



Aqua Pennsylvania, Inc.
762 W. Lancaster Avenue
Bryn Mawr, PA 19010

www.aquaamerica.com

July 25, 2014

VIA FEDERAL EXPRESS

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

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JUL 25 2014

PA PUBLIC UTILITY COMMISSION
SECRETARY'S BUREAU

A-2012-2282704

Re: Aqua Pennsylvania, Inc. Original Cost Study – Bristol Township Water System

Dear Secretary Chiavatta:

Pursuant to Pa. Code 69.721(f), enclosed are two copies each of Aqua Pennsylvania's Original Cost Study valuation for the Bristol Township Water System.

If you have any questions regarding this filing, please contact me at (610) 645-4241.

Sincerely,

Meghan Kreszwick
Manager of Rates – PA & NJ

MPK/
Certificate of Service

AQUA PENNSYLVANIA, INC.

***ACQUISITION OF THE
BRISTOL TOWNSHIP'S WATER SYSTEM***

Original Cost of Water Utility Plant and
Depreciation Reserve Calculations
As of July 31, 2013

David A. Sheffer, Senior Associate
Gary D. Shambaugh, Principal & Director

AUS CONSULTANTS
275 Grandview Avenue, Suite 100
Camp Hill, PA 17011
www.ausinc.com

March 2014

AQUA PENNSYLVANIA, INC.

Acquisition of The Bristol Township's Water System

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AQUA PENNSYLVANIA, INC.

Acquisition of The Bristol Township's Water System

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PA PUBLIC UTILITY COMMISSION
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SECTION 1

AQUA PENNSYLVANIA, INC.

Acquisition of Bristol Township's Water System

Executive Summary

BACKGROUND

Bristol Township ("Township") provides water service to approximately 574 customers located in the area known as the Newportville-Ferguson & Keystone Park, situated in a portion of Bristol Township, Bucks County, Pennsylvania. The Township began providing water service in the early 1970's and has continued to grow and expand over the years.

On December 28, 2011, Aqua Pennsylvania, Inc. ("Aqua-Pa") and the Township filed an application requesting the Commission to approve the sale of the water system and grant Aqua-Pa the right to furnish service in Bristol Township and authorizing the Township to abandon service.

Aqua-Pa has retained AUS Consultants to prepare a study of the original cost of the fixed capital assets acquired and theoretical depreciation calculations as of July 31, 2013. The results of that study are set forth herein.

OVERVIEW OF THE TOWNSHIP'S FACILITIES

The Township's assets to be acquired consist of facilities for the distribution of water to its customers. The distribution system consists of approximately 68,000 linear feet of pipe, plus the associated valves, air release valves, hydrants, valve boxes, services and meters. All of the customers are metered and the water system also provides fire protection service.

OVERVIEW OF THE STUDY TECHNIQUES

The study of the original cost of the Bristol Township's assets was conducted in two (2) phases. First, a comprehensive utility plant inventory was conducted to ascertain and confirm the kind and quantity of property owned and operated by the Township.

Second, the original cost of the inventoried property was to be determined. Original Construction Cost was not able to be located or obtained from the Township. In addition, Aqua-Pa requested theoretical accrued depreciation calculations performed *based upon the results of the original cost study to reflect the theoretical capital recovery of the plant in service at July 31, 2013.*

A complete discussion of the methodologies employed in the original cost study is set forth in the following sections of this report.

EXPLANATION OF THE STUDY

Utility Plant Inventory

A comprehensive inventory of the Township's water system in service as of July 31, 2013 was performed. The main principal source of documents for the inventory was the "as built" map of the Township's water system, which was verified by a physical inspection. The map was particularly helpful in locating and documenting the sizes, types, and lengths of the pipelines and sizes, types, and locations of accessories, such as valves, and fire hydrants. Significantly components of the inventory are discussed below.

Mass Property

For purposes of this study, "mass" property consists of utility plant recorded in Account 331 (Mains and Accessories), Account 333 (Services), Account 334 (Meters)

and Account 335 (Hydrants).

For Account 331, footage of pipe, by size and type, were determined by reviewing the "as-built" map and were verified by a physical check of the distribution system in place. Due to the lack of information on the installation years of the plant, on each street during the physical inspection, the casting date on each fire hydrant was noted. This information was then utilized in determining the estimated installation date for the mains and accessories installed in that area. This same procedure was utilized for valves, valve boxes, and air release valves on a street by street basis.

For customer service lines (account 333) and meters (Account 334) a customer billing list was obtained from Aqua-Pa and the Township. The customer billing list was employed in determining the number and size of the services and meters. The installed years were again based upon the estimated installed date of the main, which was determined by utilizing the casting date on the fire hydrants as a guide for estimating the installed years. For Account 335, fire hydrant locations were determined by reviewing the "as-built" map and were verified by a physical check. The same method, as discussed above, was used in estimating the installed years.

