EXHIBIT X

TESTIMONY OF HAROLD WALKER, III

**AQUA STATEMENT NO. 8**
**Docket No. A-2019-3015173**

# AQUA PENNSYLVANIA WASTEWATER, INC.
BRYN MAWR, PENNSYLVANIA

DIRECT TESTIMONY
OF
HAROLD WALKER, III

FAIR MARKET VALUE APPRAISAL

DELAWARE COUNTY REGIONAL WATER
QUALITY CONTROL AUTHORITY
WASTEWATER SYSTEM ASSETS

March 2020

Prepared by:
GANNETT FLEMING
VALUATION AND RATE CONSULTANTS, LLC

Valley Forge, Pennsylvania

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## INTRODUCTION

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

A. My name is Harold Walker III and my business address is 1010 Adams Avenue, Audubon, Pennsylvania.

**Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

A. I am employed by Gannett Fleming Valuation and Rate Consultants, LLC ("Gannett Fleming") as Manager, Financial Studies.

**Q. WOULD YOU DESCRIBE BRIEFLY GANNETT FLEMING?**

A. Yes. Since 1915, Gannett Fleming and its predecessors have been helping clients in public pricing policy and related financial matters for managerial purposes, before regulatory commissions and courts of law. Gannett Fleming is registered as a Utility Valuation Expert ("UVE") in the Commonwealth of Pennsylvania. Gannett Fleming is also a registered Municipal Advisor with the SEC and I am a licensed Municipal Advisor Representative (Series 50) with the Municipal Securities Rulemaking Board ("MSRB") and the Financial Industry Regulatory Authority ("FINRA"). Gannett Fleming is a subsidiary of Gannett Fleming, Inc.

**Q. WHAT ARE YOUR RESPONSIBILITIES AS MANAGER, FINANCIAL STUDIES OF GANNETT FLEMING?**

A. I supervise and develop financial and economic studies on behalf of investor-owned and municipally owned water, wastewater, electric, natural gas distribution and transmission, oil pipeline, and telephone utilities, as well as resource-recovery companies.

**Q. PLEASE DESCRIBE YOUR QUALIFICATIONS AND YOUR EDUCATIONAL BACKGROUND AND EMPLOYMENT EXPERIENCE?**

A. My educational background, business experience and qualifications are provided in a Curriculum Vitae included as Appendix A.

**Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION?**

A. Yes. I have testified before the Pennsylvania Public Utility Commission ("Commission" or "PUC"), as well as other state regulatory commissions, on many occasions, as shown on Appendix A.

**Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

A. My testimony describes and explains the fair market value appraisal of the Delaware County Regional Water Quality Control Authority's ("DELCORA") wastewater system assets ("Wastewater System") that I and staff, working under my direction, performed. Gannett Fleming was engaged by Aqua Pennsylvania Wastewater, Inc. ("Aqua") to perform this appraisal. Our report is entitled "Delaware County Regional Water Quality Control Authority Wastewater System Assets Fair Market Value Appraisal at December 31, 2019." The appraisal and its report was developed to meet the criteria established in Section 1329 of the Pennsylvania Public Utility Code ("Code"), 66 Pa. C.S. § 1329 ("Determination of the fair market value of water and wastewater assets").

In its 2015-2016 legislative session, the Pennsylvania Legislature passed Act 12 of 2016 and Governor Wolf signed Act 12 into law adding Section 1329 of the Code which established the legislative requirements facilitating the acquisition of municipal and regional water and wastewater systems by private investor-owned utilities and other

entities which are rate-regulated by the Commission. This legislation was intended to facilitate the acquisition of water and wastewater systems in order to facilitate capital improvements to the water and or wastewater properties.

## QUALIFICATION AS UTILITY VALUATION EXPERT

**Q. IS GANNETT FLEMING ON THE COMMISSION'S REGISTRY OF UTILITY VALUATION EXPERTS?**

A. Yes. Gannett Fleming is a UVE in the Commonwealth of Pennsylvania approved by the PUC (Utility Code 9919244).

**Q. PLEASE DESCRIBE THE PROCESS BY WHICH GANNETT FLEMING WAS PLACED ON THE COMMISSION'S REGISTRY OF UTILITY VALUATION EXPERTS.**

A. After passage of Section 1329 of the Code, the Commission established an application process by which the Commission would approve and designate firms to be placed on the Commission's "Registry of Utility Valuation Experts." To be included on the registry, the UVEs must establish their qualifications. Gannett Fleming submitted its original application and the required proof of experience in September of 2016 and received confirmation and approval from the Commission of Gannett Fleming's placement on the Commission's UVE Registry in December of 2016. Renewal of Commission's UVE Registry must be done annually. Gannett Fleming submitted its 2018 renewal application and the required proof of experience in December of 2017 and received confirmation and approval from the Commission of Gannett Fleming's placement on the Commission's UVE Registry in January of 2018. In 2018, Gannett Fleming submitted its 2019 renewal application and the required proof of experience in December of 2018 and received

confirmation and approval from the Commission of Gannett Fleming's placement on the Commission's UVE Registry in January of 2019. Again in 2019, Gannett Fleming submitted its 2020 renewal application and the required proof of experience in December of 2019 and received confirmation and approval from the Commission of Gannett Fleming's placement on the Commission's UVE Registry in January of 2020.

**Q. HAVE YOU EVER HAD YOUR PROFESSIONAL CREDENTIALS REVOKED OR SUSPENDED?**

A. No.

**Q. DO YOU HAVE SPECIFIC EXPERIENCE WITH THE VALUATION AND APPRAISAL OF UTILITY ASSETS?**

A. Yes. In addition to serving as an expert witness on various financial and economic matters before utility regulatory commissions for over 30 years, I have also provided valuation of utility assets services for more than 20 years. In that capacity I have testified on valuation matters before the Commission and sponsored or adopted Gannett Fleming's UVE appraisals in Section 1329 of the Public Utility Code in the New Garden Township proceeding, the Limerick Township proceeding, the East Bradford Township proceeding, the Mahoning Township proceeding, the Exeter Township proceeding, the Cheltenham Township proceeding, the East Norriton Township proceeding and the Kane Borough proceeding. In addition to testifying in 1329 proceedings, I have also testified and filed reports on valuation matters in California, Illinois, New Hampshire and Pennsylvania in courts of law and regulatory commissions.[1]

[1] An electronic link to the PA PUC Dockets where I have testified in the last two years is provided in response to Section 1329 Application Standard Data Requests 15-d. All other testimony relating to valuation is more than two years old and therefore, is not provided.

**Q. HAVE YOU OR GANNETT FLEMING OR ANY OF ITS STAFF DERIVED ANY MATERIAL FINANCIAL BENEFIT FROM THE SALE OF THE WASTEWATER SYSTEM'S ASSETS OTHER THAN FEES FOR YOUR SERVICES RENDERED?**

A. No.

**Q. ARE YOU OR GANNETT FLEMING OR ANY OF ITS STAFF AN IMMEDIATE FAMILY MEMBER OF A DIRECTOR, OFFICER, OR EMPLOYEE OF EITHER AQUA OR DELCORA?**

A. No.

**Q. IS GANNETT FLEMING IN COMPLIANCE WITH APPLICABLE PENNSYLVANIA LAWS?**

A. Yes.

**Q. DOES GANNETT FLEMING HAVE THE FINANCIAL AND TECHNICAL FITNESS, INCLUDING PROFESSIONAL LICENSES AND TECHNICAL CERTIFICATIONS, TO PERFORM A FAIR MARKET VALUATION OF THE ASSETS OF DELCORA?**

A. Yes, to be placed on the Commission's "Registry of Utility Valuation Experts" Gannett Fleming had to establish its qualifications.

**Q. ARE YOU AWARE OF ANY FACT, INCLUDING BUT NOT LIMITED TO ANY POTENTIAL CONFLICT OF INTEREST THAT WOULD CAST DOUBT UPON YOUR ABILITY TO PROVIDE A THOROUGH, OBJECTIVE, UNBIASED, AND FAIR VALUATION IN THIS PROCEEDING?**

A. No.

**Q. HAVE YOU CORRESPONDED WITH SELLER'S UVE WITH REGARD TO ITS RESPECTIVE FAIR MARKET VALUE APPRAISAL OF THE ASSETS AT ISSUE IN THIS CASE?**

A. No.

**Q. DO YOU HAVE ANY AFFILIATION WITH EITHER THE SELLING UTILITY OR THE ACQUIRING PUBLIC UTILITY?**

A. No. Other than the current assignment to provide the subject appraisal, I have no business or personal relationships with any party to the proposed acquisition.

## FEES PAID FOR UTILITY VALUATION EXPERT SERVICES

**Q. WHAT IS THE GANNETT FLEMING FEE ARRANGEMENT TO DELIVER THE APPRAISAL?**

A. Gannett Fleming is being compensated on an hourly basis. Our fee arrangement is included as Exhibit S1 to the Application. True, correct, and complete copies of Gannett Fleming's invoices to Aqua for this matter, as of the date of Application filing, are also included in Exhibit S1.

**Q. WHAT IS THE ESTIMATED TOTAL COMPENSATION THAT GANNETT FLEMING WILL RECEIVE FOR ITS SERVICES IN THIS MATTER?**

A. The estimated total compensation that Gannett Fleming will receive for its services in this matter as of the date of Application filing is $31,250, which represents approximately 0.0076% of the fair market valuation. I estimate our fee will total $100,000 if this proceeding is fully litigated, which represents approximately 0.0245% of the fair market valuation.

**Q. PLEASE DESCRIBE THE PROCESS BY WHICH THIS COMPENSATION WAS NEGOTIATED?**

A. Gannett Fleming submitted a proposal to provide the required services in December 2019, which Aqua accepted.

**Q. ARE THESE FEES CONSISTENT WITH COMPENSATION RECEIVED FOR SIMILAR SERVICES PROVIDED TO OTHER CLIENTS?**

A. Yes.

**Q. WILL GANNETT RECEIVE ITS FEE REGARDLESS OF WHETHER THE COMMISSION APPROVES THE PROPOSED TRANSACTION OR WHETHER IT CLOSES?**

A. Yes. 66 Pa. C.S. § 1329(a)(3) mandates that I comply with the Uniform Standards of Professional Appraisal Practice ("USPAP") when developing an appraisal. Under the USPAP, I cannot perform the appraisal with bias, and acceptance of a fee contingent on a particular outcome, like closing or Commission approval, would violate the Ethics Rule.

**Q. ARE YOU ADVOCATING FOR ANY PARTY OR OUTCOME?**

A. No. The Ethics Rule of the USPAP, applicable here pursuant to 66 Pa. C.S. § 1329(a)(3), requires that I perform the appraisal with impartiality, objectivity, and independence, and without accommodation of personal interests. I have not performed this appraisal assignment with bias and I am not advocating the cause or interest of any party or issue. Further, I have not accepted this or any assignment that includes the reporting of predetermined opinions and conclusions.

## FAIR MARKET VALUATION OF WASTEWATER SYSTEM'S ASSETS

**Q. PLEASE IDENTIFY EXHIBIT Q TO THE APPLICATION IN THIS PROCEEDING?**

A. Exhibit Q of Aqua's Application includes Gannett Fleming's appraisal report dated February 22, 2020.

**Q. HOW DO YOU RECOGNIZE IT?**

A. I personally prepared, and also directed and supervised Gannett Fleming personnel in preparing, the report, and recognize it as Gannett Fleming's work product.

**Q. IS EXHIBIT Q A TRUE, COMPLETE, AND ACCURATE COPY OF YOUR VALUATION REPORT?**

A. Yes, and I incorporate it into my direct testimony as if set forth in its entirety.

**Q. PLEASE DESCRIBE THE PROCESS BY WHICH YOU PREPARED THE VALUATION REPORT.**

A. In accordance with Section 1329 of the Code, Aqua engaged Gannett Fleming to prepare the fair market valuation report of the Wastewater System. Aqua provided financial statements and budget statements from DELCORA regarding the Wastewater System and a copy of the Engineering Assessment[2] as required by Section 1329(a)(4). In addition, Gannett Fleming reviewed the assets, reviewed additional information provided by Aqua and or DELCORA and conducted additional research regarding DELCORA and the Wastewater System, including a site visit. After those activities and data gathering, we developed the appraisal.

[2] "DELCORA Sewerage Facilities Engineering Assessment and Original Cost" (December 2019) and related files prepared by Pennoni Associates Inc and Weston Solutions, Inc.

The appraisal contains a letter of transmittal; a table of contents detailing all the sections of the report and work papers; and a narrative report explaining our methodology and conclusions.

The intent of the valuation report is to provide the appraisal results, as well as the entire appraisal work file, in sufficient detail to satisfy the parties' and Commission's review requirements of Section 1329 and the Commission's Final Implementation Order, *In re: Implementation of Section 1329 of the Public Utility Code*, Docket No. M-2016-2543193 (Order Entered October 27, 2016) and Final Supplemental Implementation Order *In re: Implementation of Section 1329 of the Public Utility Code*, Docket No. M-2016-2543193 (Order Entered February 28, 2019). In addition to a copy of the appraisal report, I have provided supporting work papers for the appraisal report in Exhibit Q to Aqua's Application. The relevant work papers have also been submitted to the Commission and provided to the public advocates in CONFIDENTIAL live electronic format.

