16/2021
167	WASHINGTON LN	AT HARTRANFT AVE	UD	PUBLIC	M/1950	349	2:00 PM-15 MIN	5,235	NO, PUMPED, checked OK	42	X	OR	11/27/2021
174	HAGUES MILL RD	MIDDLE OF BLOCK	UD	PUBLIC	K/1978	493	10:10 AM-45 MIN	22,185	Y	60	X	Y	10/27/2021
184	STUART LN	MIDDLE OF BLOCK	UD	PUBLIC	M/1953	425	10:40 AM-15 MIN	6,375	NO, PUMPED, PUMPED OUT	35	X	OR	11/29/2021
187	MADISON AVE	BET HARTRANFT & HIGHLAND	UD	PUBLIC	M/1954	349	9:10 AM-15 MIN	5,235	NO, PUMPED, checked OK	32	X	OR	11/15/2021
198	CAREY DR	AT MORRIS RD	UD	PUBLIC	M/1954	449	10:15 AM-15 MIN	6,735	Y	46	X	OR	10/18/2021
205	FORT WASHINGTON	AT LOCH ALSH AVE	UD	PUBLIC	K/1994	349	11:20 AM-15 MIN	5,235	NO, PUMPED, PUMPED OUT	32	X	Y	11/10/2021
206	FORT WASHINGTON	AT HIGHLAND, FRONT OF SCHOOL	UD	PUBLIC	M/1955	349	2:20 PM-15 MIN	5,235	Y	32	X	OR	11/10/2021
222	LEWIS LN	NEXT TO WELL NO 6	UD	PUBLIC	M/1957								

231	FORT WASHINGTON	AT 309 EXPRESSWAY BRIDGE	UD	PUBLIC	UNKNOWN	325	1:00 PM-30 MIN	9,750	NO, PUMPED, checked OK	32	X	OR	11/10/2021
232	BOOTH LN	AT CEDAR	UD	PUBLIC	K/1989	493	9:05 AM-15 MIN	7,395	Y	30	X	Y	10/26/2021
233	HOFFMAN RD	AT HEATHER RD	UD	PUBLIC	M/1959	493	11:00 AM-40 MIN	19,720	Y	42	X	OR	10/25/2021
234	HIGHLAND AVE	AT BETHLEHEM PIKE	UD	PUBLIC	M/1959	349	1:20 PM-15 MIN	5,235	Y	40	X	OR	11/11/2021
235	HOFFMAN RD	NEAR LOCH ALSH AVE	UD	PUBLIC	M/1956	349	10:15 AM-15 MIN	5,235	Y	30	X	OR	10/25/2021
236	HOFFMAN RD	AT CEDAR RD	UD	PUBLIC	M/1959	425	1:15 AM-15 MIN	6,375	Y	42	X	OR	10/25/2021
237	LOCH ALSH AVE	REAR UDHS PARKING LOT	UD	PRIVATE	MULL/2000								
241	WALLACE DR	AT STEVENS DR	UD	PUBLIC	KI/1961								
259	KENYON DR	AT THOMAS DR	UD	PUBLIC	KI/1965								
264	VICTOR DR	AT NASH DR	UD	PUBLIC	KI/1964								
265	HAWTHORNE DR	AT FORT WASHINGTON AVE	UD	PUBLIC	K/2006								
266	HAWTHORNE DR	AT TRESSLER DR	UD	PUBLIC	KI/1966								
267	DONNA DR	AT CUL DE SAC	UD	PUBLIC	K/2013								
270	SUMMIT AVE	FRONT-FT WASH FIREHOUSE	UD	PUBLIC	K/1998	493	10:00 AM-15 MIN	7,395	Y	62	X	Y	11/16/2021
272	BELLAIRE AVE	AT INVERNESS AVE	UD	PUBLIC	KI/1969	425	10:15 AM-15 MIN	6,375	NO, PUMPED, PUMPED OUT	40	X	X	11/30/2021
273	HIGHLAND AVE	NEAR FARM LN	UD	PUBLIC	M/1966	349	1:45 PM-15 MIN	5,235	NO, PUMPED, checked OK	44	X	OR	11/11/2021
274	HIGHLAND AVE	AT VAN SANT LN	UD	PUBLIC	M/1969	349	2:20 PM-15 MIN	5,235	Y	42	X	OR	11/11/2021
276	FORT WASHINGTON	FRONT-CHURCH OF OPEN DOOR	UD	PUBLIC	KI/1972								
278	FORT WASHINGTON	BACK OF CHURCH AT METER PIT	UD	PRIVATE	K/1981								

Exhibit TLF-7

279	MEADOWBROOK AVE	NEAR DOUGLAS ST AT BEND	UD	PUBLIC	K/1972	698	11:24 AM-20 MIN	13,960	NO, PUMPED, checked OK	42	X	Y	10/26/2021
290	CAVENDISH DR	IN BACK OF WELL NO 14	UD	PUBLIC	K/1974	650	2:20 PM-15 MIN	9,750	Y	80			
291	CAVENDISH DR	AT HAMSTEAD DR	UD	PUBLIC	K/1974	780	2:05 PM-15 MIN	11,700	Y	60	X	Y	10/26/2021
293	MEADOWBROOK AVE	NEAR CEDAR RD	UD	PUBLIC	K/1974	604	10:25 AM-15 MIN	9,060	Y	40	X	Y	10/26/2021
294	HAGUES MILL RD	AT BUTLER PIKE	UD	PUBLIC	K/1975	493	9:00 AM-60 MIN	29,580	Y	50	X	Y	10/27/2021
298	WILLOWMERE LN	AT CUL DE SAC	UD	PUBLIC	K/1979	698	11:10 AM-40 MIN	27,920	Y	80	X		
300	ROSE VALLEY WAY	AT CLAIRE MARTIN PL	UD	PUBLIC	K/1979	698	12:55 PM-35 MIN	24,430	Y	75	X	Y	10/27/2021
301	IROQUOIS WAY	AT SHAWNEE GREEN	UD	PUBLIC	K/1979	604	2:55 PM-15 MIN	9,060	Y	68	X	X	10/28/2021
302	ARROWHEAD TRAIL	AT NAVAJO PATH	UD	PUBLIC	K/1979	493	11:00 AM-15 MIN	7,395	Y	60	X	Y	12/3/2021
303	BROOKWOOD DR	MIDDLE OF BLOCK	UD	PUBLIC	K/1995	604	2:30 PM-15 MIN	9,060	NO, PUMPED, checked OK	76	X	Y	11/29/2021
304	SENECA RUN	AT CHIPPEWA RIDGE	UD	PUBLIC	K/1980	604	10:25 AM-20 MIN	12,080	NO, PUMPED, checked OK	66	X	Y	12/3/2021
305	ALGONQUIN PASS	AT ARROWHEAD TRAIL	UD	PUBLIC	K/1980	604	2:30 PM-15 MIN	9,060	Y	70	X	X	10/28/2021
306	ARROWHEAD TRAIL	AT CHEROKEE CIRCLE	UD	PUBLIC	K/1980	604	2:05 PM-15 MIN	9,060	Y	70	X	X	10/28/2021
307	SUSQUEHANNA RD	AT ARROWHEAD TRAIL	UD	PUBLIC	K/1979	604	1:35 PM-15 MIN	9,060	Y	76	X	X	10/28/2021
310	BETHLEHEM PIKE	AT RUE CHARMILLE	UD	PUBLIC	K/1981	349	9:05 AM-30 MIN	10,470	Y	72	X	Y	11/24/2021
312	ARGYLE AVE	AT BETHLEHEM PIKE	UD	PUBLIC	K/1981	325	1:00 PM-30 MIN	9,750	Y	50	X	Y	11/9/2021
313	ASH GROVE	AT STUART CREEK DR	UD	PUBLIC	K/1983	349	9:25 AM-15 MIN	5,235	Y	52	X	Y	11/19/2021
314	RED MAPLE GROVE	AT STUART CREEK DR	UD	PUBLIC	K/1983	349	9:50 AM-15 MIN	5,235	Y	54	X	Y	11/19/2021
315	SHADY PLACE	AT MELISSA DR	UD	PUBLIC	K/1983	493	1:30 PM-15 MIN	7,395	Y	46	X	Y	11/17/2021