The original cost of all inventoried property units is properly recorded in the following accounts:

<u>Acct.</u> <u>No.</u>	<u>Account Title</u>
331	Mains and Accessories
333	Services
334	Meters
335	Hydrants

ORIGINAL COST ANALYSIS

The goal of the original cost analysis was to ascertain the value of the

Township's surviving water plant in service by fixed capital account and within each account, to determine the original costs by size and type (for mass property) and by vintage year. The original cost determinations for Account 331 (Mains and Accessories), Account 333 (Services), Account 334 (Meters) and Account 335 (Hydrants) are explained below.

Account 331, Account 333, Account 334 and Account 335

As previously explained, the information contained on the Township map was used to develop the footage of pipe, size of pipe, as well as the location and number of valves and hydrants. This was then verified by conducting a physical inventory of the system. During the physical inventory, the footage and accuracy of the map was verified, also the cast date and location of each fire hydrants was noted. It was the casting dates on the hydrant which was utilized in estimating the age assets.

Due to the absence of construction cost and other source documents, the original cost of mains and accessories were determinable from utilizing current unitized installed cost from Aqua-Pa of similar material. This information was used for the resultant unit price for the respective fixed capital asset.

The original cost values at July 31, 2013 for the Township's mains, customer services, meters, and fire hydrants was established by the original cost study total \$5,166,311; \$441,589; \$139,959 and \$127,167, respectively.

SUMMARY OF ORIGINAL COST

The results of the original cost study established that the original cost of the Township's utility plant in service is not less than \$5,875,026, as summarized by Plant Account in Section 2 (p. 2-1)

CONTRIBUTIONS IN AID OF CONSTRUCTION

AUS Consultants completed an extensive research of records to determine if any contributions in aid of construction (CIAC) existed. The record research included all Township documents that were available and discussed with Aqua-Pa personnel. Based on the available information, the water system received or collected CIAC. The calculated CIAC amounts to \$240,022. The results of those calculations and detailed supporting schedules are included in Section 3 of this report.

CUSTOMER ADVANCES FOR CONSTRUCTION

AUS Consultants completed an extensive research of records to determine if any customer advances for construction (CAC) existed. The record research included all documents that were available. Based on this record research, the water system was not funded by customer advances for construction.

DEPRECIATION RESERVE

ASU Consultants, as requested, prepared a theoretical calculated depreciation reserve of the utility plant in service at July 31, 2013. The calculated accrued depreciation reserve amounts to \$1,959,461 at July 31, 2013.

The calculations were based upon the Broad Group/Remaining Life Procedure and Technique utilizing appropriate service lives and mortality curves for the specific fixed capital assets by category and condition of the plant at the study date. The results of those calculations and detailed supporting documentation are included in Section 3 of this report.

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SECTION 2

Aqua Pennsylvania, Inc.

Acquisition of the Bristol Township's Water System

Original Cost at July 31, 2013

Acct No.	Account Title	Original Cost
331	Mains & Accessories	\$5,166,311.00
333	Services	441,589.00
334	Meters	139,959.00
335	Hydrants	127,167.00
	Total Original Cost	----- \$5,875,026.00
 <u>Deduct: Contributions in Aid of Construction (CIAC):</u>		
331	Mains & Accessories	\$ 214,804.00
333	Services	15,671.00
335	Hydrants	9,547.00
	Total Contributions in Aid of Construction	----- \$ 240,022.00
	Total Net Plant	===== \$5,635,004.00 =====

Aqua Pennsylvania, Inc.

Acquisition of the Bristol Township's Water System

Original Cost at July 31, 2013

Account 331 - Mains & Accessories

Item	Year Installed	----- Quantity ----- Unit	No.	Original Cost
6" D.I. Mains	1984	LF	1,275	\$ 75,659.00
6" D.I. Mains	1988	LF	5,015	331,692.00
6" D.I. Mains	1989	LF	8,950	621,399.00
6" D.I. Mains	2007	LF	1,715	214,804.00
8" D.I. Mains	1971	LF	1,018	23,160.00
8" D.I. Mains	1979	LF	2,900	125,831.00
8" D.I. Mains	1984	LF	3,620	214,811.00
8" D.I. Mains	1988	LF	1,665	110,123.00
8" D.I. Mains	1989	LF	4,672	324,377.00
10" D.I. Mains	1971	LF	3,720	124,657.00
10" D.I. Mains	1972	LF	1,850	63,289.00
10" D.I. Mains	1982	LF	1,340	103,247.00
10" D.I. Mains	1984	LF	3,400	297,194.00
10" D.I. Mains	1985	LF	2,510	228,937.00
10" D.I. Mains	1988	LF	1,690	164,657.00
10" D.I. Mains	1989	LF	9,113	931,987.00
12" D.I. Mains	1971	LF	3,125	112,813.00
12" D.I. Mains	1979	LF	880	60,597.00
12" D.I. Mains	1987	LF	1,850	185,222.00
12" D.I. Mains	1989	LF	6,564	723,156.00
16" D.I. Mains	1972	LF	645	25,110.00
16" D.I. Mains	1989	LF	707	82,295.00
Total Mains			----- 68,224	----- \$ 5,145,017.00

Aqua Pennsylvania, Inc.