**Q. IS THERE ANYTHING THAT YOU WOULD CHANGE IN THE VALUATION REPORT SINCE ITS PREPARATION?**

A. No.

**Q. WAS THE FAIR MARKET VALUATION OF THE WASTEWATER SYSTEM ASSETS DETERMINED IN COMPLIANCE WITH USPAP?**

A. Yes. Our fair market valuation was determined in compliance with USPAP 2020-2021 Edition.

**Q. DID YOU EMPLOY THE COST, MARKET AND INCOME APPROACHES IN PREPARING YOUR VALUATION?**

A. Yes.

**Q. DID YOU INCLUDE ANY EXTRAORDINARY ASSUMPTIONS OR HYPOTHETICAL CONDITIONS IN DEVELOPING YOUR APPRAISAL?**

A. No.

**Q. DID YOU INCLUDE ANY LIMITING CONDITIONS IN DEVELOPING YOUR APPRAISAL?**

A. Yes. We accepted all information and data provided by DELCORA and Aqua as it pertains to this assignment "as is" after a limited review. That is, we neither audited nor verified any data, engineering assessment, financial record or operating data provided for this assignment. We assumed all title to all assets included in the appraisal is good and marketable and no hazardous conditions or materials exist which could affect the assets.

**Q. PLEASE SUMMARIZE YOUR RESULTS OF THE APPLICATION OF THE COST, MARKET AND INCOME APPROACHES.**

A. Please see the below table:

| Approach | Indicated Value | Weight | Weighted Value |
|---|---|---|---|
| Cost Approach | $399,664,113 | 33.00% | $131,889,157 |
| Market Approach | 438,337,696 | 34.00% | 149,034,817 |
| Income Approach | 387,754,301 | 33.00% | 127,958,919 |
| | | 100% | $408,882,893 |
| | | | |
| **Conclusion** | | | **$408,883,000** |

**Q. PLEASE FURTHER DESCRIBE EACH APPROACH IN THE DEVELOPMENT OF YOUR APPRAISAL.**

A. We developed our appraisal utilizing the cost, income, and market approaches as required by USPAP and Section 1329 of the Code. We used seven methods under the Cost, Market and Income Approaches to valuation: Original Cost Method, Replacement Cost Method,

Capitalization of Earnings Method, Market Multiple Discounted Cash Flow Method, Capitalization Discounted Cash Flow Method, Market Multiples Method, and the Selected Transactions Method.

The results from the capitalization of earnings method, market multiple discounted cash flow method and the capitalization discounted cash flow method form the basis for our Income Approach. Our Market Approach is supported by the market multiples method and selected transactions method. The results from the original cost method form the basis for our replacement cost method, and both methods form the basis for our Cost Approach. These approaches are summarized below.

*Cost Approach.* The cost approach utilized the original cost method, reproduction cost method and replacement cost method. The replacement cost method was calculated by trending (trended cost method) the asset inventory from the original cost new method. The original cost method determined the original cost new measure of the cost of the assets when first constructed based on the information contained in the Engineering Assessment. The original cost new inventory was trended using the Handy Whitman Index of Public Utility Construction Costs for the water industry to produce the reproduction cost new and was converted to replacement cost new after obsolescence was factored. The calculated accrued depreciation was determined for the original cost new and for the replacement cost new as of December 31, 2019. The calculated accrued depreciation was based on the assets' attained ages, and the service life of the assets. The cost basis of depreciable assets was reduced annually by the accumulated depreciation to reflect the loss in the service value of the assets since being constructed. All land and land rights were valued at original cost.

*Income Approach.* The income approach utilized the capitalization of earning (cash flow) method and the discounted cash flow method. The capitalization of earning method converted a single base economic income number to a value by dividing it by a capitalization rate. The discounted cash flow method used estimates of future debt free net cash flow and discounted them to arrive at a present value or price of the cash flows. The capitalization rate and the discount rate were developed based on market debt and equity rates at the appraisal date. The discounted cash flow method reflected two types of discounted cash flow analyses, the EBIT and EBITDA terminal value model and a capitalization of terminal value model.[3]

*Market Approach.* The market approach was developed based on the market multiples method and the selected transaction method. The market multiples method was based on the market price data of publicly traded corporations engaged in the same or a similar line of business as the Wastewater System. The market price data of these comparable publicly traded corporations was used to calculate the market multiples for the comparable publicly traded corporations at the appraisal date. The selected transactions method used certain public information relating to the purchase or sales of businesses involved in the same or a similar business line as the Wastewater System to calculated market multiples at the time of transaction (sale/purchase). The calculated market multiples determined by the market multiples method and the selected transaction method were then multiplied by the corresponding Wastewater System financial and operating statistic to produce an indicated value for the Wastewater System.

[3] EBIT is earnings before interest and taxes and EBITDA is earnings before interest, tax, depreciation and amortization.

**Q. PLEASE STATE THE NUMBER OF CUSTOMERS YOU USED IN DEVELOPING YOUR APPRAISAL AND THE SOURCE OF THAT NUMBER.**

A. The number of customers I used was 16,473. This customer count number was provided by Aqua. It should be noted the Wastewater System's service area density (customers to population of service area) is about 10-times higher than the 3.6 per customer density of publicly traded water and wastewater systems reflecting the wholesale nature of DELCORA's business. On an EDU (Equivalent Dwelling Units) basis, the Wastewater System's service area density is 3.1 people per EDU based on an estimated population of 615,245 and 197,769 EDUs.

**Q. DID YOU MAKE ANY UPDATES TO YOUR APPRAISAL AFTER IT WAS SUBMITTED TO THE SELLER/BUYER, AND IF SO, WHAT WAS THE UPDATE, WHEN WAS IT MADE, AND WHY WAS IT NECESSARY?**

A. No.

**Q. DID YOU PERFORM AN ON-SITE INSPECTION OF THE WASTEWATER SYSTEM?**

A. Yes. Gannett Fleming viewed the wastewater system assets on February 20, 2020.

**Q. DID YOU RELY UPON A LICENSED ENGINEER'S ASSESSMENT OF THE TANGIBLE ASSETS OF THE WASTEWATER SYSTEM IN PERFORMING YOUR VALUATION?**

A. Yes. Aqua provided a copy of the Engineering Assessment and this information was incorporated into our Cost Approach in our appraisal.

**Cost Approach**

**Q. DID YOU USE THE REPRODUCTION COST OR THE REPLACEMENT COST IN YOUR COST APPROACH?**

A. We utilized the original cost new ("OCN") to calculate the trended original cost ("TOC") measures, or the reproduction cost of the depreciable assets by multiplying the OCN by specific cost indices. We converted reproduction cost new to replacement cost new after factoring in obsolescence. We used the TOC method because the mandated use of the Engineering Assessment's original cost essentially dictates the use of TOC over the reproduction cost or the replacement cost methods.

**Q. WHAT INDEX, IF ANY, DID YOU USE FOR THAT METHOD?**

A. The original cost new inventory was trended using the Handy Whitman Index of Public Utility Construction Costs for the water industry to produce the reproduction cost new.

**Q. UNDER YOUR APPLICATION OF THE COST APPROACH WHAT ASSETS DID YOU VALUE OR TREND DIFFERENTLY FROM OTHER ASSETS AND WHY WAS THAT NECESSARY?**

A. Handy Whitman does not publish indices for all plant accounts. Accordingly, in limited instances when Handy Whitman plant account indices were not available, we used the U.S. Bureau of Labor Statistics, Producer Price Index which best matches the assets being trended.[4]

**Q. UNDER YOUR APPLICATION OF THE COST APPROACH, WHAT YEAR-END DATE DID YOU USE FOR CALCULATING THE DEPRECIATION RESERVE?**

A. We used the date of December 31, 2019.

[4] The plant accounts which Handy Whitman indices were not available included: 390.70 Computer and Software; 391.70 Transportation Equipment; and 396.70 Communication Equipment.

**Q. HOW DID YOU DETERMINE THE DEPRECIATION PARAMETERS OF SURVIVAL/RETIREMENT CHARACTERISTICS AND SERVICE LIVES FOR THE UTILITY PROPERTY UNDER THE COST APPROACH?**

A. We determined the average service lives of depreciable assets based on the materials used for construction and how long the depreciable assets are likely to meet service demands.

**Q. WHY ARE THOSE PARAMETERS APPROPRIATE?**

A. We believe our average service lives of depreciable assets are appropriate based on our experience of having determined average service lives for numerous other water and wastewater utilities and given the fact they resemble those used by other Pennsylvania wastewater companies.

**Income Approach**

**Q. REGARDING YOUR APPLICATION OF THE INCOME APPROACH, WHAT METHOD DID YOU USE TO DETERMINE THE INCOME APPROACH RESULT?**

A. I used the Capitalization of Earnings Method, Market Multiple Discounted Cash Flow Method ("Market Multiple DCF"), and Capitalization Discounted Cash Flow Method ("Capitalization DCF"). I refer to the Market Multiple DCF and the Capitalization DCF collectively as the DCF method.

**Q. WHAT ASSUMPTIONS DID YOU EMPLOY TO DEVELOP YOUR INCOME APPROACH RESULT?**

A. All general assumptions are listed on page 3 of Exhibit 12, and page 7 of Exhibits 13, 14, 15 and 16.

**Q. DID YOU USE AQUA'S CAPITALIZATION RATE OR THEIR DISCOUNT RATE IN YOUR INCOME APPROACH TO VALUATION?**

A. No. Use of Aqua's capitalization rate or their discount rate in an income approach to valuation is not consistent with the standard of value of fair market value because the "buyer" under the standard of value of fair market value is not a specific entity (i.e., Aqua), but rather a hypothetical buyer. Use of Aqua's capitalization rate or their discount rate in an income approach to valuation is only used under the standard of value of investment value.[5] In accordance with Section 1329 of the Code, the standard of value is fair market value, not investment value.

**Q. PLEASE EXPLAIN THE CAPITALIZATION RATE AND THE DISCOUNT RATE USED IN YOUR INCOME APPROACH TO VALUATION.**

A. The capitalization rate used in the capitalization of earnings method and the discount rate used in the DCF method are related. The discount rate is the opportunity cost rate related to the risk of the cash flows. The capitalization rate is simply the discount rate minus the expected growth rate. If no growth is assumed, the capitalization rate is equal to the discount rate.

As explained previously, under the standard of value of fair market value the "buyer" is not a specific entity (i.e., Aqua), but rather a hypothetical buyer. Accordingly, the hypothetical bidder/buyer may range from large regional municipal authorities ("MUNI") to investor owned utilities ("IOU"). For a MUNI, the appropriate discount rate is the current municipal revenue bond yield on December 31, 2019 of 3.38%. The

[5] Pratt, Shannon P. "Defining Standards of Value." Valuation 34, no. 2, June 1989. http://www.appraisers.org/docs/default-source/college-of-fellows-articles/defining-standards-of-value.pdf .

appropriate IOU discount rate is the current net of tax overall cost of capital (weighted average cost of capital) on December 31, 2019 and ranges from 5.91% to 7.16%.[6]

For a MUNI, the appropriate discount rate is the current municipal revenue bond, 3.38%, because debt is the only major source of capital available to finance an acquisition (developed on Exhibit 20, pages 2-5[7]). Although a MUNI likely carries equity on their books (balance sheet), all existing equity is already invested in other assets and therefore, cannot be used to finance an acquisition.[8] For valuation purposes, an embedded cost of debt, or the historical cost of all debt issuances outstanding is not used because this capital is already invested in assets. Whereas the marginal cost of debt, 3.38%, at the valuation date is used in accordance with accepted valuation practice and used for market valuation purposes.

As discussed previously, for an IOU, the appropriate discount rate is the net of tax overall cost of capital (weighted average cost of capital), 5.91% to 7.16% (Exhibit 20, pages 2-7). In this instance, the net of tax overall cost of capital (weighted average cost of capital) is based on the Comparable Group's market value capital structure of 21.8% debt and 78.2% equity, a market cost of debt of 3.37% and a range of market cost of equity of 6.88% to 8.48% based on the Comparable Group's market value CAPM on December 31, 2019.[9] The Comparable Group's net of tax overall cost of capital (weighted average cost

[6] Both the American Society of Appraisers, ASA Business Valuation Standards, 2009, and the National Association of Certified Valuation Analysts, Professional Standards, 2007, use the same definition: "Weighted Average Cost of Capital (WACC). The cost of capital (discount rate) determined by the weighted average, at market values, of the cost of all financing sources in the business enterprise's capital structure."

[7] Exhibit references herein are to the Exhibits in the Gannett Fleming Appraisal Report.

[8] For example, when a municipal or government entity, such as the Commonwealth of Pennsylvania, finances construction of a road or bridge, they only consider the marginal debt cost despite having "equity" reflected on their books (balance sheet).

[9] For example of the net of tax overall cost of capital, see http://www.investinganswers.com/financial-dictionary/financial-statement-analysis/weighted-average-cost-capital-wacc-2905. Also see

of capital) is used as a proxy to conform to the "hypothetical buyer" or "hypothetical seller" of fair market valuation. Use of the buyer's net of tax overall cost of capital (weighted average cost of capital) would produce an investment valuation, not a fair market valuation. The supporting documentation for the development of the MUNI and IOU discount rates are shown on pages 2 to 8 of Exhibit 20.