Exhibit TLF-7

316	MELISSA DR	AT WINDSOR PLACE	UD	PUBLIC	K/1983	493	2:35 PM-15 MIN	7,395	Y	42	X	Y	11/17/2021
317	SPICEBUSH LN	AT STUART CREEK DR	UD	PUBLIC	K/1985	325	10:15 AM-15 MIN	4,875	Y	52	X	Y	11/22/2021
318	LOCH ALSH AVE	AT FARM LN NEAR WELL NO 2	UD	PUBLIC	K/1985								
319	STUART CREEK DR	AT TUPELO GROVE	UD	PUBLIC	K/1985	325	10:40 AM-15 MIN	4,875	Y	54	X	Y	11/22/2021
331	VAN SANT LN	AT MELISSA DR	UD	PUBLIC	K/1987	349	11:40 AM-15 MIN	5,235	Y	46	X	Y	11/17/2021
332	VAN SANT LN	AT THELMA LN	UD	PUBLIC	K/1987	349	11:00 AM-15 MIN	5,235	Y	42	X	Y	11/17/2021
337	VILLA DR	AT FARM LN	UD	PUBLIC	K/1988	604	12:45 PM-15 MIN	9,060	Y	50	X	Y	11/17/2021
338	VILLA DR	AT BELLAIRE AVE	UD	PUBLIC	K/1989	604	1:10 PM-15 MIN	9,060	Y	50	X	Y	11/17/2021
339	LAKE DR	MIDDLE OF BLOCK	UD	PUBLIC	K/1992	493	2:55 PM-15 MIN	7,395	Y	48	X	Y	10/26/2021
340	LOCH ALSH AVE	AT CEDAR RD	UD	PUBLIC	K/1992	493	9:15 AM-15 MIN	7,395	Y	58	X	Y	11/9/2021
345	VAN SANT LN	AT SCHIAVONE DR	UD	PUBLIC	K/1990	349	9:47 AM-15 MIN	5,235	Y	38	X	Y	11/17/2021
346	ALBERT DR	AT VAN SANT NEAR SWIM CLUB	UD	PUBLIC	K/1990	493	2:40 PM-15 MIN	7,395	Y	50	X	Y	11/16/2021
350	PROSPECT AVE	AT MADISON NEAR CUL DE SAC	UD	PUBLIC	K/1992	493	11:05 AM-15 MIN	7,395	Y	40	X	Y	11/22/2021
355	HOFFMAN RD	AT LOCH ALSH AVE	UD	PUBLIC	K/1982	493	9:10 AM-15 MIN	7,395	Y	30	X	Y	10/25/2021
359	FOREST CREEK DR	AT CEDAR NEAR CUL DE SAC	UD	PUBLIC	K/1987	493	1:45 PM-15 MIN	7,395	Y	40	X	Y	10/25/2021
360	GENTRY LN	NEAR SUSQUEHANNA RD	UD	PUBLIC	K/1998	698	12:40 PM-20 MIN	13,960	Y	70	X	Y	10/28/2021
361	SUSQUEHANNA RD	300' LEFT OF GENTRY LN	UD	PUBLIC	K/1998	604	1:10 PM-15 MIN	9,060	Y	70	X	Y	10/28/2021
369	BASSWOOD GROVE	AT STUART CREEK DR	UD	PUBLIC	K/1985	349	10:20 AM-15 MIN	5,235	Y	54	X	Y	11/19/2021
370	LOCH ALSH AVE	AT UPPER DUBLIN LIBRARY	UD	PRIVATE	K/1991								
371	AMBLER RD	BET ELLERSLIE & ORCHARD	UD	PUBLIC	K/2006	375	9:50 AM-15 MIN	5,625	Y	68	X	Y	11/29/2021
373	LOCH ALSH AVE	AT UDHS NEAR HAWTHORNE	UD	PUBLIC	K/1985								
376	FORT WASHINGTON	AT PENNSYLVANIA AVENUE	UD	PUBLIC	K/2004	325	12:35 PM-25 MIN	8,175	Y	40	X	Y	11/11/2021

Exhibit TLF-7

379	AMBLER RD	AT BETHLEHEM PIKE	UD	PUBLIC	K/2008	493	9:08 PM-30 MIN	14,790	NO, PUMPED, checked OK	70	X	Y	11/29/2021
383	SPARKS DR	AT LOCH ALSH AVE	UD	PUBLIC	K81/2010	325	10:15 AM-15 MIN	4,875	Y	32	X	Y	11/10/2021
384	CATHERINE STREET	AT MEADOWBROOK AVE	UD	PUBLIC	K/2012	604	1:15 PM-15 MIN	9,060	Y	64	X	Y	10/26/2021
391	FT WASH AVE	AT BEHIND ELEM SCHOOL	UD	PRIVATE	K/1968	325	12:30 PM-15 MIN	4,875	Y	34	X	OR	11/10/2021

Exhibit TLF-7

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re:	Pennsylvania Public Utility Commission	:	
	v.	:	Docket No. R-2022-3031704
	Borough of Ambler – Water Department	:	

VERIFICATION

I, Terry L. Fought, hereby state that the facts set forth in my Direct Testimony, OCA Statement 2, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: July 1, 2022
*331333

Signature: _____
Terry L. Fought

Consultant Address: 780 Cardinal Drive
Harrisburg, PA 17111

OCA Statement 1SR

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	:	
v.	:	Docket No. R-2022-3031704
BOROUGH OF AMBLER – WATER	:	

SURREBUTTAL TESTIMONY

OF

MORGAN N. DEANGELO

ON BEHALF OF

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

JULY 27, 2022

Table of Contents

Introduction:

Q. Please state your name, business address and occupation.

A. My name is Morgan N. DeAngelo. My business address is 555 Walnut Street, Forum Place, 5th Floor, Harrisburg, Pennsylvania 17101. I am currently employed as a Regulatory Analyst by the Pennsylvania Office of Consumer Advocate (OCA).

Q. Have you provided testimony in this case?

A. Yes. I provided Direct Testimony in this case on July 1, 2022, in OCA Statement 1.

Q. How is your Surrebuttal Testimony organized?

A. In this testimony, I respond to The Borough of Ambler's (Borough) witnesses, Ms. Constance E. Heppenstall, Ms. Mary Aversa, and Mr. Dylan W. D'Ascendis. I also respond to the Bureau of Investigation and Enforcement's (I&E) witness, Mr. Christopher Keller. My Surrebuttal Testimony addresses the following areas: rate case normalization, rate design, rate case expense allocation, the discounted cash flow (DCF) model, the capital asset pricing model (CAPM) and the capital structure.

Q. Have you revised any schedules as part of your Surrebuttal Testimony?

A. Yes. As I explain below, there are revisions reflected in Schedules Sch. MND-1SR, Sch. MND-4SR, Sch. MND-5SR, and Sch. MND-6SR. All of the schedules that I sponsor, Sch. MND-1SR – Sch. MND-6SR, are attached to this testimony. As a result of the revisions, the OCA's recommended revenue requirement increase for outside-Borough customers is no more than $408,995 (29.12%). (Sch. MND-1SR).

Response to Ms. Constance E. Heppenstall:

Q. Please identify the issues Ms. Heppenstall discussed regarding your Direct Testimony.

A. Ms. Heppenstall discussed issues regarding my proposed rate case expense, rate case normalization and rate design.

Q. Ms. Heppenstall indicated you made a miscalculation in your Schedule MND-1s. Please respond.

A. Yes, Ms. Heppenstall indicated I had overstated my net operating income requirement by $299,520. (Borough Statement No. 1-R, p. 3, ln. 11) I have corrected this on Schedule MND-1SR to reflect these changes, including the removal of Contributions in Aid of Construction (CIAC) that Ms. Heppenstall addressed in her rebuttal on page 2. With these changes, my new net operating income requirement is $567,153. (Sch. MND-1SR).

Q. Please summarize Ms. Heppenstall's Rebuttal Testimony regarding your recommendations on Rate Design.

A. Ms. Heppenstall stated that my recommendation of eliminating the second block in the next rate case removes that lower rate in conflict with well-established cost of service principles. (Borough Statement No. 1-R, p. 6, ln.22-23) She also stated that "The Commission has recognized cost of service as the 'polestar' of public utility ratemaking. Cost of service principles acknowledge that larger customers tend to have lower peaking factors, so they should have a lower used rate to reflect that they put less stress on the water system." (Borough Statement No. 1-R, p. 6, ln. 19-22) Additionally, Ms. Heppenstall does not believe my recommendation of eliminating the second block in the next rate case is appropriate.

Q. Did the Borough perform a Cost of Service Study in this proceeding?

A. No. Without a cost of service study, Ms. Heppenstall's claims of the second block being consistent with well-established cost of service principles are unsupported. There is no evidence in this case, with these specific customers, to support her arguments against my recommendation. I recommended that, after this case ends, the Borough should conduct a study of the impact of eliminating the second block. (OCA Statement No. 1, p. 5, ln. 9-12). Ms. Heppenstall indicates that this study was already done. (Borough Statement No. 2, p. 6, ln. 13-15). Her Exhibit CEH-2R shows that the impact on the customers who receive bills in the second block, at the full revenue requirement requested in this case, would be about a 10% increase. (Borough Statement No. 2, p. 6, ln16-18). My recommendation to implement a single volumetric rate in the next proceeding is reasonable and provides time for the Borough to discuss the change in rate design with potentially impacted customers.