Acquisition of the Bristol Township's Water System

Original Cost at July 31, 2013

Account 331 - Mains & Accessories

Item	Year Installed	----- Quantity ----- Unit	No.	Original Cost
6" Valves	1984	Ea.	4	\$ 1,057.00
6" Valves	1988	Ea.	5	1,472.00
6" Valves	1989	Ea.	11	3,400.00
8" Valves	1971	Ea.	1	101.00
8" Valves	1979	Ea.	1	193.00
8" Valves	1984	Ea.	4	1,057.00
8" Valves	1988	Ea.	3	883.00
8" Valves	1989	Ea.	7	2,164.00
10" Valves	1971	Ea.	7	709.00
10" Valves	1972	Ea.	4	413.00
10" Valves	1973	Ea.	2	209.00
10" Valves	1982	Ea.	1	233.00
10" Valves	1984	Ea.	8	2,113.00
10" Valves	1985	Ea.	4	1,103.00
10" Valves	1989	Ea.	9	2,782.00
12" Valves	1971	Ea.	7	709.00
12" Valves	1979	Ea.	1	193.00
12" Valves	1987	Ea.	2	562.00
12" Valves	1989	Ea.	4	1,236.00
16" Valves	1972	Ea.	3	310.00
Total Valves			88	\$ 20,899.00
Check Valve	1971	Ea.	1	\$ 101.00
Total Check Valves			1	\$ 101.00

Aqua Pennsylvania, Inc.

Acquisition of the Bristol Township's Water System

Original Cost at July 31, 2013

Account 331 - Mains & Accessories

<u>Item</u>	<u>Year Installed</u>	<u>----- Quantity ----- Unit</u>	<u>----- No.</u>		<u>Original Cost</u>
Air Release	1988	Ea.	1	\$	294.00
			---		-----
			1	\$	294.00

TOTAL ACCOUNT 331				\$	5,166,311.00
					=====

Aqua Pennsylvania, Inc.

Acquisition of the Bristol Township's Water System

Original Cost at July 31, 2013

Account 333 - Services

Item	Year Installed	----- Quantity ----- Unit	No.		Original Cost
Services, 3/4"	1971	Ea.	3	\$	715.00
Services, 3/4"	1973	Ea.	6		1,606.00
Services, 3/4"	1979	Ea.	36		15,414.00
Services, 3/4"	1982	Ea.	16		8,478.00
Services, 3/4"	1984	Ea.	56		32,220.00
Services, 3/4"	1985	Ea.	34		20,108.00
Services, 3/4"	1987	Ea.	1		615.00
Services, 3/4"	1988	Ea.	161		105,556.00
Services, 3/4"	1989	Ea.	151		104,253.00
Services, 3/4"	2002	Ea.	17		16,377.00
Services, 3/4"	2007	Ea.	12		15,671.00
Services, 1"	1971	Ea.	3		715.00
Services, 1"	1972	Ea.	21		5,395.00
Services, 1"	1979	Ea.	15		6,423.00
Services, 1"	1987	Ea.	1		615.00
Services, 1 1/2"	1971	Ea.	2		476.00
Services, 1 1/2"	1973	Ea.	2		535.00
Services, 1 1/2"	1979	Ea.	4		1,713.00
Services, 1 1/2"	1988	Ea.	1		656.00
Services, 1 1/2"	1989	Ea.	2		1,381.00
Services, 2"	1971	Ea.	2		704.00
Services, 2"	1973	Ea.	6		2,372.00
Services, 2"	1979	Ea.	2		1,265.00
Services, 2"	1987	Ea.	4		3,638.00
Services, 2"	1988	Ea.	3		2,906.00
Services, 2"	1989	Ea.	5		5,101.00

Aqua Pennsylvania, Inc.

Acquisition of the Bristol Township's Water System

Original Cost at July 31, 2013

Account 333 - Services

Item	Year Installed	----- Quantity ----- Unit	No.	Original Cost
Services, 3"	1973	Ea.	3	1,072.00
Services, 3"	1979	Ea.	3	1,715.00
Services, 3"	1988	Ea.	1	876.00
Services, 3"	1989	Ea.	1	922.00
Services, 4"	1973	Ea.	1	885.00
Services, 4"	1987	Ea.	1	2,036.00
Services, 4"	1988	Ea.	1	2,169.00
Services, 4"	1989	Ea.	1	2,284.00
Services, 6"	1971	Ea.	1	690.00
Services, 6"	1973	Ea.	7	5,424.00
Services, 6"	1979	Ea.	14	17,357.00
Services, 6"	1987	Ea.	2	3,564.00
Services, 6"	1989	Ea.	6	11,995.00
Services, 8"	1971	Ea.	2	1,900.00
Services, 8"	1973	Ea.	8	8,539.00
Services, 8"	1979	Ea.	4	6,831.00
Services, 8"	1987	Ea.	1	2,455.00
Services, 8"	1989	Ea.	2	5,507.00
Services, 10"	1988	Ea.	4	10,460.00
TOTAL ACCOUNT 333			----- 629 =====	\$ 441,589.00 =====

Aqua Pennsylvania, Inc.