**Q. WHY IS THE NET OF TAX OVERALL COST OF CAPITAL APPROPRIATE TO USE?**

A. The net of tax overall cost of capital is appropriate because the cash flows being discounted are after tax, or net of tax. The income approach uses estimates of future free cash flow and discounts them to arrive at a present value or price of the cash flows. Generally, this analysis begins with an estimate of the Debt Free Net Cash Flow over the next five to twenty years along with a terminal value. In each year, the Debt Free Net Cash Flow is comprised of projected EBIT, minus income taxes, plus projected depreciation and amortization, plus or minus projected changes in net cash working capital, less projected capital expenditures.

**Q. WHAT IS THE BASIS FOR THE GROWTH RATE USED TO CALCULATE THE CAPITALIZATION RATE USED IN THE INCOME APPROACH?**

A. The growth rate used to calculate the capitalization rate reflects the growth in the Debt Free Net Cash Flow subsequent to the terminal value year. For DELCORA, the growth rate of 0.2% was used based on growth in population. Under both MUNI and IOU ownership a growth rate of 0.2% was used based on the projected growth in population (0.2%), projected inflation (2.5%) and the actual growth in the Debt Free Net Cash Flow in the

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http://www.wallstreetmojo.com/weighted-average-cost-capital-wacc/ , or
http://accountingexplained.com/misc/corporate-finance/wacc .

years prior to the terminal value year. Under MUNI ownership the average growth in the Debt Free Net Cash Flow for the last two years prior to the terminal value year was 1.9% and 0.5% under IOU ownership. A growth of 0.2% was deemed reasonable based on the aforesaid.

**Q. WHAT UTILITY EARNINGS REPORT WAS USED TO CREATE THE CAPITAL STRUCTURE USED IN YOUR APPRAISAL?**

A. As documented previously in footnotes 6 and 9, book value capitalization is not used in fair market valuation determination. Therefore, we did not use the 6.58% Comparable Group's DSIC (distribution system improvement charge) related net of tax overall cost of capital in our valuation because a "hypothetical buyer" cannot finance an acquisition at such a rate and therefore, its use would provide a meaningless result. The Comparable Group's 6.58% DSIC related cost was determined based the Comparable Group's book value capital structure of 44.8% debt and 55.2% equity, a cost of debt of 3.37% and a DSIC cost of equity of 9.95% based on the September 2019 Earnings Report. However, we note the 6.58% Comparable Group's DSIC related net of tax overall cost of capital falls within the 5.91% to 7.16% range of discount rates used in our Income Approach.

If we used the 6.58% Comparable Group's DSIC related net of tax overall cost of capital in our valuation shown on Exhibit 16, the results of the Capitalization DCF would show a range of value for Wastewater System of $257.0 million to $259.4 million. Further, the results of the Market Multiple DCF would show a value of $382.7 million and collectively, the DCF method based on the IOU ownership scenario and a 0.2% growth assumption would indicate a value of $321.0 million for the Wastewater System. The DCF method based on the MUNI ownership scenario indicates a value of $453.8 million and the

DCF method based on the IOU ownership scenario indicates a value of $321.0 million. Collectively, the DCF method indicates a value of $387.4 million when DSIC is considered.

**Q. IF YOU USED A TERMINAL VALUE IN YOUR DISCOUNTED CASH FLOW ANALYSIS WHAT IS THE NUMBER OF YEARS OVER WHICH THE CASH FLOWS ARE CONSIDERED?**

A. The use of a "terminal value" in a Discounted Cash Flow analyses is reasonable and is in accordance with accepted valuation practice. Simply put, the "terminal value" is a mathematical shortcut to avoid having to show and/or calculate annual Debt Free Net Cash Flows for hundreds of time periods, or hundreds of years. Within the Discounted Cash Flow analyses, the "terminal value" is simply a point in the time in which the growth in annual Debt Free Net Cash Flows changes from multiple growth rates to a constant growth rate. For example, in our Discounted Cash Flow analyses, the growth rate of annual Debt Free Net Cash Flows during time periods 1 through 24 changes multiple times due to the various general assumptions listed in the Fair Market Value appraisal report. Subsequent to time period 24, the growth in annual Debt Free Net Cash Flows is a constant growth rate. Accordingly, period 24, or year 24, is the "terminal value" year in our DCF method.

**Market Approach**

**Q. REGARDING YOUR APPLICATION OF THE MARKET APPROACH, WHAT METHODS DID YOU USE TO DETERMINE THE MARKET APPROACH RESULT?**

A. I used the market multiples method and the selected transaction method.

**Q. WHAT ASSUMPTIONS, ANALYSES, AND/OR ADJUSTMENTS DID YOU MAKE UNDER EACH METHOD?**

A. The general assumptions used for the market multiples method are listed on page 1 of Exhibit 17. No assumptions were made under the selected transaction method.

**Q. REGARDING YOUR APPLICATION OF THE MARKET MULTIPLES METHOD, DID YOU LIMIT YOUR PROXY GROUP USED FOR CALCULATING MARKET VALUE TO ONLY COMPANIES WHICH ENGAGE IN PENNSYLVANIA FAIR MARKET VALUE ACQUISITIONS?**

A. No.

**Q. REGARDING YOUR APPLICATION OF THE COMPARABLE SALES USED TO ESTABLISH THE VALUATION, DID YOU LIMIT THE TRANSACTIONS SELECTED TO THOSE THAT YOU PREVIOUSLY APPRAISED?**

A. No.

**Q. PLEASE STATE THE COMPARABLE TRANSACTIONS YOU USED IN DEVELOPING YOUR MARKET APPROACH.**

A. Please see Application Exhibit Q (the Gannett Fleming appraisal), Exhibit 18, pages 2 and 3, which shows that we reviewed the following transactions[10] in developing the selected transactions method:

- Sale of the City of McKeesport to Pennsylvania American Water Company in 2017.
- Sale of New Garden Township Sewer Authority to Aqua in 2017.
- Sale of Limerick Township Wastewater to Aqua in 2017.

[10] The years listed indicate when the applicant sought approval or when the Commission approved each of the transactions.

- Sale of East Bradford Township Wastewater to Aqua in 2018.
- Sale of Mahoning Township Water system to Suez Water Pennsylvania in 2018.
- Sale of Mahoning Township Wastewater system to Suez Water Pennsylvania in 2018.
- Sale of Sadsbury Township Wastewater to Pennsylvania American Water Company in 2018.
- Sale of Exeter Township Wastewater to Pennsylvania American Water Company in 2019.
- Sale of Steelton Borough Authority Water to Pennsylvania American Water Company in 2019.
- Sale of Cheltenham Township Wastewater to Aqua in 2019.
- Sale of East Norriton Township Wastewater to Aqua in 2019.

As a check on the transactions I studied, that are listed above, I also reviewed the proposed purchase of Connecticut Water Service, Inc by SJW Group (Exhibit 18 page 4) which was announced in 2018 and approved in 2019.

**Q. WHAT WERE THE RESULTS OF MARKET APPROACH ANALYSIS YOU PERFORMED?**

A. The results of the market multiples method are shown on page 1 of Exhibit 17 and the results of the selected transactions method are shown on page 1 of Exhibit 18. The conclusion regarding the Market Approach analysis is explained on page 47 of our appraisal.

## CONCLUSION

**Q. WHAT IS YOUR CONCLUSION REGARDING THE FAIR MARKET VALUE OF THE WASTEWATER SYSTEM'S ASSETS TO BE PURCHASED BY AQUA?**

A. Fair market value is defined as "the price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arm's length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts."

Based on our analysis, as described in our appraisal report, the estimate of the fair market value of the Wastewater System as of December 31, 2019 is $408,883,000 (rounded). The results of the analyses and calculations are summarized in Table 1 for the Systems as follows:

| Valuation Approach | Indicated Value |
|---|---|
| Cost Approach | $399,664,113 |
| Income Approach | 387,754,301 |
| Market Approach | 438,337,696 |

**Table 1**

We used seven methods under the Cost, Market and Income Approaches to valuation: Original Cost Method, Replacement Cost Method, Capitalization of Earnings Method, Market Multiple Discounted Cash Flow Method, Capitalization Discounted Cash

Flow Method, Market Multiples Method, and the Selected Transactions Method.

The results from the capitalization of earnings method, market multiple discounted cash flow method and the capitalization discounted cash flow method form the basis for our Income Approach. Our Market Approach is supported by the market multiples method and selected transactions method. The results from the original cost method form the basis for our replacement cost method, and both methods form the basis for our Cost Approach.

We considered the results of each approach as an indicator of value individually, or as independent indicators of value. Therefore, all three approaches to valuation were given consideration in arriving at our estimate of the fair market value conclusion. In our opinion, each of the valuation approaches utilized in our appraisal is relevant. In our opinion each of the valuation approaches utilized in our appraisal is equally relevant. Accordingly, we assign an equal weight to the result of each approach. Our conclusion regarding the fair market value can be described by the weightings given the specific results of the three approaches to valuation. The results of our analyses, shown on Exhibit 19, indicate a range of value for the Wastewater System of $387.8 million to $438.3 million and collectively indicate a fair market value of $408,883,000 for the Wastewater System.

**Q. GENERALLY SPEAKING, IS IT COMMON FOR DIFFERENT APPRAISERS TO REACH VARYING OPINIONS OF FAIR MARKET VALUE?**

A. Yes. I do not think the underlying results of the models employed for valuation purposes are ever the same from one appraiser to another appraiser. Further, the conclusion of value from one appraiser to another appraiser usually differs as well. I believe these are some of the reasons the results of the conclusion of value from two different UVEs are averaged under Section 1329, 66 Pa. C.S. § 1329.

**Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

A. Yes.

# APPENDIX A

Professional Qualifications
of
Harold Walker, III
Manager, Financial Studies
Gannett Fleming Valuation and Rate Consultants, LLC.

## EDUCATION

Mr. Walker graduated from Pennsylvania State University in 1984 with a Bachelor of Science Degree in Finance. His studies concentrated on securities analysis and portfolio management with an emphasis on economics and quantitative business analysis. He has also completed the regulation and the rate-making process courses presented by the College of Business Administration and Economics Center for Public Utilities at New Mexico State University. Additionally, he has attended programs presented by The Institute of Chartered Financial Analysts (CFA).

Mr. Walker was awarded the professional designation "Certified Rate of Return Analyst" (CRRA) by the Society of Utility and Regulatory Financial Analysts. This designation is based upon education, experience and the successful completion of a comprehensive examination. He is also a member of the Society of Utility and Regulatory Financial Analysts (SURFA) and has attended numerous financial forums sponsored by the Society. The SURFA forums are recognized by the Association for Investment Management and Research (AIMR) and the National Association of State Boards of Accountancy for continuing education credits.

Mr. Walker is also a licensed Municipal Advisor Representative (Series 50) by Municipal Securities Rulemaking Board (MSRB) and Financial Industry Regulatory Authority (FINRA).

## BUSINESS EXPERIENCE

Prior to joining Gannett Fleming Valuation and Rate Consultants, LLC., Mr. Walker was employed by AUS Consultants - Utility Services. He held various positions during his eleven years with AUS, concluding his employment there as a Vice President. His duties included providing and supervising financial and economic studies on behalf of investor owned and municipally owned water, wastewater, electric, natural gas distribution and transmission, oil pipeline and telephone utilities as well as resource recovery companies.

In 1996, Mr. Walker joined Gannett Fleming Valuation and Rate Consultants, LLC. In his capacity as Manager, Financial Studies and for the past twenty years, he has continuously studied rates of return requirements for regulated firms. In this regard, he supervised the preparation of rate of return studies in connection with his testimony and in the past, for other individuals. He also assisted and/or developed dividend policy studies, nuclear prudence studies, calculated fixed charge rates for avoided costs involving cogeneration projects, financial decision studies for capital budgeting purposes and developed financial models for determining future capital requirements and the effect of those requirements on investors and ratepayers, valued utility property and common stock for acquisition and divestiture, and assisted in the private placement of fixed capital securities for public utilities.

Head, Gannett Fleming GASB 34 Task Force responsible for developing Governmental Accounting Standards Board (GASB) 34 services, and educating Gannett Fleming personnel and Gannett Fleming clients on GASB 34 and how it may affect them. The GASB 34 related services include inventory of assets, valuation of assets, salvage estimation, annual depreciation rate determination, estimation of depreciation reserve, asset service life determination, asset condition assessment, condition assessment documentation, maintenance estimate for asset preservation, establishment of condition level index, geographic information system (GIS) and data management services, management discussion and analysis (MD&A) reporting, required supplemental information (RSI) reporting, auditor interface, and GASB 34 compliance review.

Mr. Walker was also the Publisher of C.A. Turner Utility Reports from 1988 to 1996. C.A. Turner Utility Reports is a financial publication which provides financial data and related ratios and forecasts covering the utility industry. From 1993 to 1994, he became a contributing author for the Fortnightly, a utility trade journal. His column was the Financial News column and focused mainly on the natural gas industry.

In 2004, Mr. Walker was elected to serve on the Board of Directors of SURFA. Previously, he served as an ex-officio directors as an advisor to SURFA's existing President. In 2000, Mr. Walker was elected President of SURFA for the 2001-2002 term. Prior to that, he was elected to serve on the Board of Directors of SURFA during the period 1997-1998 and 1999-2000. Currently, he also serves on the Pennsylvania Municipal Authorities Association, Electric Deregulation Committee.