Q. What issues did Ms. Heppenstall identify with your Direct Testimony regarding Rate Case Normalization Period?

A. Ms. Heppenstall disagreed with my proposed 90-month normalization period. She stated that her proposed three-year normalization period is reasonable for the Borough. Ms. Heppenstall additionally stated that if the Commission declines to approve the three-year normalization period, the Commission should adopt a more moderate 60-month normalization period. (Borough Statement No. 2-R, at 4-5)

Ms. Mary Aversa

Q. Did anyone else disagree with your proposed 90-month normalization period?

A. Yes. Borough witness Ms. Mary Aversa disagreed. She argued that "only that the time elapsed since the Borough's 2015 rate case should be considered in light of the extenuating circumstances of the Borough's exploration of potentially transferring the water system to a municipal authority." (Borough Statement No. 1-R, at 2) Ms. Aversa does not believe the Commission should allow this one-time complicating factor to unreasonably extend the normalization period for the Borough's rate case expense.

Q. Do you agree with either Ms. Heppenstall or Ms. Aversa?

A. No. The rate case normalization period is not being "unreasonably extended". There is Commission precedent to utilize the average period between rate cases to determine the normalization of the rate case expense, as I have done to calculate the 90 month normalization period in this case. This method is a way to match the expense recovery over the average period of time of when cases are filed, based on historical filing frequency. There are many reasons why a utility may file or may not file rate cases. To attempt to predict what those factors may be going forward is not a reasonable way to determine the normalization period. Using historical filing frequency has been a reasonable way to use utility-specific information to determine a reasonable normalization period for rate case expense. Speculation about the timing of future filings cannot be relied on to determine the proper normalization period. Therefore, I maintain my recommendation to utilize the 90-month normalization period.

Q. Do you have any recommendations if the Commission does not accept your recommended 90-month normalization period?

A. Yes. If the Commission should reject my recommendation to use the proposed 90-month normalization period, the OCA agrees that the 77-month normalization period proposed

by I&E, and based on historical filing frequency using 3 cases compared to my use of 2 cases is reasonable. (I&E Statement No. 1, p. 8). Ms. Heppenstall's 60-month alternative is not based on historical filing frequency for the Borough and should not be adopted.

In addition, as stated in my Direct Testimony, the Borough should update its actual Rate Case Expense to date as part of its rejoinder testimony so that an accurate Rate Case Expense amount can be reflected in rates. (OCA Statement 1, p. 13, ln. 8-9).

Q. Ms. Heppenstall raised an issue regarding the Rate Case Expense allocation in your Direct Testimony. Please respond.

A. In her Rebuttal Testimony at page 6, lines 9-16, Ms. Heppenstall stated that I had allocated rate case expense to inside customers as well as outside customers. She indicated outside Borough customers' volumetric rates are higher than the inside customers' in order to recover the Rate Case Expense. As shown on the revised Schedule MND-1SR, line 13, the Rate Case Expense is being taken out of the revenue increase for the total system. The Rate Case Expense is then added back into the revenue increase, when calculating for the outside-borough system customers. I recommend there be no more than a $694,833 or 27.87% increase in revenue to the total system, with $408,995 or 29.12% allocated to the outside-borough customers. Sch. MND-1SR. As I did in my direct testimony (OCA Statement 1, p. 2, ln. 9-11), this recommendation reflects rate case expense being collected only from outside customers.

Response to Mr. Dylan W. D'Ascendis:

Q. What concerns did Mr. D'Ascendis raise about your testimony?

A. Mr. D'Ascendis points out a computation error in my Discounted Cash Flow Model at page 50 of his rebuttal testimony.

Q. Please respond the Mr. D'Ascendis' claim on your computational error.

A I have identified and corrected the computational error in Sch. MND-5SR. After doing so, my return on equity changes from 7.35% to 9.55% and with the application of the 15% tax adjustment factor changes from 6.25% to 8.12%. With this correction to the return on equity, and 15% tax adjustment factor, my new recommended Rate of Return is 5.23%. This can be found in Sch. MND-5SR.

	Percent	Cost Rate	15% Tax Adjustment Factor	Cost of Money
Long Term Debt	50.26%	2.36%		1.19%
Common Equity*	49.74%	9.55%	8.12%	4.04%
Total	100.00%			5.23%

Q. Mr. D'Ascendis also pointed out the data used is from different time periods at pages 50-51 of his rebuttal testimony. Please respond.

A. The data used in my DCF analysis has now been collected from the time period, between January 3, 2022 and April 1, 2022.

Q. Does Mr. D'Ascendis make any arguments regarding the Tax Adjustment Factor in his Rebuttal Testimony?

A. Yes. Mr. D'Ascendis stated that he does not believe there needs to be a tax adjustment factor to the Borough's indicated ROE results due to its tax-exempt status and the related

interest income tax exemption for its municipal bondholders. (Borough Statement No. 4-R, p. 7)

Q. Do you agree?

A. No. A common equity cost based upon an investor-owned water utility should be adjusted downward to reflect tax-exempt nature. In the 2016 City of Dubois rate case, the Commission approved a tax adjustment factor of 18.22%, recommended by I&E.[1] For the reasons stated above, I recommend the Commission approve a tax adjustment factor in this proceeding.

Q. What does Mr. D'Ascendis address regarding your Capital Asset Pricing Model in his Direct Testimony?

A. Mr. D'Ascendis pointed out various "flawed inputs" needed to calculate CAPM, regarding the risk-free rate, Beta calculation, the market risk premium and employing the empirical CAPM (ECAPM). (Borough Statement No. 4-R, p. 51, ln. 16-20)

Q. Have you made any adjustments to what Mr. D'Ascendis addressed?

A. Yes, I have. Using data from the same time period, between January 3, 2022 and April 1, 2022, I used the 30-year Treasury bond yield average from that time period to calculate the risk-free rate. The average from this collected data is 2.26%, compared to 3.05% in my Direct Testimony. Sch. MND-6SR.a.

[1] PaPUC v. City of DuBois – Bureau of Water (Docket No. R-2016-2554150). Final Order p. 105-111.

I have also updated my Beta calculation, using weekly adjusted Beta. Using data from the Value Line Report, my new Beta calculation is an average of 0.77. Sch. MND-6SR.b. The monthly Beta used in my Direct Testimony resulted in an average of 0.49. .

Additionally, I made adjustments to my original market risk premium. I calculated the historical market risk premium of the S&P 500 using the closing price of each year from 1977-2021. I used a geometric mean of the yearly returns of the S&P 500 to do this, with the resulting return being 11.86%. To calculate the risk-free rate of the historical CAPM I used 30-year treasury returns, and again calculated the geometric mean, leading to a 6.32% historical risk-free rate. This resulted in a historical Market Risk Premium of 5.54%.[2] I then used analyst forecasts of the Market Risk Premium for the next 10 years. I took the highest value, 6.6%, and used that as my Market Risk Premium. The results are in the table below. Sch. MND-6SR.c, p.1-4.

Duff & Phelps Report	5.5%
Schwab	6.6%
Vanguard	3.2%
Average	5.1%
Highest	6.60%

The results to my revised CAPM analysis can be found in Sch. MND-6SR and are also summarized below.

CAPM: 7.35%

[2] 11.86% - 6.32% = 5.54%

Q. Does this change to the CAPM analysis change your ROE recommendation?

A. No. I did not rely on the CAPM for my return on equity recommendation but rather used it as a check on the DCF analysis.

Q. Mr. D'Ascendis argued you did not employ an ECAPM analysis in your Direct Testimony. Please respond.

A. I did not employ an ECAPM analysis, as I do not believe that calculating ECAPM is necessary for cost of capital purposes. I agree with I&E witness, Mr. Keller's argument, that "The ECAPM attempts to correct the CAPM's inability to accurately predict the cost of capital but does so through an additional factor that corrects none of the underlying problems of the model." (I&E Statement No. 2, p. 39-40)

Response to Mr. Christopher Keller:

Q. What issues did Mr. Keller find with your Direct Testimony?

A. Mr. Keller does not agree with my acceptance of the Borough's hypothetical capital structure of 50.26% long term debt and 49.74% equity.

Q. Please respond to Mr. Keller's issue.

A. While I understand Mr. Keller's arguments in his Rebuttal Testimony, I did not undertake a study of the appropriate capital structure. Therefore, I am not endorsing the Borough's hypothetical capital structure, I have simply accepted it for my own calculations.