Acquisition of the Bristol Township's Water System

Original Cost at July 31, 2013

Account 334 - Meters

Item	Year Installed	----- Quantity ----- Unit	No.	Original Cost
Meters, 5/8" x 3/4"	1971	Ea.	3	\$ 179.00
Meters, 5/8" x 3/4"	1973	Ea.	6	331.00
Meters, 5/8" x 3/4"	1979	Ea.	36	2,146.00
Meters, 5/8" x 3/4"	1982	Ea.	16	1,130.00
Meters, 5/8" x 3/4"	1984	Ea.	56	4,575.00
Meters, 5/8" x 3/4"	1985	Ea.	34	2,533.00
Meters, 5/8" x 3/4"	1987	Ea.	1	76.00
Meters, 5/8" x 3/4"	1988	Ea.	161	12,440.00
Meters, 5/8" x 3/4"	1989	Ea.	151	12,501.00
Meters, 5/8" x 3/4"	2002	Ea.	17	1,942.00
Meters, 5/8" x 3/4"	2007	Ea.	12	1,697.00
Meters, 1"	1971	Ea.	3	202.00
Meters, 1"	1972	Ea.	21	1,388.00
Meters, 1"	1979	Ea.	15	1,010.00
Meters, 1"	1987	Ea.	1	85.00
Meters, 1 1/2"	1971	Ea.	2	310.00
Meters, 1 1/2"	1973	Ea.	2	287.00
Meters, 1 1/2"	1979	Ea.	4	619.00
Meters, 1 1/2"	1988	Ea.	1	201.00
Meters, 1 1/2"	1989	Ea.	2	430.00
Meters, 2"	1971	Ea.	2	337.00
Meters, 2"	1973	Ea.	6	936.00
Meters, 2"	1979	Ea.	2	337.00
Meters, 2"	1987	Ea.	4	855.00
Meters, 2"	1988	Ea.	3	655.00
Meters, 2"	1989	Ea.	5	1,170.00

Aqua Pennsylvania, Inc.

Acquisition of the Bristol Township's Water System

Original Cost at July 31, 2013

Account 334 - Meters

Item	Year Installed	----- Quantity ----- Unit	No.	Original Cost
Meters, 3"	1973	Ea.	3	1,380.00
Meters, 3"	1979	Ea.	3	1,491.00
Meters, 3"	1988	Ea.	1	644.00
Meters, 3"	1989	Ea.	1	690.00
Meters, 4"	1973	Ea.	1	645.00
Meters, 4"	1987	Ea.	1	883.00
Meters, 4"	1988	Ea.	1	902.00
Meters, 4"	1989	Ea.	1	967.00
Meters, 6"	1971	Ea.	1	1,167.00
Meters, 6"	1973	Ea.	7	7,566.00
Meters, 6"	1979	Ea.	14	16,343.00
Meters, 6"	1987	Ea.	2	2,962.00
Meters, 6"	1989	Ea.	6	9,728.00
Meters, 8"	1971	Ea.	2	4,083.00
Meters, 8"	1973	Ea.	8	15,123.00
Meters, 8"	1979	Ea.	4	8,166.00
Meters, 8"	1987	Ea.	1	2,590.00
Meters, 8"	1989	Ea.	2	5,671.00
Meters, 10"	1988	Ea.	4	10,586.00
TOTAL ACCOUNT 334			629	\$ 139,959.00

Aqua Pennsylvania, Inc.

Acquisition of the Bristol Township's Water System

Original Cost at July 31, 2013

Account 335 - Fire Hydrants

Item	Year Installed	----- Quantity ----- Unit	No.	Original Cost
Fire Hydrants	1971	Ea.	4	\$ 2,322.00
Fire Hydrants	1972	Ea.	4	2,504.00
Fire Hydrants	1973	Ea.	4	2,609.00
Fire Hydrants	1979	Ea.	5	5,217.00
Fire Hydrants	1982	Ea.	2	2,582.00
Fire Hydrants	1984	Ea.	13	18,227.00
Fire Hydrants	1985	Ea.	3	4,324.00
Fire Hydrants	1987	Ea.	2	3,000.00
Fire Hydrants	1988	Ea.	10	15,977.00
Fire Hydrants	1989	Ea.	32	53,841.00
Fire Hydrants	1990	Ea.	1	1,709.00
Fire Hydrants	1994	Ea.	1	1,956.00
Fire Hydrants	2007	Ea.	3	9,547.00
Fire Hydrants	2008	Ea.	1	3,352.00
TOTAL ACCOUNT 335			85	\$ 127,167.00

Aqua Pennsylvania, Inc.

Acquisition of the Bristol Township's Water System

Contributions in Aid of Construction

Original Cost at July 31, 2013

Account 331 - Mains & Accessories

<u>Item</u>	<u>Year Installed</u>	<u>----- Quantity ----- Unit</u>	<u>----- No.</u>	<u>Original Cost</u>
6" D.I. Mains	2007	LF	1,715	\$ 214,804.00
TOTAL ACCOUNT 331			1,715	\$ 214,804.00

Contributions in Aid of Construction
Original Cost at July 31, 2013

Account 333 - Services

Item	Year Installed	----- Quantity ----- Unit	----- No.	Original Cost
1" & Under Services	2007	Ea.	12 \$	15,671.00
TOTAL ACCOUNT 333			----- 12 \$	----- 15,671.00
			=====	=====

Aqua Pennsylvania, Inc.