## EXPERT TESTIMONY

Mr. Walker has submitted testimony or been deposed on various topics before regulatory commissions and courts in 25 states including: Arizona, California, Colorado, Connecticut, Delaware, Hawaii, Illinois, Indiana, Kentucky, Maryland, Massachusetts, Michigan, Missouri, New Hampshire, Nevada, New Jersey, New York, North Carolina, Oklahoma, Pennsylvania, Rhode Island, South Carolina, Vermont, Virginia, and West Virginia. His testimonies covered various subjects including: fair market value, the taking of natural resources, appropriate capital structure and fixed capital cost rates, depreciation, fair rate of return, purchased water adjustments, synchronization of interest charges for income tax purposes, valuation, cash working capital, lead-lag studies, financial analyses of investment alternatives, and fair value. The following tabulation provides a listing of the electric power, natural gas distribution, telephone, wastewater, and water

service utility cases in which he has been involved as a witness. Additionally, he has been involved in a number of rate proceedings involving small public utilities which were resolved by Option Orders and therefore, are not listed below.

| Client | Docket No. | |
|---|---|---|
| Alpena Power Company | U-10020 | |
| Armstrong Telephone Company - Northern Division | 92-0884-T-42T | |
| Armstrong Telephone Company - Northern Division | 95-0571-T-42T | |
| Artesian Water Company, Inc. | 90 10 | |
| Artesian Water Company, Inc. | 06 158 | |
| Aqua Illinois Consolidated Water Divisions and Consolidated Sewer Divisions | 11-0436 | |
| Aqua Illinois Hawthorn Woods Wastewater Division | 07 0620/07 0621/08 0067 | |
| Aqua Illinois Hawthorn Woods Water Division | 07 0620/07 0621/08 0067 | |
| Aqua Illinois Kankakee Water Division | 10-0194 | |
| Aqua Illinois Kankakee Water Division | 14-0419 | |
| Aqua Illinois Vermilion Division | 07 0620/07 0621/08 0067 | |
| Aqua Illinois Willowbrook Wastewater Division | 07 0620/07 0621/08 0067 | |
| Aqua Illinois Willowbrook Water Division | 07 0620/07 0621/08 0067 | |
| Aqua Pennsylvania Wastewater Inc | A-2016-2580061 | * |
| Aqua Pennsylvania Wastewater Inc | A-2017-2605434 | * |
| Aqua Pennsylvania Wastewater Inc | A-2018-3001582 | * |
| Aqua Pennsylvania Wastewater Inc | A-2019-3008491 | * |
| Aqua Pennsylvania Wastewater Inc | A-2019-3009052 | * |
| Aqua Pennsylvania Wastewater Inc | A-2019-3009052 | * |
| Aqua Virginia - Alpha Water Corporation | Pue-2009-00059 | |
| Aqua Virginia - Blue Ridge Utility Company, Inc. | Pue-2009-00059 | |
| Aqua Virginia - Caroline Utilities, Inc. (Wastewater) | Pue-2009-00059 | |
| Aqua Virginia - Caroline Utilities, Inc. (Water) | Pue-2009-00059 | |
| Aqua Virginia - Earlysville Forest Water Company | Pue-2009-00059 | |
| Aqua Virginia - Heritage Homes of Virginia | Pue-2009-00059 | |
| Aqua Virginia - Indian River Water Company | Pue-2009-00059 | |
| Aqua Virginia - James River Service Corp. | Pue-2009-00059 | |

| | | |
|---|---|---|
| Aqua Virginia - Lake Holiday Utilities, Inc. (Wastewater) | Pue-2009-00059 | |
| Aqua Virginia - Lake Holiday Utilities, Inc. (Water) | Pue-2009-00059 | |
| Aqua Virginia - Lake Monticello Services Co. (Wastewater) | Pue-2009-00059 | |
| Aqua Virginia - Lake Monticello Services Co. (Water) | Pue-2009-00059 | |
| Aqua Virginia - Lake Shawnee | Pue-2009-00059 | |
| Aqua Virginia - Land'or Utility Company (Wastewater) | Pue-2009-00059 | |
| Aqua Virginia - Land'or Utility Company (Water) | Pue-2009-00059 | |
| Aqua Virginia - Mountainview Water Company, Inc. | Pue-2009-00059 | |
| Aqua Virginia - Powhatan Water Works, Inc. | Pue-2009-00059 | |
| Aqua Virginia - Rainbow Forest Water Corporation | Pue-2009-00059 | |
| Aqua Virginia - Shawnee Land | Pue-2009-00059 | |
| Aqua Virginia - Sydnor Water Corporation | Pue-2009-00059 | |
| Aqua Virginia - Water Distributors, Inc. | Pue-2009-00059 | |
| Berkshire Gas Company | 18-40 | |
| Borough of Hanover | R-2009-2106908 | |
| Borough of Hanover | R-2012-2311725 | |
| Borough of Hanover | R-2014-242830 | |
| Chaparral City Water Company | W 02113a 04 0616 | |
| California-American Water Company | CIVCV156413 | * |
| Connecticut-American Water Company | 99-08-32 | |
| Connecticut Water Company | 06 07 08 | |
| Citizens Utilities Company Colorado Gas Division | - | |
| Citizens Utilities Company Vermont Electric Division | 5426 | |
| Citizens Utilities Home Water Company | R 901664 | |
| Citizens Utilities Water Company of Pennsylvania | R 901663 | |
| City of Bethlehem - Bureau of Water | R-00984375 | |
| City of Bethlehem - Bureau of Water | R 00072492 | |
| City of Bethlehem - Bureau of Water | R-2013-2390244 | |
| City of Dubois – Bureau of Water | R-2013-2350509 | |
| City of Dubois – Bureau of Water | R-2016-2554150 | |
| City of Lancaster Sewer Fund | R-00005109 | |

| | | |
|---|---|---|
| City of Lancaster Sewer Fund | R-00049862 | |
| City of Lancaster Sewer Fund | R-2012-2310366 | |
| City of Lancaster Sewer Fund | R-2019-3010955 | |
| City of Lancaster Sewer Fund | R-2019-3010955 | |
| City of Lancaster Water Fund | R-00984567 | |
| City of Lancaster Water Fund | R-00016114 | |
| City of Lancaster Water Fund | R 00051167 | |
| City of Lancaster Water Fund | R-2010-2179103 | |
| City of Lancaster Water Fund | R-2014-2418872 | |
| Coastland Corporation | 15-cvs-216 | |
| Consumers Pennsylvania Water Company Roaring Creek Division | R-00973869 | |
| Consumers Pennsylvania Water Company Shenango Valley Division | R-00973972 | |
| Country Knolls Water Works, Inc. | 90 W 0458 | |
| East Resources, Inc. - West Virginia Utility | 06 0445 G 42T | |
| Elizabethtown Water Company | WR06030257 | |
| Forest Park, Inc. | 19-W-0168 & 19-W-0269 | |
| Hampton Water Works Company | DW 99-057 | |
| Hidden Valley Utility Services, LP | R-2018-3001306 | |
| Hidden Valley Utility Services, LP | R-2018-3001307 | |
| Illinois American Water Company | 16-0093 | |
| Indian Rock Water Company | R-911971 | |
| Indiana Natural Gas Corporation | 38891 | |
| Jamaica Water Supply Company | - | |
| Kane Borough Authority | A-2019-3014248 | * |
| Kentucky American Water Company, Inc. | 2007 00134 | |
| Middlesex Water Company | WR 89030266J | |
| Millcreek Township Water Authority | 55 198 Y 00021 11 | * |
| Missouri-American Water Company | WR 2000-281 | |
| Missouri-American Water Company | SR 2000-282 | |
| Mount Holly Water Company | WR06030257 | |
| New Jersey American Water Company | WR 89080702J | |
| New Jersey American Water Company | WR 90090950J | |
| New Jersey American Water Company | WR 03070511 | |
| New Jersey American Water Company | WR-06030257 | |
| New Jersey American Water Company | WR08010020 | |

| | | |
|---|---|---|
| New Jersey American Water Company | WR10040260 | |
| New Jersey American Water Company | WR11070460 | |
| New Jersey American Water Company | WR15010035 | |
| New Jersey American Water Company | WR17090985 | |
| New Jersey American Water Company | WR19121516 | |
| New Jersey Natural Gas Company | GR19030420 | |
| Newtown Artesian Water Company | R-911977 | |
| Newtown Artesian Water Company | R-00943157 | |
| Newtown Artesian Water Company | R-2009-2117550 | |
| Newtown Artesian Water Company | R-2011-2230259 | |
| Newtown Artesian Water Company | R-2017-2624240 | |
| Newtown Artesian Water Company | R-2019-3006904 | |
| North Maine Utilities | 14-0396 | * |
| Northern Indiana Fuel & Light Company | 38770 | |
| Oklahoma Natural Gas Company | PUD-940000477 | |
| Palmetto Wastewater Reclamation, LLC | 2018-82-S | |
| Pennichuck Water Works, Inc. | DW 04 048 | * |
| Pennichuck Water Works, Inc. | DW 06 073 | |
| Pennichuck Water Works, Inc. | DW 08 073 | |
| Pennsylvania Gas & Water Company (Gas) | R-891261 | |
| Pennsylvania Gas & Water Co. (Water) | R 901726 | |
| Pennsylvania Gas & Water Co. (Water) | R-911966 | |
| Pennsylvania Gas & Water Co. (Water) | R-22404 | |
| Pennsylvania Gas & Water Co. (Water) | R-00922482 | |
| Pennsylvania Gas & Water Co. (Water) | R-00932667 | |
| Public Service Company of North Carolina, Inc. | G-5, Sub 565 | |
| Public Service Electric and Gas Company | ER181010029 | |
| Public Service Electric and Gas Company | GR18010030 | |
| Sierra Pacific Power Company d/b/a NV Energy | 19-06002 | |
| Presque Isle Harbor Water Company | U-9702 | |
| St. Louis County Water Company | WR-2000-844 | |
| Suez Water Delaware, Inc. | 19-0615 | |
| Suez Water New Jersey, Inc. | WR18050593 | |
| Suez Water Owego-Nichols, Inc. | 17-W-0528 | |
| Suez Water Pennsylvania, Inc. | R-2018-3000834 | |
| Suez Water Pennsylvania, Inc. | A-2018-3003519 | * |
| Suez Water Rhode Island, Inc. | Docket No. 4800 | |

| | | |
|---|---|---|
| Suez Water Owego-Nichols, Inc. | 19-W-0168 & 19-W-0269 | |
| Suez Water New York, Inc. | 19-W-0168 & 19-W-0269 | |
| Suez Westchester, Inc. | 19-W-0168 & 19-W-0269 | |
| Suez Water Pennsylvania, Inc. | A-2018-3003517 | * |
| Town of North East Water Fund | 9190 | |
| Township of Exeter | A-2018-3004933 | * |
| United Water New Rochelle | W-95-W-1168 | |
| United Water Toms River | WR-95050219 | |
| Valley Water Systems, Inc. | 06 10 07 | |
| Virginia American Water Company | PUR-2018-00175 | |
| West Virginia-American Water Company | 15-0676-W-42T | |
| West Virginia-American Water Company | 15-0675-S-42T | |
| Wilmington Suburban Water Corporation | 94-149 | |
| York Water Company | R-901813 | |
| York Water Company | R-922168 | |
| York Water Company | R-943053 | |
| York Water Company | R-963619 | |
| York Water Company | R-994605 | |
| York Water Company | R-00016236 | |
| Young Brothers, LLC | 2019-0117 | |

* - Testimony related to valuation

# AQUA PENNSYLVANIA WASTEWATER, INC.
BRYN MAWR, PENNSYLVANIA

REBUTTAL TESTIMONY
OF
HAROLD WALKER, III

FAIR MARKET VALUE APPRAISAL

DELAWARE COUNTY REGIONAL WATER
QUALITY CONTROL AUTHORITY
WASTEWATER SYSTEM ASSETS

October 20, 2020

Prepared by:
GANNETT FLEMING
VALUATION AND RATE CONSULTANTS, LLC
Valley Forge, Pennsylvania

# TABLE OF CONTENTS

## INTRODUCTION

**Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

A. My name is Harold Walker, III my business address is 1010 Adams Avenue, Audubon, Pennsylvania.

**Q. ARE YOU THE SAME HAROLD WALKER WHO PREVIOUSLY SUBMITTED TESTIMONY IN THIS PROCEEDING?**

A. Yes.

## SCOPE OF TESTIMONY

**Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?**

A. Gannett Fleming Valuation and Rate Consultants, LLC ("Gannett Fleming") was engaged by Aqua Pennsylvania Wastewater, Inc. ("Aqua") to perform a fair market value appraisal of the Delaware County Regional Water Quality Control Authority's ("DELCORA") wastewater system assets ("Wastewater System"). The purpose of my testimony is to respond to and comment on the direct testimony submitted by the Office of Consumer Advocate ("OCA") witness Ralph C. Smith. My rebuttal testimony is supported by Exhibit HW-1R, which is composed of 5 Exhibits.

## RESPONSE TO OCA WITNESS SMITH

**Q. DID MR. SMITH PERFORM AN APPRAISAL OF THE DELCORA WASTEWATER SYSTEM ASSETS?**

A. No.

**Q. WOULD YOU PLEASE SUMMARIZE MR. SMITH'S ADJUSTMENTS OF THE GANNETT FLEMING FAIR MARKET VALUE APPRAISAL AND IDENTIFY**

**THE TOPICS THAT YOU WILL ADDRESS IN YOUR REBUTTAL TESTIMONY?**

A. Yes. In his direct testimony, Mr. Smith proposed adjustments to the Cost Approach and the Income Approach to valuation contained in the Gannett Fleming fair market value appraisal. Mr. Smith also recommended adjustments to the Gannett Fleming selected transaction method, which is included in the Market Approach to valuation in the Gannett Fleming fair market value appraisal.