Conclusion:

Q. **Does this conclude your Surrebuttal Testimony?**

A. Yes, it does. However, I reserve the right to modify my testimony as necessary.

Docket No. R-2022-3031704
Schedule MND-1SR
July 27, 2022

The Borough of Ambler - Water Bureau
Adjustment of Operations and Maintance Expenses
For the FPFTY Ending September 30, 2023

	Description	Total System	Total Outside-Borough	Notes
1	Rate Base per City	$ 18,197,784		Borough Statement No. 2, Sch. 4.
	Accumulated Depreciation	$ (7,262,722)		
	Contributions in Aid of Construction	$ (373,638)		
	Borough's CWC	$ 301,608		
2	Adjust Cash Working Capital for OCA O&M Adj.	$ (8,475)		Sch. MND-2SR
3	Adjusted Rate Base	$ 10,854,557		
4	Rate of Return	5.23%		Sch. MND-4SR
5	Net Operating Income Requirement	$ 567,153		
6	Less: NOI - Present Rates	$ (195,480)		Borough Statement No. 2, Sch. 1. Line 17, Col. R.
7	Add: OCA Adjustments			
8	Rate Case Exp. Normalization	$ (67,800)		Sch. MND-3SR
9				
10	Total OCA Adjustments	$ (67,800)		
11				
12				
13	Revenue Increase - OCA	$ 694,833	$ 408,995	
14				
15	Revenue Increase Percentage - OCA	27.87%	29.12%	Revenue Increase - OCA / Total Revenues
16				
17	Increase Requested by Borough	$ 930,768	$ 637,691	
18				
19	Percentage Increase Requested by Borough	37.33%	45.41%	Increase Requested by Borough / Total Revenues

Docket No. R-2022-3031704
Schedule MND-2SR
July 27, 2022

The Borough of Ambler - Water Bureau
Adjustment of Cash Working Capital
For the FPFTY Ending September 30, 2023

Line No.			
1	The Borough's Projected O&M	$	2,412,865
2	Less: OCA Adjustments to O&M	$	(67,800)
3	OCA Adjusted O&M	$	2,345,065
4	CWC Percentage		12.5%
5	Total Cash Working Capital	$	293,133
6			
7	The Borough's Cash Working Capital Expense	$	301,608
8	OCA Adjustment	$	(8,475)

Docket No. R-2022-3031704
Schedule MND-3SR
July 27, 2022

The Borough of Ambler - Water Bureau
Adjustment of Rate Case Expense
For the FPFTY Ending September 30, 2023

Line No.			
1	Rate Case Expense	$	339,000
2	Months to Normalize*		90
3	Annual Normalized Expense	$	45,200
4			
5	The Borough's FPFTY Expense	$	113,000
6	OCA Adjustment	$	(67,800)

*This number is calculated using the average number of months between the last two rate cases(Ambler Response to I&E-RE-12-D), 84 and 96 months, respectively. (84+96)/2=90 months.

Docket No. R-2022-3031704
Schedule MND-4SR
July 27, 2022

The Borough of Ambler - Water Bureau
Rate of Return
For the FPFTY Ending September 30, 2023

	Percent	Cost Rate	15% Tax Adjustment Factor	Cost of Money
Long Term Debt	50.26%	2.36%		1.19%
Common Equity*	49.74%	9.55%	8.12%	4.04%
Total	100.00%			5.23%

* (0.0955*0.15)=0.0143, (0.0955-0.0143)*100=8.12%

DCF Calculation using Analyst Forecasts

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
	Average Dividend Yield (1)	Value Line Projected 5 Year Growth	Zack's 5 Year Projected Growth in RPS	Yahoo! Finance Projected 5 Year Growth	Average Projected 5 Year Growth in	Adjusted Dividend Yield (3)	Indicated Common Equity Cost Rate (4)
American States Water Company	1.64%	6.50%	N/A	6.70%	6.60%	1.69%	8.29%
American Water Works Company, Inc.	1.52%	8.50%	8.10%	8.20%	8.27%	1.58%	9.85%
Essential Utilities, Inc.	2.22%	10.00%	6.20%	6.40%	7.53%	2.30%	9.84%
California Water Service Group	1.66%	8.50%	N/A	11.70%	10.10%	1.74%	11.84%
Middlesex Water Company	1.14%	5.00%	N/A	2.70%	3.85%	1.16%	5.01%
SJW Group	2.14%	15.00%	N/A	5.70%	10.35%	2.25%	12.60%
York Water Company	1.75%	6.50%	N/A	4.90%	5.70%	1.80%	7.50%
						Mean	9.27%
						Median	9.84%
						Average of Mean and Median	9.55%

N/A= Not Available

Notes:
(1) Most recent dividend divided by the 90 day average price from January 3, 2022 - April 1, 2022.
(2) Average of columns 2 through 4
(3) This reflects a growth rate component equal to one-half the conclusion of growth rate x column 1 to reflect the periodic payment of dividends (Gordon Model) as opposed to the continuous payment.
Thus, for American States Water Company, 1.64% x (1+(1/2 x 6.60%)) = 1.69%.
(4) Column 5 + Column 6.

Source of Information: January 3, 2022 - April 1, 2022
Value Line Investment Survey
www.zacks.com Downloaded
www.yahoo.com Downloaded

Docket No. R-2022-3031704
Schedule MND-5SR.a
July 27, 2022

Avg. Price of Proxy Group from January 3, 2022 - April 1, 2022.

Date	AWR	AWK	WTRG	CWT	MSEX	SJW	YORW
4/1/2022	$ 92.76	$ 168.84	$ 52.59	$ 61.72	$ 109.05	$ 71.65	$ 43.67
3/31/2022	$ 89.02	$ 165.53	$ 51.13	$ 59.28	$ 105.17	$ 69.58	$ 44.97
3/30/2022	$ 89.61	$ 165.85	$ 51.99	$ 59.98	$ 105.45	$ 69.86	$ 45.45
3/29/2022	$ 89.61	$ 164.44	$ 51.08	$ 59.81	$ 105.69	$ 69.66	$ 45.50
3/28/2022	$ 87.33	$ 161.42	$ 50.04	$ 58.80	$ 102.71	$ 67.83	$ 44.63
3/25/2022	$ 86.97	$ 159.55	$ 49.95	$ 58.26	$ 102.50	$ 67.74	$ 44.70
3/24/2022	$ 86.69	$ 158.15	$ 48.91	$ 58.30	$ 103.36	$ 67.93	$ 44.07
3/23/2022	$ 85.39	$ 155.60	$ 48.49	$ 57.38	$ 100.35	$ 67.15	$ 44.31
3/22/2022	$ 86.05	$ 156.58	$ 48.24	$ 57.65	$ 102.16	$ 67.27	$ 43.95
3/21/2022	$ 87.21	$ 157.01	$ 48.76	$ 58.32	$ 103.64	$ 67.79	$ 44.00
3/18/2022	$ 87.44	$ 158.72	$ 48.08	$ 58.49	$ 103.48	$ 68.04	$ 43.09
3/17/2022	$ 85.97	$ 157.43	$ 47.72	$ 58.14	$ 102.35	$ 67.24	$ 43.78
3/16/2022	$ 85.66	$ 156.15	$ 47.31	$ 57.86	$ 99.55	$ 66.62	$ 43.94
3/15/2022	$ 85.97	$ 155.95	$ 47.54	$ 57.61	$ 100.85	$ 67.10	$ 44.05
3/14/2022	$ 84.01	$ 152.62	$ 46.61	$ 57.04	$ 98.50	$ 65.90	$ 43.63
3/11/2022	$ 83.89	$ 152.08	$ 46.74	$ 56.68	$ 99.39	$ 66.17	$ 43.74
3/10/2022	$ 84.73	$ 153.13	$ 47.15	$ 57.60	$ 100.79	$ 66.68	$ 44.16
3/9/2022	$ 85.89	$ 152.79	$ 46.84	$ 58.33	$ 102.41	$ 67.17	$ 44.69
3/8/2022	$ 87.30	$ 154.25	$ 46.80	$ 58.44	$ 103.89	$ 67.95	$ 46.19
3/7/2022	$ 89.98	$ 159.22	$ 48.07	$ 59.83	$ 106.62	$ 68.60	$ 47.68
3/4/2022	$ 88.12	$ 161.04	$ 48.80	$ 58.63	$ 106.55	$ 68.05	$ 46.68
3/3/2022	$ 84.72	$ 154.94	$ 47.25	$ 57.01	$ 103.65	$ 65.69	$ 45.86
3/2/2022	$ 84.96	$ 152.10	$ 47.27	$ 56.90	$ 100.68	$ 65.22	$ 44.60
3/1/2022	$ 83.51	$ 151.02	$ 46.61	$ 56.42	$ 99.68	$ 64.11	$ 43.63
2/28/2022	$ 84.16	$ 151.09	$ 47.11	$ 56.93	$ 99.99	$ 65.22	$ 44.87
2/25/2022	$ 83.19	$ 152.69	$ 47.37	$ 55.97	$ 98.31	$ 64.94	$ 43.86
2/24/2022	$ 83.13	$ 148.60	$ 46.65	$ 56.86	$ 97.89	$ 63.95	$ 43.00
2/23/2022	$ 83.69	$ 146.73	$ 44.80	$ 57.53	$ 95.85	$ 64.08	$ 43.13
2/22/2022	$ 85.47	$ 147.83	$ 45.40	$ 59.05	$ 97.83	$ 64.73	$ 43.13
2/18/2022	$ 86.03	$ 148.26	$ 45.52	$ 58.78	$ 96.84	$ 65.22	$ 43.31
2/17/2022	$ 85.56	$ 148.06	$ 45.93	$ 58.42	$ 96.81	$ 64.93	$ 43.16
2/16/2022	$ 84.99	$ 146.29	$ 45.19	$ 58.23	$ 96.33	$ 64.46	$ 43.34
2/15/2022	$ 84.66	$ 146.77	$ 45.28	$ 58.38	$ 96.30	$ 64.25	$ 43.03
2/14/2022	$ 85.56	$ 148.03	$ 45.12	$ 58.47	$ 96.51	$ 64.35	$ 42.59
2/11/2022	$ 86.18	$ 149.46	$ 45.78	$ 58.77	$ 96.32	$ 64.67	$ 42.78
2/10/2022	$ 85.97	$ 150.41	$ 45.67	$ 58.25	$ 95.67	$ 64.21	$ 42.21
2/9/2022	$ 88.22	$ 155.73	$ 46.92	$ 59.85	$ 97.31	$ 65.82	$ 43.55
2/8/2022	$ 89.52	$ 155.66	$ 47.17	$ 60.10	$ 98.49	$ 66.61	$ 43.72
2/7/2022	$ 88.88	$ 155.42	$ 46.99	$ 59.46	$ 97.20	$ 66.07	$ 43.23
2/4/2022	$ 88.78	$ 155.50	$ 47.27	$ 59.74	$ 97.14	$ 66.06	$ 43.14
2/3/2022	$ 89.69	$ 157.51	$ 47.98	$ 60.50	$ 96.63	$ 67.78	$ 43.23
2/2/2022	$ 90.75	$ 160.82	$ 48.82	$ 61.23	$ 97.92	$ 68.38	$ 43.93
2/1/2022	$ 89.96	$ 158.71	$ 47.83	$ 60.96	$ 99.65	$ 67.32	$ 44.02
1/31/2022	$ 92.23	$ 160.80	$ 48.74	$ 62.09	$ 101.24	$ 68.86	$ 45.42
1/28/2022	$ 90.54	$ 157.84	$ 47.65	$ 60.98	$ 99.98	$ 68.45	$ 45.04
1/27/2022	$ 89.76	$ 156.15	$ 47.20	$ 60.19	$ 99.44	$ 67.41	$ 44.46
1/26/2022	$ 91.17	$ 155.55	$ 48.11	$ 60.79	$ 100.32	$ 67.95	$ 45.49
1/25/2022	$ 91.45	$ 157.00	$ 47.87	$ 61.57	$ 103.54	$ 68.48	$ 45.39
1/24/2022	$ 91.31	$ 159.79	$ 47.83	$ 60.69	$ 98.85	$ 68.09	$ 45.58
1/21/2022	$ 91.81	$ 161.39	$ 48.13	$ 61.12	$ 97.88	$ 68.31	$ 44.63
1/20/2022	$ 91.30	$ 162.70	$ 48.22	$ 61.22	$ 98.88	$ 67.93	$ 44.50
1/19/2022	$ 91.87	$ 161.02	$ 48.28	$ 61.61	$ 97.87	$ 67.79	$ 44.61
1/18/2022	$ 91.81	$ 162.01	$ 48.47	$ 61.97	$ 98.90	$ 67.20	$ 44.68
1/14/2022	$ 93.97	$ 163.57	$ 49.41	$ 62.51	$ 102.10	$ 68.18	$ 45.68
1/13/2022	$ 95.55	$ 168.09	$ 50.67	$ 63.83	$ 104.70	$ 68.63	$ 45.91
1/12/2022	$ 95.95	$ 169.18	$ 50.63	$ 64.78	$ 106.76	$ 68.60	$ 45.60
1/11/2022	$ 95.89	$ 168.31	$ 51.47	$ 65.04	$ 108.36	$ 68.79	$ 46.05
1/10/2022	$ 96.73	$ 170.03	$ 51.71	$ 66.18	$ 109.61	$ 69.34	$ 46.08
1/7/2022	$ 98.42	$ 173.50	$ 52.18	$ 67.83	$ 112.20	$ 70.50	$ 46.44
1/6/2022	$ 99.96	$ 175.30	$ 52.20	$ 68.63	$ 116.47	$ 70.95	$ 47.37
1/5/2022	$ 100.11	$ 178.10	$ 52.97	$ 69.32	$ 118.35	$ 71.35	$ 47.43
1/4/2022	$ 100.48	$ 179.42	$ 52.87	$ 69.87	$ 118.95	$ 70.90	$ 48.11
1/3/2022	$ 102.80	$ 184.14	$ 53.13	$ 71.87	$ 119.13	$ 72.76	$ 49.26