Acquisition of the Bristol Township's Water System

Contributions in Aid of Construction

Original Cost at July 31, 2013

Account 335 - Fire Hydrants

<u>Item</u>	<u>Year Installed</u>	<u>----- Quantity ----- Unit</u>	<u>----- No.</u>		<u>Original Cost</u>
Fire Hydrants	2007	Ea.	3	\$	9,547.00
TOTAL ACCOUNT 335			<u>3</u>	<u>\$</u>	<u>9,547.00</u>

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Aqua Pennsylvania, Inc.

Acquisition of the Bristol Township's Water System

Summary of Original Cost, Calculated Depreciation Reserve
and Depreciation Original Cost as of July 31, 2013
Based Upon Whole Life Depreciation

Acct. No.	Description	Original Cost at 7/31/2013	ASL/lowa Curve	Calculated Depreciation Reserve	Depreciated Original Cost at 7/31/2013
Depreciable Plant:					
<u>Mains & Accessories</u>					
331.12	Ductile Iron Pipe, 6" - 8"	\$ 2,041,856.00	65-R3	\$ 707,773.00	\$ 1,334,083.00
331.13	Ductile Iron Pipe, 10" - 14"	2,995,756.00	90-R3	866,799.00	2,128,957.00
331.14	Ductile Iron Pipe, 16" & Over	107,405.00	95-R3	30,256.00	77,149.00
331.22	Valves, 6" - 8"	10,327.00	45-R3	5,356.00	4,971.00
331.23	Valves, 10" - 14"	10,262.00	70-R3	4,037.00	6,225.00
331.24	Valves, 16" & Over	310.00	75-R3	155.00	155.00
331.51	Check Valve	101.00	25-R3	99.00	2.00
331.52	Air Release	294.00	25-R3	235.00	59.00
	Total Account 331	\$ 5,166,311.00		\$ 1,614,710.00	\$ 3,551,601.00
<u>Services</u>					
333.10	Services, 1" & Under	\$ 334,161.00	55-R3	\$ 140,161.00	\$ 194,000.00
333.20	Services, Over 1"	107,428.00	60-R3	50,192.00	57,236.00
	Total Account 333	\$ 441,589.00		\$ 190,353.00	\$ 251,236.00
<u>Meters</u>					
334.10	Meters, 1" & Under	\$42,235.00	30-R3	\$ 29,610.00	\$ 12,625.00
334.20	Meters, Over 1"	97,724.00	30-R3	79,454.00	18,270.00
	Total Account 334	\$139,959.00		\$109,064.00	\$30,895.00
335.00	Hydrants	127,167.00	65-R3	\$ 45,334.00	\$ 81,833.00
	Total Depreciable Plant	\$ 5,875,026.00		\$ 1,959,461.00	\$ 3,915,565.00
Deduct: Contributions in Aid of Construction (CIAC):					
331.12	Ductile Iron Pipe, 6" - 8"	\$ 214,804.00	65-R3	\$ 19,679.00	\$ 195,125.00
333.10	Services, 1" & Under	15,671.00	55-R3	1,695.00	13,976.00
335.00	Hydrants	9,547.00	65-R3	875.00	8,672.00
	Total Contributions in Aid of Construction	\$ 240,022.00		\$ 22,249.00	\$ 217,773.00
	Total Net Plant	\$ 5,635,004.00		\$ 1,937,212.00	\$ 3,697,792.00

Aqua-Pennsylvania, Inc.

Bristol Township

331.12 D.I. Pipe - Mains, 6" to 8"

Original Cost Of Utility Plant In Service

And Development Of Calculated Depr Reserve as of July 31, 2013

Based Upon Broad Group/Remaining Life Procedure and Technique

Salvage Value: 0% Average Service Life: 65 Survivor Curve: R3

<i>Year</i>	<i>Original Cost</i>	<i>Expectancy</i>	<i>Avg. Service Life</i>	<i>Reserve Ratio</i>	<i>Calculated Reserve</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1971	23,160.00	27.38	65.00	0.57878	13,404
1979	125,831.00	33.66	65.00	0.48213	60,667
1984	290,470.00	37.84	65.00	0.41780	121,360
1988	441,815.00	41.32	65.00	0.36435	160,974
1989	945,776.00	42.20	65.00	0.35071	331,689
2007	214,804.00	59.05	65.00	0.09161	19,679
<i>Total</i>	<i>2,041,856.00</i>				<i>707,772.66</i>

Aqua-Pennsylvania, Inc.

Bristol Township

331.13 D.I. Pipe - Mains, 10" to 14"

Original Cost Of Utility Plant In Service

And Development Of Calculated Depr Reserve as of July 31, 2013

Based Upon Broad Group/Remaining Life Procedure and Technique

Salvage Value: 0 % Average Service Life: 90 Survivor Curve: R3

Year	Original Cost	Expectancy	Avg. Service Life	Reserve Ratio	Calculated Reserve
(1)	(2)	(3)	(4)	(5)	(6)
1971	237,470.00	50.86	90.00	0.43494	103,286
1972	63,289.00	51.70	90.00	0.42553	26,931
1979	60,597.00	57.78	90.00	0.35798	21,692
1982	103,247.00	60.46	90.00	0.32825	33,891
1984	297,194.00	62.27	90.00	0.30816	91,583
1985	228,937.00	63.18	90.00	0.29806	68,236
1987	185,222.00	65.01	90.00	0.27771	51,438
1988	164,657.00	65.93	90.00	0.26748	44,042
1989	1,655,143.00	66.85	90.00	0.25720	425,699
Total	2,995,756.00				866,799.24

Aqua-Pennsylvania, Inc.