It should be noted that Mr. Smith proposed only downward, or negative, adjustments to the Cost Approach, Income Approach and the selected transaction method. My rebuttal testimony addresses Mr. Smith's concerns and recommended adjustments to our Cost Approach, Income Approach and selected transaction method in the Market Approach.

**Q. DO MR. SMITH'S RECOMMENDATIONS MEET A STANDARD OF VALUE OF FAIR MARKET VALUE?**

A. No. Mr. Smith's recommendations do not meet a standard of value of fair market value and are in direct violation of Section 1329 of the Public Utility Code.

**Cost Approach**

**Q. ON PAGE 48 MR. SMITH STATES, "MR. WALKER'S CALCULATED NET BOOK VALUE ON ORIGINAL COST OF $191.8 MILLION AT DECEMBER 31, 2019 IS $49 MILLION OR 25.5% LOWER THAN THE $240.8 MILLION NET PLANT AMOUNT REPORTED ON DELCORA'S AUDITED FINANCIAL STATEMENTS AS OF DECEMBER 31, 2018." DID DELCORA'S BALANCE OF**

**NET PLANT ACTUALLY DECREASE BY $49 MILLION DURING THE TIME PERIOD REFENCED BY MR. SMITH?**

A. No. Page 29 of the Gannett Fleming appraisal (Application Exhibit Q) states,

> We note that DELCORA has historically carried a large balance of construction work in progress ("CWIP") on their balance sheet at year's end over the most recent three years of $31.3 million in 2016, $40.7 million in 2017 and $57.5 million in 2018. We note these facts because the Engineer's Assessment included $2.3 million of plant additions for 2019 and determined OCN inventory of used and useful plant at a point in time that does not account for CWIP, nor should it have. Accordingly, we believe a substantial amount of CWIP related plant assets are likely to be included in the currently proposed transaction which have not been accounted for under our Cost Approach.

The "$240.8 million net plant amount" cited by Mr. Smith **includes** $57.5 million in CWIP while the "net book value on original cost of $191.8 million" cited by Mr. Smith **excludes** CWIP. If the $57.5 million of CWIP is subtracted from the "$240.8 million net plant amount" cited by Mr. Smith, it produces $183.3 million which is less than the "net book value on original cost of $191.8 million" cited by Mr. Smith. Accordingly, DELCORA's net book value on original cost did not decrease as claimed by Mr. Smith.

**Q. MR. SMITH RECOMMENDS SHORTER SERVICE LIVES FOR NINE PLANT ACCOUNTS. WHY ARE ASSET SERVICE LIVES IMPORTANT?**

A. The estimation of the service lives of the Wastewater System's assets are part of the valuation of depreciable plant assets under the Cost Approach. Lower or shorter service lives produce lower appraised value under the Cost Approach.

**Q. MR. SMITH RECOMMENDS AN ADJUSTMENT TO GANNETT FLEMING'S COST APPROACH. SPECIFICALLY, MR. SMITH RECOMMENDS SHORTER**

**SERVICE LIVES FOR NINE PLANT ACCOUNTS. WHAT IS THE BASIS OF MR. SMITH'S ADJUSTMENT TO GANNETT FLEMING'S COST APPROACH?**

A. Mr. Smith's recommendation is based on Aqua's "depreciation rates" for Aqua's existing wastewater assets. On page 50 Mr. Smith explains his recommendation,

> I recommend using the depreciation rates approved in the Company's last base rate case, which were set forth in Aqua's response to OCA-II-10. As shown on Exhibit RCS-2, I recalculated accumulated depreciation using depreciation rates which resulted in an adjusted RCND accumulated depreciation amount. This results in an adjustment to reduce the Gannett Fleming Cost Approach by $100,465,415, as shown on Exhibit RCS-2, which I carried forward onto my valuation summary that is shown on Exhibit RCS-1, column G, line 2.

**Q. DOES MR. SMITH'S RECOMMENDATION OF USING AQUA'S DEPRECIATION RATES MEET A STANDARD OF VALUE OF FAIR MARKET VALUE?**

A. No. Mr. Smith's recommendation does not meet a standard of value of fair market value and is a direct violation of Section 1329 of the Public Utility Code and its related enabling legislation.[1] Under the standard of value of fair market value, the buyer is a hypothetical or generic entity, it is neither Aqua Pennsylvania, nor Pennsylvania-American, nor any other specific entity. Mr. Smith's recommendation of using Aqua's "depreciation rates" results in a standard of value of investment value, not fair market value. Under a standard of value of fair market value, the appraised value does not differ based on who the buyer is. However, under a standard of value of investment value, the appraised value changes depending on who the buyer is.

1 Pratt, Shannon P. "Defining Standards of Value." Valuation 34, no. 2, June 1989. http://www.appraisers.org/docs/default-source/college-of-fellows-articles/defining-standards-of-value.pdf .

For example, under Mr. Smith's recommendation of using the most recent approved depreciation rates of the buyer, the appraisal value of DELCORA's wastewater system would fluctuate if the buyer were Aqua Pennsylvania or Pennsylvania-American because each has its own unique existing depreciation rates. Under a standard of value of fair market value, an appraised value does not differ based on who the buyer is.

**Q. DO AUTHORIZED "DEPRECIATION RATES" PROVIDE AN INDICATION OF THE CURRENT VALUE OF THE UNDERLYING ASSETS?**

A. No, authorized "depreciation rates" are prospective rates regarding the **future** annual accrual rate of depreciation. Authorized "depreciation rates" do not provide a measure of the current balance of accumulated depreciation nor the condition of the underlying assets. Under the Cost Approach the balance of accumulated depreciation and the condition of the underlying asset are necessary to determine the value of an asset.

Mr. Smith's methodology for determining the current balance of accumulated depreciation involved multiplying the age of each asset by the rate of future accrual (authorized "depreciation rates") to produce the current balance of accumulated depreciation. The defect in Mr. Smith's methodology can be demonstrated by looking at the results produced for individual accounts.

For example, Mr. Smith's methodology determines the current balance of accumulated depreciation for account 354.3 (Structures and Improvements – Pumping) to be $57,066,981 (OCA Exhibit RCS-2). However, the survivor curve for existing Aqua assets in account 354.3 (Structures and Improvements – Pumping) is 60-S1 as shown on Mr. Smith's RCS-8 p 115 (OCA-II-10 Attachment 2). Applying the 60-S1 survivor curve to the assets in the Wastewater System's account 354.3 (Structures and Improvements –

Pumping) determines the current balance of accumulated depreciation to be $45,159,857.[2] Accordingly, Mr. Smith's methodology produced a balance of accumulated depreciation that is 26% higher ($57,066,981 ÷ $45,159,857) than determined by the authorized survivor curve. Mr. Smith's methodology produces a similar situation of overstating the balance of accumulated depreciation for the nine accounts he adjusted. In total, **Mr. Smith's methodology overstates the balance of accumulated depreciation** for the nine accounts he adjusted by $74,822,949 based on Aqua's authorized survivor curves ($360,793,981 - $285,971,032 = $74,822,949).[3]

**Q. DO SURVIVOR CURVES PROVIDE A SUPERIOR INDICATION OF THE CURRENT VALUE OF THE UNDERLYING ASSETS?**

A. Yes. The determination of depreciation expense for utility assets is a complex process. Utility assets are classified or grouped in accordance with the National Association of Regulatory Utility Commissioners' (NARUC) uniform system of accounts. This system of accounts defines the capital accounts to be used and the type of assets to be included in each account. This process results in homogeneous assets being grouped into respective accounts based on the function and nature of the assets. For example, mains are accounted for in one account, pumps in another account, structures in another, etc.

Despite the fact that homogeneous assets are grouped into separate accounts, the life span of each asset comprising an account is dispersed over a wide range. "Generalized survivor curves are used to describe the dispersion of lives over time."[4]

2 See Exhibits 1 and 2 of Exhibit HW-1R.
3 See Exhibits 1 and 2 of Exhibit HW-1R.
4 Stout, William M. "A Comparison of Component and Group Depreciation for Large Homogeneous Groups of Network Assets." Presentation to the Accounting Standards Executive Committee of the American Institute of Certified Public Accountants, August 28, 2002. https://www.sec.gov/comments/4-600/4600-97.pdf

Survivor curves are assigned based on statistical analysis of the dispersion of retirements experienced by the property populating each account. "The results of the statistical analyses are similar to those obtained by an actuary analyzing the mortality of human beings."[5]

Depreciation studies required by regulators determine changes in probable average service lives of the assets comprising each account by comparing the depreciation reserve (balance of accumulated depreciation) calculated from the survivor curves to the account's book reserve. Differences between these two reserves is remedied through changes to authorized service lives which, over time, moves the account's book reserve to being closer to the reserve calculated from the survivor curves. The reason regulators move the book reserve towards the reserve calculated from the survivor curves is to produce the outcome where the assets' economic life match their service life. Since survivor curves best depict average service lives and provide a more accurate balance of accumulated depreciation, their use provides the best measure to determine the current value of the underlying assets.

**Q. DID MR. SMITH RECOMMEND USING AQUA'S "DEPRECIATION RATES" FOR ALL OF THE WASTEWATER SYSTEM'S PLANT ACCOUNTS?**

A. No. Mr. Smith did not recommend using Aqua's existing service lives for four of the Wastewater System's plant accounts. Aqua's existing service lives are **higher** for each of these four accounts than the service lives used in the Gannett Fleming appraisal. Conversely, in the instance when Aqua's existing service lives were **lower** than the service lives used in the Gannett Fleming appraisal Mr. Smith recommended using Aqua's existing service lives. Therefore, Mr. Smith's recommendation results in using Aqua's existing

5 Ibid.

service lives only in the instance when they produce a higher balance of accumulated depreciation, thus resulting in a lower asset value. Table 1 lists the four accounts where Aqua's existing service lives are higher than the service lives used in the Gannett Fleming appraisal.[6]

| Account No. | Description | Gannett Fleming Survivor Curve | Aqua Rate Case Survivor Curve |
|---|---|---|---|
| 361.21 | COLLECTION SEWERS - GRAVITY - MAINS | 70-R2.5 | 75-R2.5 |
| 361.23 | COLLECTION SEWERS - GRAVITY - MANHOLES | 65-R3 | 75-R2.5 |
| 363.20 | SERVICES TO CUSTOMERS | 60-R2.5 | 70-R4 |
| 391.70 | TRANSPORTATION EQUIPMENT | 11-S1.5 | 15-L3 |

**Table 1**

**Q. WHAT WOULD OCA'S ADJUSTMENT TO THE COST APPROACH BE IF AQUA'S "DEPRECIATION RATES" WERE USED FOR ALL OF THE WASTEWATER SYSTEM'S PLANT ACCOUNTS?**

A. Mr. Smith recommends an adjustment to reduce the Gannett Fleming Cost Approach by $100,465,415 (Exhibit RCS-2). If Aqua's authorized survivor curve were used for all of the Wastewater System's plant accounts, OCA's adjustment would reduce the Gannett Fleming Cost Approach by $21,581,044 ($392,724,620 - $414,305,664), which is $78,884,371 less than that proposed by OCA ($100,465,415 - $21,581,044).[7]

However, as stated previously, using Aqua's authorized survivor curves or Aqua's "depreciation rates" results in a standard of value of investment value, not fair market value

6 Aqua's existing survivor curves are shown in OCA-II-10 Attachment 2.
7 See Exhibit 1 of Exhibit HW-1R.

and would be a direct violation of Section 1329 of the Public Utility Code and its related enabling legislation.

**Q. DID MR. SMITH CONDUCT A STATISTICAL ANALYSIS TO SUPPORT HIS RECOMMENDATION FOR USING AQUA'S "DEPRECIATION RATES"?**

A. No. Mr. Smith provides no evidence to support that Aqua's assets are comparable to the Wastewater System's assets. Instead, there are reasons to doubt that they are comparable. For example, Aqua describes their existing wastewater systems as "relatively small in size and number of customers" with each "operating division" being "self-sustained" providing wastewater service to a total population of 64,000.[8] The Wastewater System wastewater treatment facilities and collection systems serve more than **half million people** including 46 municipalities. in Delaware and Chester Counties in southeastern Pennsylvania.

**Income Approach**

**Q. WHAT ARE MR. SMITH'S CRITICISMS OF THE INCOME APPROACH CONTAINED IN THE GANNETT FLEMING FAIR MARKET VALUE APPRAISAL?**

A. Mr. Smith disagrees with the manner of determining the "terminal value" used in the Income Approach (DCF model). The end result of Mr. Smith's "re-calculation" of the DCF models is a downward, or negative, adjustment to the Income Approach.

**Q. DOES MR. SMITH EXPRESS HIS MISGIVINGS CONCERNING THE USEFULNESS OF THE INCOME APPROACH WHEN VALUING PUBLIC UTILITY ASSETS?**

8 See Exhibit 3 of Exhibit HW-1R, for pages from Aqua Pennsylvania Wastewater, Inc. annual report filed with the PA PUC for the year ended December 31, 2019.