	90 Day Avg
AWR	$ 89.21
AWK	$ 158.60
WTRG	$ 48.33
CWT	$ 60.29
MSEX	$ 102.08
SJW	$ 67.37
YORW	$ 44.63

Docket No. R-2022-3031704
Schedule MND-5SR.b
July 27, 2022

Dividend Yield of Proxy Group

	Date of Dividend	DIV	Yearly Dividend	Price (1)	Yield
AWR	2/14/2022	0.365	$ 1.46	$ 89.21	1.64%
AWK	2/7/2022	0.603	$ 2.41	$ 158.60	1.52%
WTRG	2/10/2022	0.268	$ 1.07	$ 48.33	2.22%
CWT	2/4/2022	0.250	$ 1.00	$ 60.29	1.66%
MSEX	2/11/2022	0.290	$ 1.16	$ 102.08	1.14%
SJW	2/4/2022	0.360	$ 1.44	$ 67.37	2.14%
YORW	2/25/2022	0.195	$ 0.78	$ 44.63	1.75%
				Average	1.72%

(1) Average price of 90 day period from Januay 3, 2022 through April 1, 2022 from Yahoo! Finance

Calculation of CAPM

CAPM	=	Rf (1)	+	Beta (2)	*	(3) (Rm	-	Rf)
7.35%	=	2.26%	+	0.77	*	6.60%		

(1) Average Return on 30 Year Treasury Rate
(2) Average beta
(3) Forecasted Risk Premium with historical as a check

Source of Information: January 3, 2022 - April 1, 2022
Value Line Investment Survey
www.zacks.com
www.yahoo.com

Docket No. R-2022-3031704
Schedule MND-6SR.a
July 27, 2022

30 Year Treasury Rate

Date	30 Year Treasury		
4/1/2022	2.44%	Average	2.26%
3/31/2022	2.44%		
3/30/2022	2.48%		
3/29/2022	2.53%		
3/28/2022	2.57%		
3/25/2022	2.60%		
3/24/2022	2.51%		
3/23/2022	2.52%		
3/22/2022	2.60%		
3/21/2022	2.55%		
3/18/2022	2.42%		
3/17/2022	2.50%		
3/16/2022	2.46%		
3/15/2022	2.49%		
3/14/2022	2.47%		
3/11/2022	2.36%		
3/10/2022	2.38%		
3/9/2022	2.29%		
3/8/2022	2.24%		
3/7/2022	2.19%		
3/4/2022	2.16%		
3/3/2022	2.24%		
3/2/2022	2.24%		
3/1/2022	2.11%		
2/28/2022	2.17%		
2/25/2022	2.29%		
2/24/2022	2.28%		
2/23/2022	2.29%		
2/22/2022	2.24%		
2/18/2022	2.24%		
2/17/2022	2.31%		
2/16/2022	2.34%		
2/15/2022	2.37%		
2/14/2022	2.29%		
2/11/2022	2.24%		
2/10/2022	2.30%		
2/9/2022	2.25%		
2/8/2022	2.25%		
2/7/2022	2.22%		
2/4/2022	2.23%		
2/3/2022	2.13%		
2/2/2022	2.11%		
2/1/2022	2.12%		
1/31/2022	2.11%		
1/28/2022	2.07%		
1/27/2022	2.09%		
1/26/2022	2.16%		
1/25/2022	2.12%		
1/24/2022	2.10%		
1/21/2022	2.07%		
1/20/2022	2.14%		
1/19/2022	2.14%		
1/18/2022	2.18%		
1/14/2022	2.12%		
1/13/2022	2.05%		
1/12/2022	2.08%		
1/11/2022	2.08%		
1/10/2022	2.11%		
1/7/2022	2.11%		
1/6/2022	2.09%		
1/5/2022	2.09%		
1/4/2022	2.07%		
1/3/2022	2.01%		

Source Information:
https://ycharts.com/indicators/30_year_treasury_rate

Docket No. R-2022-3031704
Schedule MND-6SR.b
July 27, 2022

Beta of Proxy Group

	Value Line
AWR	0.65
AWK	0.85
WTRG	0.95
CWT	0.65
MSEX	0.70
SJW	0.80
YORW	0.80
Average	0.77