Bristol Township

331.14 D.I. Pipe - Mains, 16" & Over

Original Cost Of Utility Plant In Service

And Development Of Calculated Depr Reserve as of July 31, 2013

Based Upon Broad Group/Remaining Life Procedure and Technique

Salvage Value: 0% Average Service Life: 95 Survivor Curve: R3

<i>Year</i>	<i>Original Cost</i>	<i>Expectancy</i>	<i>Avg. Service Life</i>	<i>Reserve Ratio</i>	<i>Calculated Reserve</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1972	25,110.00	56.53	95.00	0.40493	10,168
1989	82,295.00	71.81	95.00	0.24410	20,088
<i>Total</i>	<i>107,405.00</i>				<i>30,255.74</i>

Aqua-Pennsylvania, Inc.

Bristol Township

331.22 Valves, 6" - 8"

Original Cost Of Utility Plant In Service

And Development Of Calculated Depr Reserve as of July 31, 2013

Based Upon Broad Group/Remaining Life Procedure and Technique

Salvage Value: 0 % Average Service Life: 45 Survivor Curve: R3

<i>Year</i>	<i>Original Cost</i>	<i>Expectancy</i>	<i>Avg. Service Life</i>	<i>Reserve Ratio</i>	<i>Calculated Reserve</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1971	101.00	10.54	45.00	0.76579	77
1979	193.00	15.41	45.00	0.65754	127
1984	2,114.00	18.99	45.00	0.57792	1,222
1988	2,355.00	22.10	45.00	0.50889	1,198
1989	5,564.00	22.91	45.00	0.49099	2,732
<i>Total</i>	10,327.00				5,356.24

Aqua-Pennsylvania, Inc.

Bristol Township

331.23 Valves, 10" - 14"

Original Cost Of Utility Plant In Service

And Development Of Calculated Depr Reserve as of July 31, 2013

Based Upon Broad Group/Remaining Life Procedure and Technique

Salvage Value: 0 % Average Service Life: 70 Survivor Curve: R3

Year	Original Cost	Expectancy	Avg. Service Life	Reserve Ratio	Calculated Reserve
(1)	(2)	(3)	(4)	(5)	(6)
1971	1,418.00	31.96	70.00	0.54343	771
1972	413.00	32.74	70.00	0.53229	220
1973	209.00	33.53	70.00	0.52100	109
1979	193.00	38.42	70.00	0.45118	87
1982	233.00	40.96	70.00	0.41489	97
1984	2,113.00	42.68	70.00	0.39026	825
1985	1,103.00	43.56	70.00	0.37777	417
1987	562.00	45.32	70.00	0.35257	198
1989	4,018.00	47.11	70.00	0.32704	1,314
Total	10,262.00				4,036.53

Aqua-Pennsylvania, Inc.

Bristol Township

331.24 Valves" 16" & Over

Original Cost Of Utility Plant In Service

And Development Of Calculated Depr Reserve as of July 31, 2013

Based Upon Broad Group/Remaining Life Procedure and Technique

Salvage Value: 0 % Average Service Life: 75 Survivor Curve: R3

Year	Original Cost	Expectancy	Avg. Service Life	Reserve Ratio	Calculated Reserve
(1)	(2)	(3)	(4)	(5)	(6)
1972	310.00	37.41	75.00	0.50116	155
Total	310.00				155.36

Aqua-Pennsylvania, Inc.
Bristol Township
 331.51 Check Valve

Original Cost Of Utility Plant In Service
And Development Of Calculated Depr Reserve as of July 31, 2013
Based Upon Broad Group/Remaining Life Procedure and Technique

Salvage Value: 0% Average Service Life: 25 Survivor Curve: R3

<i>Year</i>	<i>Original Cost</i>	<i>Expectancy</i>	<i>Avg. Service Life</i>	<i>Reserve Ratio</i>	<i>Calculated Reserve</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1971	101.00	0.50	25.00	0.98000	99
Total	101.00				98.98

Aqua-Pennsylvania, Inc.
Bristol Township
 331.52 Air Release

Original Cost Of Utility Plant In Service
And Development Of Calculated Depr Reserve as of July 31, 2013
Based Upon Broad Group/Remaining Life Procedure and Technique

Salvage Value: 0% Average Service Life: 25 Survivor Curve: R3

<i>Year</i>	<i>Original Cost</i>	<i>Expectancy</i>	<i>Avg. Service Life</i>	<i>Reserve Ratio</i>	<i>Calculated Reserve</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1988	294.00	5.01	25.00	0.79944	235
Total	294.00				235.04

Aqua-Pennsylvania, Inc.