A. Yes. On page 52, Mr. Smith explains his belief of why it is inappropriate to apply a capitalization rate concept to estimate the terminal value of a regulated public utility, "[w]hile the use of capitalization rates may be appropriate for an unregulated/non utility business enterprise, this approach is not realistic or appropriate for determining the terminal value of public utilities. The theory underlying the use of capitalization rates is that a firm's net cash flow will grow at a constant rate in perpetuity without significant reinvestment greater than historical depreciation. However, such is not the case for regulated utilities. A regulated utility's net cash flow is a direct function of its plant in service."

**Q. HAS THE PA PUC EXPRESSED MISGIVINGS OR CONCERNS REGARDING THE USEFULNESS OF APPLYING A CAPITALIZATION RATE CONCEPT TO ESTIMATE THE TERMINAL VALUE OF A REGULATED PUBLIC UTILITY IN A 1329 PROCEEDING IN WHICH GANNETT FLEMING HAS BEEN INVOLVED IN?**

A. No. Gannett Fleming has applied a capitalization rate concept to estimate the terminal value as part of its fair market value appraisal in nine Section 1329 fair market value proceedings. The PA PUC has not adjusted the capitalization rate concept in any one of the prior proceedings.

**Q. ON PAGE 52 MR. SMITH CLAIMS, "IN RECENT YEARS, THE DELCORA WASTEWATER NET PLANT BALANCE/AMOUNT HAS BEEN DECLINING." DO YOU AGREE WITH MR. SMITH?**

A. No. Exhibit 1 from Gannett Fleming's appraisal (Application Exhibit Q) shows the Wastewater System's net plant increased from $182.4 million in 2015 to $240.8 million in 2018.

**Q. WOULD YOU PLEASE EXPLAIN WHAT THE "TERMINAL VALUE" IS IN A DCF MODEL UNDER THE INCOME APPROACH TO VALUATION?**

A. Yes. Within the DCF model, the "terminal value" is simply a point in time in which the growth in annual Debt Free Net Cash Flows changes from multiple growth rates to a constant growth rate. Within the DCF analysis, the growth rate of annual Debt Free Net Cash Flows during time periods 1 through 24 (year 2021 through 2044) changes multiple times due to the various assumptions listed in the Gannet Fleming Fair Market Value appraisal report. After time period 24 (year 2044), the growth in annual Debt Free Net Cash Flows is a constant growth rate. The "terminal value" is simply the present value of future Debt Free Net Cash Flows from time period 24 (year 2044) forward. Under the Income Approach to valuation, a terminal value can also be thought of as the future market value, or future sale price, of existing assets.

**Q. WHAT DOES MR. SMITH RECOMMEND BEING USED FOR THE "TERMINAL VALUE" IN HIS DCF MODEL UNDER THE INCOME APPROACH TO VALUATION?**

A. Mr. Smith recommends using the $340.646 million net plant value from time period 24 (year 2044) as the terminal value.[9]

9 OCA Statement 1, OCA Exhibit RCS-3, page 2 for his Muni scenario and page 3 for his IOU scenario.

**Q. IS MR. SMITH'S RECOMMENDED USE OF THE $340.646 MILLION NET PLANT VALUE, FROM TIME PERIOD 24, AS THE TERMINAL VALUE IN HIS DCF A REASONABLE APPROACH?**

A. No. The circularity of this recommendation defeats or eliminates the need to appraise plant assets since the indicated value of net cost of the plant assets is simply the net cost of the plant assets under Mr. Smith's recommendation. If this was the appropriate or correct method to value the assets then an original cost less deprecation analysis would be the only method needed to value assets. However, the value of the investment in plant and equipment for the DELCORA wastewater system assets is being determined in these proceedings based upon a standard of value of fair market value, not a standard of value of original cost.[10]

**Q. ARE MR. SMITH' CRITICISMS OF, AND HIS PROPOSED ADJUSTMENTS TO, THE GANNETT FLEMING INCOME APPROACH TO VALUATION IN ACCORDANCE WITH ACCEPTED VALUATION PRACTICE?**

A. No. The use of a "terminal value" in the DCF model is a mathematical shortcut to avoid having to show and/or calculate annual Debt Free Net Cash Flows for hundreds of time periods, or hundreds of years, and is practical and is in accordance with accepted valuation practice. Conversely, Mr. Smith's proposed alternative of using net plant value from time period 24 (year 2044) as the terminal value is not in accordance with accepted valuation practice.

**Q. YOU TESTIFIED THAT "UNDER THE INCOME APPROACH TO VALUATION, A TERMINAL VALUE CAN ALSO BE THOUGHT OF AS THE FUTURE**

10 Pratt, Shannon P. "Defining Standards of Value."

**MARKET VALUE, OR SALES PRICE, OF EXISTING ASSETS." WHAT EVIDENCE IS THERE THAT NET PLANT VALUE IS NOT A GOOD MEASURE OR PROXY OF THE FUTURE MARKET VALUE, OR SALES PRICE, OF EXISTING ASSETS?**

A. Page 1 of Exhibit 17 (column D) of Gannet Fleming's appraisal lists the current market multiples applicable to the corresponding financial and operating statistics of the DELCORA wastewater system. These market multiples and the corresponding financial and operating statistics of the DELCORA wastewater system that are shown in the Gannett Fleming DCF model for IOUs (investor owned utility) time period 24 (year 2044) that were utilized by Mr. Smith are listed below in Table 2 along with the related indicated market value applicable to each metric.

DELCORA Wastewater System Assets

| | Period 24 Statistic From DCF * | Valuation Multiples ** | Period 24 Market Multiples Valuation |
|---|---|---|---|
| Gross PP&E | $924,548,536 | 1.46x | $1,349,840,862 |
| Net PP&E | $340,645,943 | 1.88x | $640,414,372 |
| Revenues | $174,972,239 | 7.89x | $1,380,530,966 |
| EBITDA | $47,905,856 | 19.08x | $914,043,727 |
| EBIT | $30,592,808 | 27.90x | $853,539,335 |

* - OCA Exhibit RCS-3, page 3

** - From Exhibit 17, page 1, Aqua Exhibit Q

**Table 2**

As shown in Table 2, the indicated market value in period 24 (year 2044) applicable to each metric range from $1,380.530 million to $640.414 million and collectively proves net plant value ($340.646 million) is not a good measure or proxy of the future market value, or sales price, of existing assets since the indicated future market value is about 168% higher than Mr. Smith's recommendation of $340.646 million (year 2044).

**Q. DO YOU AGREE WITH MR. SMITH'S ASSERTION THAT A "REGULATED UTILITY'S NET CASH FLOW IS A DIRECT FUNCTION OF ITS PLANT IN SERVICE," FROM PAGE 52 OF HIS TESTIMONY?**

A. No, not in the context presented in his testimony. The value of the investment in plant and equipment for the DELCORA wastewater system assets is being determined in these proceedings. The appraised value estimated by Gannett Fleming and ScottMadden is $408.8 million and $308.1 million, respectively (OCA Exhibit RCS-1). The purchase price negotiated by Aqua and DELCORA is $276.5 million (OCA Exhibit RCS-1); all of which are considerably higher than the present value of terminal value of net cost of the plant and equipment of $159.5 million to $78.6 million used by Mr. Smith (OCA Exhibit RCS-1, pages 2 and 3, respectively).

**Q. HAS THE PA PUC PREVIOUSLY REJECTED OCA'S PROPOSED USE OF NET PLANT VALUE AS THE TERMINAL VALUE USED IN THE INCOME APPROACH IN A 1329 PROCEEDING?**

A. Yes. The PA PUC rejected OCA's proposed use of net plant value as the terminal value used in the income approach in the Cheltenham 1329 proceeding (Docket No. A-2019-3008491).

**Q. ON PAGE 53 MR. SMITH STATES, "THE FATAL FLAW IN BOTH THE BUYER AND SELLER UVES' ESTIMATION OF A "TERMINAL" VALUE IS THAT THE CAPITAL EXPENDITURES IN THE LAST YEAR OF THE MODEL ARE MUCH LESS THAN THE DEPRECIATION EXPENSE ON EXISTING PLANT DURING THAT YEAR. THEREFORE, UNDER THESE UVES' ASSUMPTIONS AND MODELING TECHNIQUES, THE DELCORA WASTEWATER UTILITY IS DEPRECIATING AND USING UP ITS EXISTING PLANT FASTER, AND TO A HIGHER DEGREE, THAN IT IS MAKING INVESTMENTS TO REPLACE THAT PLANT." IS MR. SMITH CORRECT?**

A. No. Over the course of the 24 year DCF model the depreciation expense totals $341.8 million and the capital expenditures totals $392.3 million (OCA Exhibit RCS-3, pages 2 and 3). In the 24th year (2044) the depreciation expense is $17.3 million and the capital expenditures are $17.0 million, a difference of less than 2%. With a net plant balance of $340.6 million (year 2044) and the small $0.3 million ($17.3 - $17.0) difference between depreciation expense and the capital expenditures, it would take 1,135 years to use up existing plant ($340.6 ÷ $0.3 = 1,135).

**Q. ON PAGE 54 MR. SMITH STATES, "AS SHOWN ON EXHIBIT RCS-3, PAGES 2 AND 3, I HAVE RECALCULATED THE VALUATION OF THE TERMINAL VALUE USING THE AMOUNT OF NET PLANT LESS ACCUMULATED DEFERRED INCOME TAXES (ADIT) REMAINING AT THE END OF YEAR 24. AS SHOWN ON EXHIBIT RCS-3, PAGES 2 AND 3, I HAVE RECALCULATED THE VALUATION OF THE TERMINAL VALUE USING THE AMOUNT OF**

**NET PLANT LESS ACCUMULATED DEFERRED INCOME TAXES (ADIT) REMAINING AT THE END OF YEAR 24." IS MR. SMITH CORRECT?**

A. No. In response to a discover request, Mr. Smith stated, "The annual ADIT balance and annual tax depreciation for each year 2021 through 2044 was not used for Exhibit RCS-3." Based on Mr. Smith's discovery response, Mr. Smith did not adjust the terminal value shown on Exhibit RCS-3 and his testimony likely intended to reference Exhibits addressing the ScottMadden appraisal, not Exhibit RCS-3. A copy of Mr. Smith's response is included as Exhibit 4 of Exhibit HW-1R.

**Selected Transaction Method**

**Q. ON PAGE 58, WHILE DISCUSSING THE SELECTED TRANSACTIONS METHOD, MR. SMITH STATES, "SINCE EX-ANTE AMOUNTS ARE PROJECTED AMOUNTS AND EX-POST ARE ACTUAL AMOUNTS FOR COMPLETED TRANSACTIONS, I REMOVED THE EX-ANTE AMOUNTS FROM THE VALUATION CALCULATION AND USED ONLY THE MEDIAN OF EX-POST AMOUNTS FOR THE ADJUSTED MARKET VALUATION SHOWN ON EXHIBIT RCS-4, PAGE 1." IS MR. SMITH'S UNDERSTANDING OF THE "EX-ANTE AMOUNTS" AND "EX-POST AMOUNTS" CORRECT?**

A. No. The *ex-ante* data is actual data, it is not projected data. *Ex-ante* data is the only data known at the time of bid. The selected transaction method relies on and reflects information that was known, *ex-ante*, at the time the winning purchase bid (price) was given. After all, the winning purchase bid (price) could not have reflected *ex-post* information that was not available when it was made. The metrics (GPPE, NPPE, Customers, etc.) used in the selected transaction method are relative to the time period the

bid (price) was made. That is, the metrics are time period sensitive. For example, a 2016 bid would likely reflect metrics from 2015 since the results of 2016 would not be known at the time. It is unrealistic for Mr. Smith to suggest that *ex-post* data that only **becomes available after a bid is made** is more appropriate than *ex-ante* financial information in the Market Approach.

**Q. ON PAGE 58, MR. SMITH STATES, "I REMOVED THE EX-ANTE AMOUNTS FROM THE VALUATION CALCULATION AND USED ONLY THE MEDIAN OF EX-POST AMOUNTS FOR THE ADJUSTED MARKET VALUATION SHOWN ON EXHIBIT RCS-4, PAGE 1." WAS THIS APPROACH PREVIOUSLY REJECTED BY THE PA PUC?**

A. Yes, an identical approach was recommended by OCA in Cheltenham and it was rejected by the Commission.

**Q. ON PAGE 58, MR. SMITH STATES, "ADDITIONALLY, AS SHOWN ON PAGE 3 OF EXHIBIT RCS-4, SOME OF THE PURCHASE PRICE AMOUNTS USED BY MR. WALKER DID NOT REFLECT THE FINAL DETERMINATION IN THE RESPECTIVE ACQUISITION CASE. THE PURCHASE PRICES USED BY MR. WALKER ARE IN EXCESS OF FAIR MARKET VALUE. AS SUCH, I RECOMMEND THAT THE PURCHASE PRICES BE REDUCED TO THE APPROVED FAIR MARKET VALUE." DO YOU BELIEVE MR. SMITH PRESENTED A VALID JUSTIFICATION FOR USING THE RATE BASE VALUE AS AN ALTERNATIVE TO THE ACTUAL PURCHASE PRICES?**

A. No. An identical approach was recommended by OCA in Cheltenham and it was rejected by the Commission. The selected transaction method relies on and reflects information

that was known at the time the winning purchase bid (price) was given. After all, the winning purchase bid (price) could not have reflected information that was not available when it was made. For McKeesport, the re-negotiated $159 million or the Commission-approved rate base value of $158 million was not known at the time of the bid. For Limerick, the correct purchase price of $75 million was used in lieu of the Commission's determined ratemaking rate base value because $75 million was the amount bid and paid by the buyer. The same is true regarding McKeesport, the correct purchase price was used in lieu of the Commission's determined ratemaking rate base value because the purchase price was the amount bid and paid by the buyer. A Commission determined ratemaking rate base value for an entity does not change the price bid and paid by a buyer.