Source Information:
Value Line

Year	S&P 500 Total Return	S&P 500 Historical		
2021	28.71%	128.71%		
2020	18.40%	118.40%	Geometric Mean	11.86%
2019	31.49%	131.49%		
2018	-4.38%	95.62%	Arithmetic Mean	13.12%
2017	21.83%	121.83%		
2016	11.96%	111.96%		
2015	1.38%	101.38%		
2014	13.69%	113.69%		
2013	32.39%	132.39%		
2012	16.00%	116.00%		
2011	2.11%	102.11%		
2010	15.06%	115.06%		
2009	26.46%	126.46%		
2008	-37.00%	63.00%		
2007	5.49%	105.49%		
2006	15.79%	115.79%		
2005	4.91%	104.91%		
2004	10.88%	110.88%		
2003	28.68%	128.68%		
2002	-22.10%	77.90%		
2001	-11.89%	88.11%		
2000	-9.10%	90.90%		
1999	21.04%	121.04%		
1998	28.58%	128.58%		
1997	33.36%	133.36%		
1996	22.93%	122.93%		
1995	37.58%	137.58%		
1994	1.32%	101.32%		
1993	10.08%	110.08%		
1992	7.62%	107.62%		
1991	30.47%	130.47%		
1990	-3.10%	96.90%		
1989	31.69%	131.69%		
1988	16.61%	116.61%		
1987	5.25%	105.25%		
1986	18.67%	118.67%		
1985	31.73%	131.73%		
1984	6.27%	106.27%		
1983	22.56%	122.56%		
1982	21.55%	121.55%		
1981	-4.91%	95.09%		
1980	32.42%	132.42%		
1979	18.44%	118.44%		
1978	6.56%	106.56%		
1977	-7.18%	92.82%		

30 Year Treasury Rate at Year Close

Year	Historical Yield			
2021	2.06%	102.06%	Geometric Mean	6.32%
2020	1.56%	101.56%		
2019	2.58%	102.58%	Arithmetic Mean	6.37%
2018	3.11%	103.11%		
2017	2.89%	102.89%		
2016	2.59%	102.59%		
2015	2.84%	102.84%		
2014	3.34%	103.34%		
2013	3.45%	103.45%		
2012	2.92%	102.92%		
2011	3.91%	103.91%		
2010	4.25%	104.25%		
2009	4.08%	104.08%		
2008	4.28%	104.28%		
2007	4.84%	104.84%		
2006	4.88%	104.88%		
2005	4.56%	104.56%		
2004	5.13%	105.13%		
2003	5.11%	105.11%		
2002	5.44%	105.44%		
2001	5.49%	105.49%		
2000	5.94%	105.94%		
1999	5.87%	105.87%		
1998	5.58%	105.58%		
1997	6.61%	106.61%		
1996	6.71%	106.71%		
1995	6.88%	106.88%		
1994	7.37%	107.37%		
1993	6.59%	106.59%		
1992	7.67%	107.67%		
1991	8.14%	108.14%		
1990	8.61%	108.61%		
1989	8.45%	108.45%		
1988	8.96%	108.96%		
1987	8.59%	108.59%		
1986	7.78%	107.78%		
1985	10.79%	110.79%		
1984	12.41%	112.41%		
1983	11.18%	111.18%		
1982	12.76%	112.76%		
1981	13.45%	113.45%		
1980	11.27%	111.27%		
1979	9.28%	109.28%		
1978	8.49%	108.49%		
1977	7.75%	107.75%		

Historical Market Risk Premium

S&P 500 Geometric Mean Returns 1977-2021	11.86%
30 Year Treasury Geometric Mean Returns 1977-2021	6.32%
Historical Market Risk Premium	5.54%

Forecasted Market Risk Premium

Duff & Phelps Report	5.5%
Schwab	6.6%
Vanguard	3.2%
Average	5.1%
Highest	6.60%

(1) https://www.kroll.com/en/insights/publications/valuation/valuation-insights-first-quarter-2021/duff-and-phelps-recommended-us-equity-risk

(2) https://www.schwab.com/learn/story/schwabs-long-term-capital-market-expectations

(3) https://advisors.vanguard.com/insights/article/series/vanguardeconomicandmarketoutlook#global-capital-markets-outlook

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket No. R-2022-3031704
	:	
Borough of Ambler – Water Department	:	

VERIFICATION

I, Morgan N. DeAngelo, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 1SR, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: July 27, 2022
*332648

Signature: Morgan N. DeAngelo
Morgan N. DeAngelo

Consultant Address: Office of Consumer Advocate
555 Walnut Street
5th Floor, Forum Place
Harrisburg, PA 17101-1923

OCA Statement 2SR

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	:	
v.	:	Docket No. R-2022-3031704
BOROUGH OF AMBLER – WATER	:	

SURREBUTTAL TESTIMONY

OF

TERRY L. FOUGHT

ON BEHALF OF

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

JULY 27, 2022

INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS FOR THE RECORD.

A. Terry L. Fought, 780 Cardinal Drive, Harrisburg, Pennsylvania, 17111.

Q. MR. FOUGHT, HAVE YOU ALREADY SUBMITTED TESTIMONY IN THIS PROCEEDING ON BEHALF OF THE OFFICE OF CONSUMER ADVOCATE?

A. Yes. I submitted direct testimony.

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

A. The purpose of my surrebuttal testimony is to respond to portions of the rebuttal testimony by Mary Aversa, Borough of Ambler Statement No. 1-R, regarding isolation valves, fire hydrants and customer complaint logs.

ISOLATION VALVES

Q. WHAT IS THE BOROUGH'S POSITION ON ISOLATION VALVES?

A. Ms. Aversa states that: (1) the Borough does not generally believe it should be held to operational requirements beyond the already extensive standards set forth in the Commission's Regulations; (2) the Borough will accept the OCA's recommended procedures for exercising isolation valves; (3) with regard to OCA's recommendation for the Borough to replace at least 30 valves per year, the Borough estimates these replacements would cost between $6,500 and $11,500 per valve based on size, or between $195,000 and $345,000 per year; and (4) rather than commit the Borough to additional capital requirements that were not incorporated into the capital expenditures supporting the proposed revenue

requirement, the Borough is willing to include a proposal to replace 15 isolation valves per year in its next base rate case filing. [1]

Q. DO YOU AGREE OR DISAGREE WITH THE BOROUGH'S POSITION ON ISOLATION VALVES AS STATED ABOVE?

A. The following responses are in the same numerical order as the Borough's position noted above.

1. I disagree that exercising isolation valves is beyond the standards set forth in the Commission's Regulations because the Borough has a responsibility to properly maintain all of its water facilities, including exercising isolation valves on a routine basis to prevent the need to repair and/or replace the valve.

2. I agree that the Borough should use the OCA's recommended procedures for exercising isolation valves.

3. I accept the Borough's cost estimates that replacing at least 30 valves per year will cost between $6,500 and $11,500 per valve based on size, or between $195,000 and $345,000 per year.

4. I continue to recommend that the Borough be required to replace/repair at least 30 isolation valves per year which will take about 12 years. I disagree that the Borough should be allowed to replace 15 isolation valves per year starting after its next base rate case filing. As noted in my Direct Testimony, there are 706 isolation valves in the jurisdictional areas and 219 isolation valves in the Borough and the Borough estimates that 40% (or about 370) of the isolation valves need to

[1] Borough of Ambler Statement No. 1-R, p. 3.

be replaced[2]. At a rate of 15 per year, it will take 24 to 25 years to repair/replace all those valves.

Q. DID THE BOROUGH STATE A POSITION ON KEEPING A MAINTENANCE LOG ON ISOLATION VALVES IN ITS REBUTTAL TESTIMONY?

A. No. I continue to recommend that the Borough keep a maintenance log in a live Excel format for each isolation valve that indicates every time that valve was successfully exercised, opened/closed for other reasons and notes any difficulties encountered. This log should include all valves exercised or repaired/replaced after January 1, 2016. The Borough should annually submit the status of maintenance of the isolation valves by submitting a copy of its maintenance log to the Commission and to the parties. This will allow the Borough, OCA and other parties to easily determine the maintenance history of any isolation valve that needs to be repaired or replaced in the future.

FIRE HYDRANTS

Q. WHAT IS THE BOROUGH'S POSITION ON YOUR RECOMMENDATION TO MARK THE 56 FIRE HYDRANTS THAT ARE CONNECTED TO SMALLER DIAMETER MAINS?

A. Ms. Aversa states that: (1) the Borough disagrees with the OCA recommendation that each of the 56 fire hydrants that are connected to less than 6-inch water mains should be marked for being only used for flushing and blow-offs until the Borough can document which of those hydrants can provide a minimum flow of 500 gpm;

[2] OCA Statement 2, pp. 5-6.

(2) the OCA recommendation is duplicative of the pressure requirements set forth in the Commission's Regulations. The Borough is already required to comply with the minimum pressure requirements in Section 65.6 of the Commission's Regulations, 52 Pa. Code § 65.6; and (3) OCA has not identified a record of noncompliance or other reasonable basis for imposing an additional flow requirement.[3]

Q. DO YOU AGREE OR DISAGREE WITH THE BOROUGH'S POSITION ON FIRE HYDRANTS AS STATED ABOVE?

A. The following responses are in the same numerical order as the Borough's position noted above.

1. I disagree with the Borough's position. According to DEP's Public Water Supply Manual, Part II, Community System Design Standards, the minimum size water main connected to a fire hydrant is 6-inches. See Exhibit TLF-5.[4]

2. Section 65.6 of the Commission's Regulations, 52 Pa. Code § 65.6 does not address pressures during fire flows.

3. As mentioned in my Direct Testimony, if a fire company pumped 500 gpm from one of these 56 fire hydrants, it may cause negative pressures that contaminate other portions of the distribution system. Marking the 56 fire hydrants is reasonable so that fire companies are aware of this problem if the fire companies use the marked hydrants.