Bristol Township

333.10 Services, 1" & Under

Original Cost Of Utility Plant In Service

And Development Of Calculated Depr Reserve as of July 31, 2013

Based Upon Broad Group/Remaining Life Procedure and Technique

Salvage Value: 0 % Average Service Life: 55 Survivor Curve: R3

<i>Year</i>	<i>Original Cost</i>	<i>Expectancy</i>	<i>Avg. Service Life</i>	<i>Reserve Ratio</i>	<i>Calculated Reserve</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1971	1,430.00	18.55	55.00	0.66282	948
1972	5,395.00	19.23	55.00	0.65042	3,509
1973	1,606.00	19.92	55.00	0.63780	1,024
1979	21,837.00	24.33	55.00	0.55771	12,179
1982	8,478.00	26.67	55.00	0.51510	4,367
1984	32,220.00	28.28	55.00	0.48576	15,651
1985	20,108.00	29.10	55.00	0.47085	9,468
1987	1,230.00	30.77	55.00	0.44053	542
1988	105,556.00	31.62	55.00	0.42517	44,879
1989	104,253.00	32.47	55.00	0.40961	42,703
2002	16,377.00	44.26	55.00	0.19524	3,197
2007	15,671.00	49.05	55.00	0.10812	1,694
Total	334,161.00				140,161.29

Aqua-Pennsylvania, Inc.

Bristol Township

333.20 Services, Over 1"

Original Cost Of Utility Plant In Service

And Development Of Calculated Depr Reserve as of July 31, 2013

Based Upon Broad Group/Remaining Life Procedure and Technique

Salvage Value: 0 % Average Service Life: 60 Survivor Curve: R3

Year	Original Cost	Expectancy	Avg. Service Life	Reserve Ratio	Calculated Reserve
(1)	(2)	(3)	(4)	(5)	(6)
1971	3,770.00	22.90	60.00	0.61837	2,331
1973	18,827.00	24.35	60.00	0.59412	11,185
1979	28,881.00	28.96	60.00	0.51739	14,943
1987	11,693.00	35.59	60.00	0.40688	4,758
1988	17,067.00	36.45	60.00	0.39248	6,699
1989	27,190.00	37.32	60.00	0.37794	10,276
Total	107,428.00				50,191.67

Aqua-Pennsylvania, Inc.
Bristol Township
334.10 Meters, 1" & Under

Original Cost Of Utility Plant In Service
And Development Of Calculated Depr Reserve as of July 31, 2013
Based Upon Broad Group/Remaining Life Procedure and Technique

Salvage Value: 0% Average Service Life: 30 Survivor Curve: R3

<i>Year</i>	<i>Original Cost</i>	<i>Expectancy</i>	<i>Avg. Service Life</i>	<i>Reserve Ratio</i>	<i>Calculated Reserve</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1971	381.00	2.15	30.00	0.92842	354
1972	1,388.00	2.40	30.00	0.91985	1,277
1973	331.00	2.66	30.00	0.91124	302
1979	3,156.00	4.40	30.00	0.85329	2,693
1982	1,130.00	5.57	30.00	0.81437	920
1984	4,575.00	6.50	30.00	0.78328	3,583
1985	2,533.00	7.01	30.00	0.76617	1,941
1987	161.00	8.14	30.00	0.72878	117
1988	12,440.00	8.74	30.00	0.70865	8,816
1989	12,501.00	9.37	30.00	0.68753	8,595
2002	1,942.00	19.51	30.00	0.34975	679
2007	1,697.00	24.11	30.00	0.19643	333
Total	42,235.00				29,609.85

Aqua-Pennsylvania, Inc.

Bristol Township

334.20 Meters, Over 1"

Original Cost Of Utility Plant In Service

And Development Of Calculated Depr Reserve as of July 31, 2013

Based Upon Broad Group/Remaining Life Procedure and Technique

Salvage Value: 0% Average Service Life: 30 Survivor Curve: R3

<i>Year</i>	<i>Original Cost</i>	<i>Expectancy</i>	<i>Avg. Service Life</i>	<i>Reserve Ratio</i>	<i>Calculated Reserve</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1971	5,897.00	2.15	30.00	0.92842	5,475
1973	25,937.00	2.66	30.00	0.91124	23,635
1979	26,956.00	4.40	30.00	0.85329	23,001
1987	7,290.00	8.14	30.00	0.72878	5,313
1988	12,988.00	8.74	30.00	0.70865	9,204
1989	18,656.00	9.37	30.00	0.68753	12,827
Total	97,724.00				79,454.37

Aqua-Pennsylvania, Inc.