The selected transaction method relies on and reflects information that was known at the time the winning purchase bid (price) was given. Further, as stated, the metrics are time period sensitive. For example, a bid (price) made in 2016 could only reflect metrics from 2015 since the results of 2016 were not known at the time of the bids.

**Q. ON PAGE 58, MR. SMITH STATES, "USING THE ACTUAL FAIR MARKET VALUE INVOLVED IN THE RESPECTIVE ACQUISITIONS INSTEAD OF PROPOSED PURCHASE PRICES IS A MORE REASONABLE APPROACH AS IT REFLECTS THE ACTUAL AMOUNT ULTIMATELY SPENT BY THE RESPECTIVE ACQUIRING COMPANIES. RELIANCE ON PURCHASE PRICES THAT WERE FOUND TO BE IN EXCESS OF FAIR MARKET VALUE IS NOT REASONABLE." DO YOU AGREE WITH MR. SMITH?**

A. No. As stated previously, in Limerick the purchase price was $75 million, not the Commission's determined ratemaking rate base value of $64 million. Similarly, in

Cheltenham, the purchase price was $50 million, not the Commission's determined ratemaking rate base value of $44 million. Mr. Smith's claim that the ratemaking rate base determined by the Commission reflects the actual amount spent by the respective companies is simply incorrect. Mr. Smith's approach of "reasonable" is built on emotion not facts. The value of the investment in plant and equipment for the DELCORA wastewater system assets is being determined in these proceedings based upon a standard of value of fair market value, not a standard of value of "reasonable."[11]

**Q. MR. SMITH RECOMMENDS THAT ONLY EX-POST DATA RATHER THAN EX-ANTE DATA SHOULD BE USED IN THE SELECTED TRANSACTION METHOD. DO YOU BELIEVE MR. SMITH PRESENTED A VALID JUSTIFICATION FOR DISREGARDING EX-ANTE DATA?**

A. No. As I stated above, an identical approach was recommended by OCA in Cheltenham and it was rejected by the Commission. The Gannett Fleming appraisal uses both *ex-ante* and *ex-post* data. I believe *ex-ante* data is the proper data to use but recognize limited *ex-ante* data exists.[12] Accordingly, the Gannett Fleming appraisal uses both *ex-ante* and *ex-post* data.

The selected transaction method relies on and reflects information that was known, *ex-ante*, at the time the winning purchase bid (price) was given. After all, the winning purchase bid (price) could not have reflected *ex-post* information that was not available when it was made. The metrics (GPPE, NPPE, Customers, etc.) used in the selected

11 Pratt, Shannon P. "Defining Standards of Value."

12 See page 46 of the Gannett Fleming appraisal, "[c]omplete information only exists for a few of the transactions, with only Customers and Population having ample data for all transactions as is evident from the information shown (Exhibit 18, page 2). Therefore, we supplemented the ex-ante data with ex-post information of GPPE and NPPE (collectivity called "Asset Items") as shown on page 3 of Exhibit 18." (Aqua Exhibit Q)

transaction method are relative to the time period the bid (price) was made. That is, the metrics are time period sensitive. For example, a 2016 bid would likely reflect metrics from 2015 since the results of 2016 would not be known at the time. It is unrealistic for Mr. Smith to suggest that only *ex-post* original cost studies are more appropriate than *ex-ante* information in the Market Approach.

**Q. DID MR. SMITH MAKE ADDITIONAL ADJUSTMENTS TO THE SELECTED TRANSACTION METHOD IN ADDITION TO THE ITEMS HE DISCUSSED IN HIS TESTIMONY?**

A. Yes. Page 3 of OCA Exhibit RCS-4 shows 25 adjustments to the selected transaction method that were not discussed in Mr. Smith's direct testimony. Because I do not know the basis for the adjustments to the selected transaction method which were not discussed in his direct testimony I cannot agree with, or specifically address many of the adjustments that are shown on page 3 of OCA Exhibit RCS-4.

I note that during discovery, the Company asked OCA for documentation supporting their adjustments shown on OCA Exhibit RCS-4 but OCA declined to provide any response. A copy of OCA's response to the Company's discovery request is attached as Exhibit 5 of Exhibit HW-1R.

**Recommended Weighting**

**Q. WOULD YOU RECOMMEND USING THE WEIGHTINGS MR. SMITH APPLIED TO HIS RESULT OF THE VALUATION APPROACHES SHOWN?**

A. No, Mr. Smith recommended substantial changes to each valuation approach. Mr. Smith does not justify the weightings he applied to the valuation approaches shown. Mr. Smith did not conduct an appraisal. Mr. Smith assumes weightings remain the same regardless

of the results of the valuation approaches which is "putting the wagon ahead of the horse." An appraisal is an opinion of fair market value and is not a "mechanical" process. When information changes, opinions, weightings, methodologies and techniques change as well.

By attempting to analyze and adjust our Appraisal, Mr. Smith is doing no more than selectively choosing the parts of the Appraisals that are to his liking while jettisoning those parts that are not. Depending on the quantity and quality of the results, weights applied under fair market value differ but Mr. Smith did not do this.

## CONCLUSION

**Q. IS THERE ANYTHING PRESENTED IN MR. SMITH'S TESTIMONY THAT WOULD RESULT IN YOU ALTERING YOUR FAIR MARKET VALUE APPRAISAL OF THE DELCORA'S WASTEWATER SYSTEM ASSETS?**

A. No, there was nothing presented in Mr. Smith's testimony which would result in our changing our fair market value appraisal of the DELCORA wastewater system assets.

**Q. DOES THAT CONCLUDE YOUR REBUTTAL TESTIMONY?**

A. Yes, it does. However, I reserve the right to supplement my testimony as additional issues arise during this proceeding.

Exhibit HW-1R
Docket No. A-2019-3015173
Witness: H. Walker, III

# AQUA PENNSYLVANIA WASTEWATER, INC.
BRYN MAWR, PENNSYLVANIA

# FAIR MARKET VALUE APPRAISAL

EXHIBIT

TO ACCOMPANY THE

REBUTTAL TESTIMONY

October 2020

Prepared by:
GANNETT FLEMING
VALUATION AND RATE CONSULTANTS, LLC

Valley Forge, Pennsylvania

Comparison of OCA's Replacement Cost Accumulated Depreciation and the
Replacement Cost Accumulated Depreciation Calculated From the Aqua Rate Case Survivor Curves

| Account No. | Description | A<br>Gannett Fleming Appraisal<br>Replacement Cost Accumulated Depreciation | B<br>OCA Exhibit RCS-2<br>Replacement Cost Accumulated Depreciation | C<br>Aqua Rate Case Survivor Curves<br>Replacement Cost Accumulated Depreciation | Difference (B - C) |
|---|---|---|---|---|---|
| 353.30 | LAND AND LAND RIGHTS - PUMPING | $ - | $ - | $ - | |
| 354.30 | STRUCTURES AND IMPROVEMENTS - PUMPING * | $ 48,627,436 | $ 57,066,981 | $ 45,159,857 | $ 11,907,124 |
| 354.40 | STRUCTURES AND IMPROVEMENTS - TREATMENT * | $ 18,010,504 | $ 23,501,205 | $ 20,510,289 | |
| 354.70 | STRUCTURES AND IMPROVEMENTS - GENERAL PLANT * | $ 1,383,438 | $ 1,700,475 | $ 1,638,756 | |
| 360.21 | COLLECTION SEWERS - FORCE - MAINS | $ 43,471,330 | $ 43,471,330 | $ 43,471,330 | |
| 361.21 | COLLECTION SEWERS - GRAVITY - MAINS | $ 71,000,745 | $ 71,000,745 | $ 68,529,752 | |
| 361.23 | COLLECTION SEWERS - GRAVITY - MANHOLES | $ 11,443,391 | $ 11,443,391 | $ 10,140,170 | |
| 362.20 | SPECIAL COLLECTING STRUCTURES * | $ 10,374,244 | $ 16,348,744 | $ 13,883,250 | |
| 363.20 | SERVICES TO CUSTOMERS | $ 3,963,122 | $ 3,963,122 | $ 4,039,741 | |
| 364.20 | FLOW MEASURING DEVICES * | $ 51,272 | $ 47,560 | $ 61,477 | |
| 365.20 | FLOW MEASURING INSTALLATIONS | $ 57,503 | $ 57,503 | $ 57,503 | |
| 371.30 | PUMPING EQUIPMENT * | $ 5,782,503 | $ 11,135,027 | $ 6,585,556 | |
| 380.30 | TREATMENT AND DISPOSAL EQUIP - PUMP STATIONS * | $ 23,286,127 | $ 31,721,978 | $ 23,744,426 | |
| 380.40 | TREATMENT AND DISPOSAL EQUIPMENT * | $ 152,768,306 | $ 219,214,491 | $ 174,320,315 | |
| 390.70 | COMPUTER AND SOFTWARE | $ 212,532 | $ 212,532 | $ 212,532 | |
| 391.70 | TRANSPORTATION EQUIPMENT | $ 2,247,431 | $ 2,247,431 | $ 1,883,604 | |
| 396.70 | COMMUNICATION EQUIPMENT * | $ 44,736 | $ 57,519 | $ 67,106 | |
| | TOTAL | $ 392,724,620 | $ 493,190,035 | $ 414,305,664 | $ 78,884,371 |
| | * - The Nine Accounts Recommended Adjusted by OCA | | $ 360,793,981 | $ 285,971,032 | $ 74,822,949 |

10/16/2020

APPLYING AQUA PENNSYLVANIA, INC. DEPRECIATION RATES TO
DELCORA ASSETS PER OCA RECOMMENDATION

ACCOUNT 353.30 LAND AND LAND RIGHTS - PUMPING

CALCULATED ANNUAL AND ACCRUED DEPRECIATION

| YEAR | ORIGINAL COST | AVG. LIFE | --ANNUAL ACCRUAL-- RATE | AMOUNT | EXP. | --ACCRUED DEPREC.-- FACTOR | AMOUNT |
|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| NONDEPRECIABLE | | | | | | | |
| 1976 | 12,000.00 | | | | | | |
| 1977 | 79,500.00 | | | | | | |
| 2014 | 40,000.00 | | | | | | |
| | 131,500.00 | | | | | | |

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 0.00

10/16/2020

APPLYING AQUA PENNSYLVANIA, INC. DEPRECIATION RATES TO
DELCORA ASSETS PER OCA RECOMMENDATION

ACCOUNT 354.30 STRUCTURES AND IMPROVEMENTS - PUMPING

CALCULATED ANNUAL AND ACCRUED DEPRECIATION

| YEAR | ORIGINAL COST | AVG. LIFE | --ANNUAL ACCRUAL-- RATE | AMOUNT | EXP. | --ACCRUED DEPREC.-- FACTOR | AMOUNT |
|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| SURVIVOR CURVE.. IOWA 60-S1 | | | | | | | |
| NET SALVAGE PERCENT.. 0 | | | | | | | |
| 1937 | 325,082.22 | 60.00 | 1.67 | 5,428.87 | 10.93 | 0.8178 | 265,862 |
| 1951 | 1,255,768.89 | 60.00 | 1.67 | 20,971.34 | 15.89 | 0.7352 | 923,204 |
| 1955 | 6,493,702.09 | 60.00 | 1.67 | 108,444.82 | 17.44 | 0.7093 | 4,606,178 |
| 1956 | 139,965.73 | 60.00 | 1.67 | 2,337.43 | 17.83 | 0.7028 | 98,372 |
| 1964 | 543,917.74 | 60.00 | 1.67 | 9,083.43 | 21.19 | 0.6468 | 351,822 |
| 1965 | 1,324,532.84 | 60.00 | 1.67 | 22,119.70 | 21.64 | 0.6393 | 846,814 |
| 1966 | 169,301.11 | 60.00 | 1.67 | 2,827.33 | 22.09 | 0.6318 | 106,970 |
| 1970 | 171,319.22 | 60.00 | 1.67 | 2,861.03 | 23.95 | 0.6008 | 102,934 |
| 1974 | 17,334,749.67 | 60.00 | 1.67 | 289,490.32 | 25.91 | 0.5682 | 9,849,085 |
| 1976 | 21,960,704.82 | 60.00 | 1.67 | 366,743.77 | 26.94 | 0.5510 | 12,100,348 |
| 1978 | 24,812,926.92 | 60.00 | 1.67 | 414,375.88 | 28.00 | 0.5333 | 13,233,478 |
| 1979 | 171,412.05 | 60.00 | 1.67 | 2,862.58 | 28.54 | 0.5243 | 89,876 |
| 1997 | 1,132,050.31 | 60.00 | 1.67 | 18,905.24 | 40.01 | 0.3332 | 377,165 |
| 2006 | 1,461,723.79 | 60.00 | 1.67 | 24,410.79 | 47.23 | 0.2128 | 311,099 |
| 2009 | 2,799,886.37 | 60.00 | 1.67 | 46,758.10 | 49.89 | 0.1685 | 471,781 |
| 2013 | 10,098,291.06 | 60.00 | 1.67 | 168,641.46 | 53.61 | 0.1065 | 1,075,468 |
| 2014 | 2,645,059.59 | 60.00 | 1.67 | 44,172.50 | 54.57 | 0.0905 | 239,378 |
| 2016 | 1,896,942.28 | 60.00 | 1.67 | 31,678.94 | 56.52 | 0.0580 | 110,023 |
| | 94,737,336.70 | | | 1,582,113.53 | | | 45,159,857 |