[3] Borough of Ambler Statement No. 1-R, pp. 4-5.
[4] OCA Statement 2

Negative pressures may result because the normal pressure at the fire hydrant (and the distribution system) is drastically lowered during a fire flow because of the increase of pipe friction in the distribution system. For example, at 500 gallons per minute a 6-inch cast iron water main has a 2.02 head loss feet per 100 feet [0.87 psi per 100 feet][5] and a 4-inch cast iron water main has a 16.4 head loss per 100 feet [7.10 psi per 100 feet].[6] See Exhibit TLF-8. Other types of water main pipe have similar differences in pressure due to friction between 6-inch and 4-inch pipes.

Q. WHAT IS THE BOROUGH'S POSITION ON CUSTOMER COMPLAINT LOGS?

A. Ms. Aversa states that: (1) the Borough objects to submitting the OCA recommended customer complaint log in a live Excel format annually to the parties prior to April 15 of each year. Under OCA's proposal, if the complaint log includes both Borough and jurisdictional customers, the log should note which type of customer made the complaint. According to Ms. Aversa, the OCA's proposed customer log categories are overly prescriptive since they include categories for date; location; pressure; dirty water; rusty water; water taste; odor or color; staining; request for water testing; customer property damage; incomplete surface restoration; and health issues; (2) the software used by the Borough to log customer complaints cannot produce reports in Excel form; (3) most of the Borough's service-related complaints relate to water pressure issues on the customer-side of the meter arising from clogs or other similar causes; (4) the

[5] Psi = head loss in feet x 0.433 psi per foot.
[6] Cameron Hydraulic Data, pp. 3-20 & 3-22 for asphalt-dipped cast iron pipe.

complaint list would be more manageable if the customer-side complaints were labeled separately from the utility-side complaints; and (5) the Borough opposes OCA's recommendation and alternatively proposes to modify its customer complaint log to separately identify customer-side complaints and utility-side complaints.[7]

Q. DO YOU AGREE OR DISAGREE WITH THE BOROUGH'S POSITION ON CUSTOMER COMPLAINT LOGS?

A. The following responses are in the same numerical order as the Borough's position noted above.

1. I agree that my recommendation should be modified in this case. According to 52 Pa. Code § 65.3 (b), the Borough should provide a record of complaints for a period of at least 5 years showing the name and address of the complainant, the date and character of the complaint and the final disposition of the complaint. A submission of a complaint log that contains the above information is acceptable without additional categories. I will review the log in the next case to determine whether in the next case it would be reasonable to add categories going forward.

2. I understand the Borough's response regarding my recommendation that it provide the customer complaint log in Excel; if the Borough continues to use that software, it should either (1) submit a complaint log that is searchable and sortable by pertinent categories or (2) a report that can be converted by commonly available software that makes it is searchable and sortable by pertinent categories.

[7] Borough of Ambler Statement No. 1-R, pp. 5-6.

3. I agree that most of the Borough's service-related complaints relate to water pressure issues on the customer-side of the meter. Water pressure complaints should be included in the pertinent complaint log categories mentioned above.

4 & 5. I agree. The complaint log categories should separate utility-side issues and customer-side issues.

Q. DID THE BOROUGH PROVIDE REBUTTAL TESTIMONY TO YOUR DIRECT TESTIMONY REGARDING METER AGE AND PRESSURES AND PRESSURE SURVEYS?

A. No.

Q. DOES THIS COMPLETE YOUR WRITTEN SURREBUTTAL TESTIMONY?

A. Yes, at this time. I reserve the right to supplement this testimony either in writing or orally if additional relevant information is received.

CAMERON HYDRAULIC DATA

Friction of Water — Asphalt-dipped Cast Iron and New Steel Pipe

(Based on Darcy's Formula)

4 Inch

Flow US gal per min	Asphalt-dipped cast iron 4.0" inside dia			Std wt steel sch 40 4.026" inside dia			Extra strong steel sch 80 3.826" inside dia			Schedule 160—steel 3.438" inside dia		
	Velocity ft per sec	Velocity head ft	**Head loss ft per 100 ft**	Velocity ft per sec	Velocity head ft	**Head loss ft per 100 ft**	Velocity ft per sec	Velocity head ft	**Head loss ft per 100 ft**	Velocity ft per sec	Velocity head ft	**Head loss ft per 100 ft**
20	.511	.004	**.038**	.504	.004	**.035**	.56	.00	**.045**	.691	.007	**.074**
30	.766	.009	**.076**	.756	.009	**.072**	.84	.01	**.092**	1.04	.017	**.154**
40	1.02	.016	**.128**	1.01	.016	**.120**	1.12	.02	**.153**	1.38	.030	**.258**
50	1.28	.025	**.194**	1.26	.025	**.179**	1.40	.03	**.230**	1.73	.046	**.387**
60	1.53	.037	**.273**	1.51	.036	**.250**	1.67	.04	**.320**	2.07	.067	**.540**
70	1.79	.050	**.365**	1.76	.048	**.330**	1.95	.06	**.424**	2.42	.091	**.691**
80	2.04	.065	**.470**	2.02	.063	**.422**	2.23	.08	**.541**	2.77	.119	**.885**
90	2.30	.082	**.588**	2.27	.080	**.523**	2.51	.10	**.649**	3.11	.150	**1.10**
100	2.55	.101	**.719**	2.52	.099	**.613**	2.79	.12	**.789**	3.46	.185	**1.34**
110	2.81	.123	**.862**	2.77	.119	**.732**	3.07	.15	**.943**	3.80	.224	**1.61**
120	3.06	.146	**1.02**	3.02	.142	**.861**	3.35	.17	**1.11**	4.15	.267	**1.89**
130	3.32	.171	**1.19**	3.28	.167	**1.00**	3.63	.20	**1.29**	4.49	.313	**2.20**
140	3.57	.199	**1.37**	3.53	.193	**1.15**	3.91	.24	**1.48**	4.84	.363	**2.53**
150	3.83	.228	**1.57**	3.78	.222	**1.31**	4.19	.27	**1.69**	5.18	.417	**2.89**
160	4.08	.259	**1.77**	4.03	.253	**1.48**	4.47	.31	**1.91**	5.53	.475	**3.26**
170	4.34	.293	**1.99**	4.28	.285	**1.66**	4.75	.35	**2.14**	5.88	.536	**3.66**
180	4.60	.328	**2.23**	4.54	.320	**1.85**	5.02	.39	**2.38**	6.22	.601	**4.09**
190	4.85	.368	**2.47**	4.79	.356	**2.05**	5.30	.44	**2.64**	6.57	.669	**4.53**
200	5.11	.406	**2.73**	5.04	.395	**2.25**	5.58	.48	**2.91**	6.91	.742	**5.00**
220	5.62	.490	**3.29**	5.54	.478	**2.70**	6.14	.59	**3.49**	7.60	897	**6.00**
240	6.13	.583	**3.90**	6.05	.569	**3.19**	6.70	.70	**4.13**	8.30	1.07	**7.09**
260	6.64	.685	**4.55**	6.55	.667	**3.72**	7.26	.82	**4.81**	8.99	1.25	**8.27**
280	7.15	.794	**5.26**	7.06	.774	**4.28**	7.82	.95	**5.54**	9.68	1.45	**9.55**
300	7.66	.912	**6.02**	7.56	.888	**4.89**	8.38	1.09	**6.33**	10.37	1.67	**10.9**
320	8.17	1.04	**6.84**	8.06	1.01	**5.53**	8.94	1.24	**7.17**	11.06	1.90	**12.4**
340	8.68	1.17	**7.70**	8.57	1.14	**6.22**	9.50	1.40	**8.06**	11.75	2.14	**13.9**
360	9.19	1.31	**8.61**	9.07	1.28	**6.94**	10.0	1.6	**9.00**	12.44	2.40	**15.5**
380	9.70	1.46	**9.58**	9.58	1.43	**7.71**	10.6	1.7	**9.99**	13.13	2.68	**17.3**
400	10.2	1.62	**10.6**	10.1	1.58	**8.51**	11.2	1.9	**11.0**	13.82	2.97	**19.1**
420	10.7	1.79	**11.6**	10.6	1.74	**9.35**	11.7	2.1	**12.1**	14.52	3.27	**21.0**
440	11.2	1.96	**12.8**	11.1	1.91	**10.2**	12.3	2.3	**13.3**	15.21	3.59	**22.9**
460	11.7	2.14	**13.9**	11.6	2.09	**11.2**	12.8	2.5	**14.5**	15.90	3.92	**25.0**
480	12.3	2.33	**15.2**	12.1	2.27	**12.1**	13.4	2.8	**15.7**	16.59	4.27	**27.2**
500	12.8	2.53	**16.4**	12.6	2.47	**13.1**	14.0	3.0	**17.0**	17.28	4.64	**29.5**
550	14.0	3.06	**19.8**	13.9	2.99	**15.8**	15.3	3.6	**20.5**	19.00	5.61	**35.5**
600	15.3	3.65	**23.6**	15.1	3.55	**18.7**	16.7	4.3	**24.3**	20.74	6.67	**42.1**
650	16.6	4.28	**27.6**	16.4	4.17	**21.7**	18.1	5.1	**28.4**	22.46	7.83	**49.2**
700	17.9	4.96	**32.0**	17.6	4.84	**25.3**	19.5	5.9	**32.8**	24.19	9.08	**57.0**
750	19.1	5.70	**36.6**	18.9	5.55	**28.9**	20.9	6.8	**37.6**	25.92	10.4	**65.2**
800	20.4	6.48	**41.6**	20.2	6.32	**32.8**	22.3	7.7	**42.7**	27.65	11.7	**74.1**
850	21.7	7.32	**46.9**	21.4	7.13	**37.0**	23.7	8.7	**48.1**	29.38	13.4	**83.4**
900	23.0	8.20	**52.6**	22.7	8.00	**41.4**	25.1	9.8	**53.8**	31.10	15.0	**93.4**
950	24.3	9.14	**58.5**	23.9	8.91	**46.0**	26.5	10.9	**59.8**	32.83	16.7	**104**
1000	25.5	10.1	**64.8**	25.2	9.87	**50.9**	27.9	12.1	**66.2**	34.56	18.5	**115**
1100	28.1	12.3	**78.3**	27.7	11.9	**61.4**	30.7	14.6	**79.8**	38.02	22.4	**139**