Bristol Township

335.00 Hydrants

Original Cost Of Utility Plant In Service

And Development Of Calculated Depr Reserve as of July 31, 2013

Based Upon Broad Group/Remaining Life Procedure and Technique

Salvage Value: 0% Average Service Life: 65 Survivor Curve: R3

<i>Year</i>	<i>Original Cost</i>	<i>Expectancy</i>	<i>Avg. Service Life</i>	<i>Reserve Ratio</i>	<i>Calculated Reserve</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1971	2,321.60	27.38	65.00	0.57878	1,344
1972	2,504.20	28.14	65.00	0.56714	1,420
1973	2,608.56	28.90	65.00	0.55541	1,449
1979	5,217.10	33.66	65.00	0.48213	2,515
1982	2,582.46	36.15	65.00	0.44388	1,146
1984	18,227.30	37.84	65.00	0.41780	7,615
1985	4,323.69	38.70	65.00	0.40458	1,749
1987	2,999.84	40.44	65.00	0.37785	1,133
1988	15,977.40	41.32	65.00	0.36435	5,821
1989	53,840.64	42.20	65.00	0.35071	18,882
1990	1,708.60	43.09	65.00	0.33701	576
1994	1,956.41	46.72	65.00	0.28117	550
2007	9,547.29	59.05	65.00	0.09161	875
2008	3,351.99	60.02	65.00	0.07665	257
<i>Total</i>	127,167.08				45,333.58

Aqua-Pennsylvania, Inc.
Bristol Township- CIAC
331.12 D.I. Pipe - Mains, 6" to 8"

Original Cost Of Utility Plant In Service
And Development Of Calculated Depr Reserve as of July 31, 2013
Based Upon Broad Group/Remaining Life Procedure and Technique

Salvage Value: 0% Average Service Life: 65 Survivor Curve: R3

<i>Year</i>	<i>Original Cost</i>	<i>Expectancy</i>	<i>Avg. Service Life</i>	<i>Reserve Ratio</i>	<i>Calculated Reserve</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
2007	214,804.00	59.05	65.00	0.09161	19,679
Total	214,804.00				19,678.76

Aqua-Pennsylvania, Inc.
Bristol Township- CIAC
 333.10 Services, 1" & Under

Original Cost Of Utility Plant In Service
And Development Of Calculated Depr Reserve as of July 31, 2013
Based Upon Broad Group/Remaining Life Procedure and Technique

Salvage Value: 0% Average Service Life: 55 Survivor Curve: R3

<i>Year</i>	<i>Original Cost</i>	<i>Expectancy</i>	<i>Avg. Service Life</i>	<i>Reserve Ratio</i>	<i>Calculated Reserve</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
2007	15,671.00	49.05	55.00	0.10812	1,694
Total	15,671.00				1,694.35

Aqua-Pennsylvania, Inc.
Bristol Township- CIAC
 335.00 Hydrants

Original Cost Of Utility Plant In Service
And Development Of Calculated Depr Reserve as of July 31, 2013
Based Upon Broad Group/Remaining Life Procedure and Technique

Salvage Value: 0% Average Service Life: 65 Survivor Curve: R3

<i>Year</i>	<i>Original Cost</i>	<i>Expectancy</i>	<i>Avg. Service Life</i>	<i>Reserve Ratio</i>	<i>Calculated Reserve</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
2007	9,547.00	59.05	65.00	0.09161	875
Total	9,547.00				874.63

AQUA PENNSYLVANIA, INC.
CERTIFICATE OF SERVICE

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Aqua Pennsylvania, Inc. : Original Cost Study – Bristol
Township Water System

CERTIFICATE OF SERVICE

I hereby certify that I have this day filed the Original Cost Study for the Bristol Township Water System with the PA Public Utility Commission and upon the person(s) and in the manner indicated below:

VIA EMAIL

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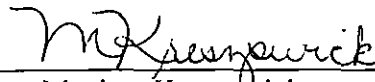
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JUL 25 2014

PA PUBLIC UTILITY COMMISSION
SECRETARY'S BUREAU

Edwin Rodrock
Festus Odubo
Bureau of Technical Utility Services
Two West Keystone
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17102
(email to hrodock@state.pa.us &
ebodubo@state.pa.us)

Dated: July 25, 2014



Meghan Kreszwick
Manager of Rates – PA & NJ

From: (610) 645-1128
Lora Fracek
Aqua America, Inc.
762 West Lancaster Avenue

Bryn Mawr, PA 19010

Origin ID: WAYA



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JUL 25 2014

PA PUBLIC UTILITY COMMISSION
SECRETARY'S BUREAU

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Rosemary Chiavetta, Secretary
PA Public Utility Commission
400 NORTH ST
Two North Keystone
HARRISBURG, PA 17120

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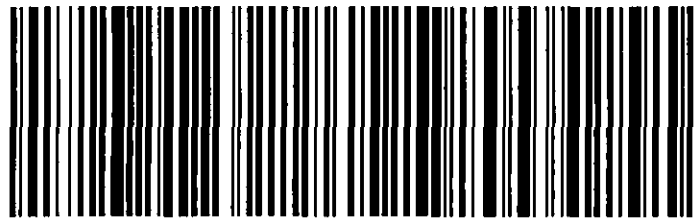
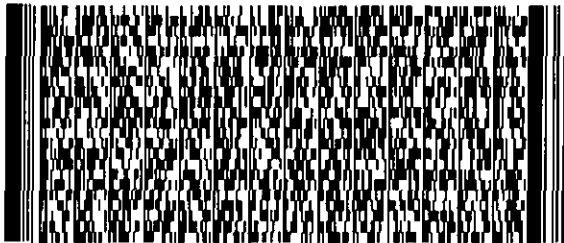
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