Note: No allowance has been made for age, difference in diameter, or any abnormal condition of interior surface. Any factor of safety must be estimated from the local conditions and the requirements of each particular installation. It is recommended that for most commercial design purposes a safety factor of 15 to 20% be added to the values in the tables—see page 3-5.

CAMERON HYDRAULIC DATA

Friction of Water — Asphalt-dipped Cast Iron and New Steel Pipe

(Based on Darcy's Formula)

6 Inch

Flow US gal per min	Asphalt-dipped cast iron 6.0" inside dia			Std wt steel sch 40 6.065" inside dia			Extra strong steel sch 80 5.761" inside dia			Schedule 160—steel 5.187" inside dia		
	Velocity ft per sec	Velocity head ft	**Head loss ft per 100 ft**	Velocity ft per sec	Velocity head ft	**Head loss ft per 100 ft**	Velocity ft per sec	Velocity head ft	**Head loss ft per 100 ft**	Velocity ft per sec	Velocity head ft	**Head loss ft per 100 ft**
50	.57	.005	**.027**	.56	.005	**.025**	.62	.01	**.032**	.759	.009	**.053**
60	.68	.007	**.038**	.67	.007	**.034**	.74	.01	**.044**	.911	.013	**.073**
70	.79	.010	**.048**	.78	.009	**.045**	.86	.01	**.058**	1.06	.018	**.096**
80	.91	.013	**.062**	.89	.012	**.057**	.98	.01	**.074**	1.22	.023	**.123**
90	1.02	.016	**.077**	1.00	.016	**.071**	1.11	.02	**.091**	1.37	.029	**.152**
100	1.13	.020	**.094**	1.11	.019	**.086**	1.23	.02	**.110**	1.52	.036	**.184**
120	1.36	.029	**.132**	1.33	.028	**.120**	1.48	.03	**.154**	1.82	.052	**.256**
140	1.59	.039	**.176**	1.55	.038	**.158**	1.72	.05	**.203**	2.13	.070	**.340**
160	1.82	.051	**.226**	1.78	.049	**.202**	1.97	.06	**.260**	2.43	.092	**.435**
180	2.04	.065	**.283**	2.00	.062	**.251**	2.22	.08	**.323**	2.73	.116	**.522**
200	2.27	.080	**.346**	2.22	.077	**.304**	2.46	.09	**.392**	3.04	.143	**.635**
220	2.50	.097	**.415**	2.44	.093	**.363**	2.71	.11	**.451**	3.34	.173	**.760**
240	2.72	.115	**.490**	2.66	.110	**.411**	2.96	.14	**.530**	3.64	.206	**.895**
260	2.95	.135	**.571**	2.89	.130	**.477**	3.20	.16	**.616**	3.95	.242	**1.04**
280	3.18	.157	**.658**	3.11	.150	**.548**	3.45	.19	**.708**	4.25	.281	**1.20**
300	3.40	.180	**.752**	3.33	.172	**.624**	3.69	.21	**.807**	4.56	.322	**1.36**
320	3.63	.205	**.851**	3.55	.196	**.705**	3.94	.24	**.911**	4.86	.366	**1.54**
340	3.86	.231	**.957**	3.78	.222	**.790**	4.19	.27	**1.02**	5.16	.414	**1.73**
360	4.08	.259	**1.07**	4.00	.240	**.880**	4.43	.31	**1.14**	5.47	.464	**1.93**
380	4.31	.289	**1.19**	4.22	.277	**.975**	4.68	.34	**1.26**	5.77	.517	**2.14**
400	4.54	.320	**1.31**	4.44	.307	**1.07**	4.93	.38	**1.39**	6.07	.572	**2.36**
450	5.10	.403	**1.65**	5.00	.388	**1.34**	5.54	.48	**1.74**	6.82	.725	**2.95**
500	5.67	.500	**2.02**	5.55	.479	**1.64**	6.16	.59	**2.13**	7.59	.894	**3.61**
550	6.24	.605	**2.44**	6.11	.580	**1.97**	6.77	.71	**2.55**	8.35	1.08	**4.34**
600	6.81	.720	**2.89**	6.66	.690	**2.33**	7.39	.85	**3.02**	9.11	1.29	**5.13**
650	7.37	.845	**3.38**	7.22	.810	**2.71**	8.00	.99	**3.52**	9.87	1.51	**5.99**
700	7.94	.980	**3.90**	7.77	.939	**3.13**	8.63	1.16	**4.06**	10.63	1.75	**6.92**
750	8.51	1.12	**4.47**	8.33	1.08	**3.57**	9.24	1.33	**4.64**	11.39	2.01	**7.91**
800	9.08	1.28	**5.07**	8.88	1.23	**4.04**	9.85	1.51	**5.25**	12.15	2.29	**8.96**
850	9.64	1.44	**5.72**	9.44	1.38	**4.55**	10.5	1.7	**5.90**	12.91	2.59	**10.1**
900	10.2	1.62	**6.40**	9.99	1.55	**5.08**	11.1	1.9	**6.60**	13.67	2.90	**11.3**
950	10.8	1.80	**7.11**	10.5	1.73	**5.64**	11.7	2.1	**7.33**	14.42	3.23	**12.5**
1000	11.3	2.00	**7.87**	11.1	1.92	**6.23**	12.3	2.4	**8.09**	15.18	3.58	**13.8**
1100	12.5	2.42	**9.50**	12.2	2.32	**7.49**	13.5	2.8	**9.74**	16.71	4.33	**16.7**
1200	13.6	2.88	**11.3**	13.3	2.76	**8.87**	14.8	3.4	**11.5**	18.22	5.15	**19.8**
1300	14.7	3.38	**13.2**	14.4	3.24	**10.4**	16.0	4.0	**13.5**	19.74	6.05	**23.1**
1400	15.9	3.92	**15.3**	15.5	3.76	**12.0**	17.2	4.6	**15.6**	21.26	7.01	**26.7**
1500	17.0	4.50	**17.5**	16.7	4.31	**13.7**	18.5	5.3	**17.8**	22.78	8.05	**30.6**
1600	18.2	5.12	**19.9**	17.8	4.91	**15.6**	19.7	6.0	**20.3**	24.29	9.16	**34.7**
1700	19.3	5.78	**22.4**	18.9	5.54	**17.5**	20.9	6.8	**22.8**	25.81	10.34	**39.1**
1800	20.4	6.48	**25.1**	20.0	6.21	**19.6**	22.2	7.7	**25.5**	27.33	11.59	**43.8**
1900	21.6	7.22	**28.0**	21.1	6.91	**21.8**	23.4	8.4	**28.4**	28.85	12.92	**48.7**
2000	22.7	8.00	**31.0**	22.2	7.67	**24.1**	24.6	9.4	**31.4**	30.37	14.31	**53.9**
2200	25.0	9.68	**37.4**	24.4	9.27	**29.1**	27.1	11.4	**37.9**	33.40	17.32	**65.0**
2400	27.2	11.5	**44.5**	26.6	11.0	**34.5**	29.6	13.6	**44.9**	36.44	20.61	**77.2**

Note: No allowance has been made for age, difference in diameter, or any abnormal condition of interior surface. Any factor of safety must be estimated from the local conditions and the requirements of each particular installation. It is recommended that for most commercial design purposes a safety factor of 15 to 20% be added to the values in the tables—see page 3-5.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re:	Pennsylvania Public Utility Commission	:	
		:	
	v.	:	Docket No. R-2022-3031704
		:	
	Borough of Ambler – Water Department	:	

VERIFICATION

I, Terry L. Fought, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 2SR, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: July 27, 2022

*332900

Signature: _____

Terry L. Fought

Consultant Address: 780 Cardinal Drive
Harrisburg, PA 17111