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.67

10/16/2020

APPLYING AQUA PENNSYLVANIA, INC. DEPRECIATION RATES TO
DELCORA ASSETS PER OCA RECOMMENDATION

ACCOUNT 354.40 STRUCTURES AND IMPROVEMENTS - TREATMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION

| YEAR | ORIGINAL COST | AVG. LIFE | --ANNUAL ACCRUAL-- RATE | AMOUNT | EXP. | --ACCRUED DEPREC.-- FACTOR | AMOUNT |
|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| SURVIVOR CURVE.. IOWA 60-R2.5 | | | | | | | |
| NET SALVAGE PERCENT.. 0 | | | | | | | |
| 1972 | 949,144.34 | 60.00 | 1.67 | 15,850.71 | 21.16 | 0.6473 | 614,410 |
| 1974 | 24,001,550.49 | 60.00 | 1.67 | 400,825.89 | 22.44 | 0.6260 | 15,024,971 |
| 1988 | 407,407.40 | 60.00 | 1.67 | 6,803.70 | 32.46 | 0.4590 | 187,000 |
| 1989 | 1,276,362.82 | 60.00 | 1.67 | 21,315.26 | 33.24 | 0.4460 | 569,258 |
| 1992 | 3,817,583.57 | 60.00 | 1.67 | 63,753.65 | 35.63 | 0.4062 | 1,550,588 |
| 1993 | 347,469.42 | 60.00 | 1.67 | 5,802.74 | 36.44 | 0.3927 | 136,441 |
| 1994 | 9,311.69 | 60.00 | 1.67 | 155.51 | 37.25 | 0.3792 | 3,531 |
| 2000 | 37,268.15 | 60.00 | 1.67 | 622.38 | 42.30 | 0.2950 | 10,994 |
| 2001 | 1,666,114.52 | 60.00 | 1.67 | 27,824.11 | 43.16 | 0.2807 | 467,628 |
| 2003 | 5,804,861.12 | 60.00 | 1.67 | 96,941.18 | 44.90 | 0.2517 | 1,460,909 |
| 2005 | 716,892.77 | 60.00 | 1.67 | 11,972.11 | 46.67 | 0.2222 | 159,272 |
| 2006 | 452,356.22 | 60.00 | 1.67 | 7,554.35 | 47.56 | 0.2073 | 93,787 |
| 2007 | 691,505.08 | 60.00 | 1.67 | 11,548.13 | 48.45 | 0.1925 | 133,115 |
| 2010 | 542,507.10 | 60.00 | 1.67 | 9,059.87 | 51.17 | 0.1472 | 79,841 |
| 2015 | 56,296.14 | 60.00 | 1.67 | 940.15 | 55.77 | 0.0705 | 3,969 |
| 2018 | 615,773.65 | 60.00 | 1.67 | 10,283.42 | 58.58 | 0.0237 | 14,575 |
| | 41,392,404.48 | | | 691,253.16 | | | 20,510,289 |

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.67

10/16/2020

APPLYING AQUA PENNSYLVANIA, INC. DEPRECIATION RATES TO
DELCORA ASSETS PER OCA RECOMMENDATION

ACCOUNT 354.70 STRUCTURES AND IMPROVEMENTS - GENERAL PLANT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION

| YEAR | ORIGINAL COST | AVG. LIFE | --ANNUAL ACCRUAL-- RATE | AMOUNT | EXP. | --ACCRUED DEPREC.-- FACTOR | AMOUNT |
|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| SURVIVOR CURVE.. IOWA 50-R3 | | | | | | | |
| NET SALVAGE PERCENT.. 0 | | | | | | | |
| 1997 | 3,788,775.30 | 50.00 | 2.00 | 75,775.51 | 29.00 | 0.4200 | 1,591,286 |
| 2013 | 121,829.28 | 50.00 | 2.00 | 2,436.59 | 43.66 | 0.1268 | 15,448 |
| 2016 | 441,945.35 | 50.00 | 2.00 | 8,838.91 | 46.57 | 0.0686 | 30,317 |
| 2019 | 174,000.00 | 50.00 | 2.00 | 3,480.00 | 49.51 | 0.0098 | 1,705 |
| | 4,526,549.93 | | | 90,531.01 | | | 1,638,756 |

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 2.00

10/16/2020

APPLYING AQUA PENNSYLVANIA, INC. DEPRECIATION RATES TO
DELCORA ASSETS PER OCA RECOMMENDATION

ACCOUNT 360.21 COLLECTION SEWERS - FORCE - MAINS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION

| YEAR | ORIGINAL COST | AVG. LIFE | --ANNUAL ACCRUAL-- RATE | AMOUNT | EXP. | --ACCRUED DEPREC.-- FACTOR | AMOUNT |
|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| SURVIVOR CURVE.. IOWA 75-R2.5 | | | | | | | |
| NET SALVAGE PERCENT.. 0 | | | | | | | |
| 1931 | 371,744.10 | 75.00 | 1.33 | 4,944.20 | 12.75 | 0.8300 | 308,548 |
| 1937 | 586,677.00 | 75.00 | 1.33 | 7,802.80 | 14.80 | 0.8027 | 470,908 |
| 1951 | 119,974.40 | 75.00 | 1.33 | 1,595.66 | 21.15 | 0.7180 | 86,142 |
| 1956 | 211,661.21 | 75.00 | 1.33 | 2,815.09 | 23.95 | 0.6807 | 144,071 |
| 1964 | 208,362.58 | 75.00 | 1.33 | 2,771.22 | 28.95 | 0.6140 | 127,935 |
| 1965 | 239,889.53 | 75.00 | 1.33 | 3,190.53 | 29.61 | 0.6052 | 145,181 |
| 1966 | 305,039.28 | 75.00 | 1.33 | 4,057.02 | 30.28 | 0.5963 | 181,886 |
| 1970 | 446,452.50 | 75.00 | 1.33 | 5,937.82 | 33.05 | 0.5593 | 249,714 |
| 1972 | 17,542,349.04 | 75.00 | 1.33 | 233,313.24 | 34.48 | 0.5403 | 9,477,605 |
| 1974 | 19,206,063.74 | 75.00 | 1.33 | 255,440.65 | 35.94 | 0.5208 | 10,002,518 |
| 1977 | 24,338,898.27 | 75.00 | 1.33 | 323,707.35 | 38.18 | 0.4909 | 11,948,695 |
| 1978 | 11,529,749.45 | 75.00 | 1.33 | 153,345.67 | 38.94 | 0.4808 | 5,543,504 |
| 1990 | 188,266.60 | 75.00 | 1.33 | 2,503.95 | 48.53 | 0.3529 | 66,445 |
| 2000 | 5,522,927.59 | 75.00 | 1.33 | 73,454.94 | 57.11 | 0.2385 | 1,317,384 |
| 2007 | 1,467,618.64 | 75.00 | 1.33 | 19,519.33 | 63.39 | 0.1548 | 227,187 |
| 2009 | 15,614,516.45 | 75.00 | 1.33 | 207,673.07 | 65.21 | 0.1305 | 2,038,163 |
| 2010 | 1,402,338.00 | 75.00 | 1.33 | 18,651.10 | 66.13 | 0.1183 | 165,855 |
| 2013 | 6,767,430.88 | 75.00 | 1.33 | 90,006.83 | 68.90 | 0.0813 | 550,395 |
| 2014 | 5,527,167.09 | 75.00 | 1.33 | 73,511.32 | 69.84 | 0.0688 | 380,269 |
| 2016 | 131,799.34 | 75.00 | 1.33 | 1,752.93 | 71.70 | 0.0440 | 5,799 |
| 2017 | 1,052,631.08 | 75.00 | 1.33 | 13,999.99 | 72.64 | 0.0315 | 33,126 |
| | 112,781,556.77 | | | 1,499,994.71 | | | 43,471,330 |

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.33

10/16/2020

APPLYING AQUA PENNSYLVANIA, INC. DEPRECIATION RATES TO
DELCORA ASSETS PER OCA RECOMMENDATION

ACCOUNT 361.21 COLLECTION SEWERS - GRAVITY - MAINS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION

| YEAR | ORIGINAL COST | AVG. LIFE | --ANNUAL ACCRUAL-- RATE | AMOUNT | EXP. | --ACCRUED DEPREC.-- FACTOR | AMOUNT |
|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| SURVIVOR CURVE.. IOWA 75-R2.5 | | | | | | | |
| NET SALVAGE PERCENT.. 0 | | | | | | | |
| 1900 | 25,876,890.00 | 75.00 | 1.33 | 344,162.64 | 5.17 | 0.9311 | 24,093,196 |
| 1926 | 447,050.37 | 75.00 | 1.33 | 5,945.77 | 11.28 | 0.8496 | 379,814 |
| 1930 | 29,240,706.22 | 75.00 | 1.33 | 388,901.39 | 12.44 | 0.8341 | 24,390,550 |
| 1931 | 626,791.35 | 75.00 | 1.33 | 8,336.32 | 12.75 | 0.8300 | 520,237 |
| 1937 | 4,762,212.00 | 75.00 | 1.33 | 63,337.42 | 14.80 | 0.8027 | 3,822,485 |
| 1944 | 1,169,007.84 | 75.00 | 1.33 | 15,547.80 | 17.69 | 0.7641 | 893,274 |
| 1956 | 117,677.37 | 75.00 | 1.33 | 1,565.11 | 23.95 | 0.6807 | 80,099 |
| 1960 | 11,163,114.53 | 75.00 | 1.33 | 148,469.42 | 26.37 | 0.6484 | 7,238,163 |
| 1961 | 2,407,239.10 | 75.00 | 1.33 | 32,016.28 | 27.00 | 0.6400 | 1,540,633 |
| 1966 | 458,279.64 | 75.00 | 1.33 | 6,095.12 | 30.28 | 0.5963 | 273,258 |
| 1969 | 399,122.76 | 75.00 | 1.33 | 5,308.33 | 32.35 | 0.5687 | 226,969 |
| 1970 | 4,520,373.00 | 75.00 | 1.33 | 60,120.96 | 33.05 | 0.5593 | 2,528,380 |
| 1971 | 330,370.66 | 75.00 | 1.33 | 4,393.93 | 33.76 | 0.5499 | 181,661 |
| 1976 | 34,281.00 | 75.00 | 1.33 | 455.94 | 37.43 | 0.5009 | 17,172 |
| 1985 | 137,330.82 | 75.00 | 1.33 | 1,826.50 | 44.43 | 0.4076 | 55,976 |
| 1986 | 498,070.67 | 75.00 | 1.33 | 6,624.34 | 45.24 | 0.3968 | 197,634 |
| 1990 | 3,612,396.77 | 75.00 | 1.33 | 48,044.88 | 48.53 | 0.3529 | 1,274,923 |
| 1992 | 31,135.17 | 75.00 | 1.33 | 414.10 | 50.21 | 0.3305 | 10,291 |
| 2004 | 150,362.33 | 75.00 | 1.33 | 1,999.82 | 60.68 | 0.1909 | 28,709 |
| 2005 | 2,813,666.64 | 75.00 | 1.33 | 37,421.77 | 61.58 | 0.1789 | 503,449 |
| 2006 | 329,298.73 | 75.00 | 1.33 | 4,379.67 | 62.48 | 0.1669 | 54,970 |
| 2007 | 47,220.76 | 75.00 | 1.33 | 628.04 | 63.39 | 0.1548 | 7,310 |
| 2008 | 151,725.32 | 75.00 | 1.33 | 2,017.95 | 64.30 | 0.1427 | 21,647 |
| 2009 | 693,524.82 | 75.00 | 1.33 | 9,223.88 | 65.21 | 0.1305 | 90,526 |
| 2010 | 171,606.75 | 75.00 | 1.33 | 2,282.37 | 66.13 | 0.1183 | 20,296 |
| 2012 | 249,561.07 | 75.00 | 1.33 | 3,319.16 | 67.98 | 0.0936 | 23,359 |
| 2015 | 351,224.83 | 75.00 | 1.33 | 4,671.29 | 70.77 | 0.0564 | 19,809 |
| 2016 | 794,599.22 | 75.00 | 1.33 | 10,568.17 | 71.70 | 0.0440 | 34,962 |
| | 91,584,839.74 | | | 1,218,078.37 | | | 68,529,752 |

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.33

10/16/2020

APPLYING AQUA PENNSYLVANIA, INC. DEPRECIATION RATES TO
DELCORA ASSETS PER OCA RECOMMENDATION

ACCOUNT 361.23 COLLECTION SEWERS - GRAVITY - MANHOLES

CALCULATED ANNUAL AND ACCRUED DEPRECIATION

| YEAR | ORIGINAL COST | AVG. LIFE | --ANNUAL ACCRUAL-- RATE | AMOUNT | EXP. | --ACCRUED DEPREC.-- FACTOR | AMOUNT |
|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| SURVIVOR CURVE.. IOWA 75-R2.5 | | | | | | | |
| NET SALVAGE PERCENT.. 0 | | | | | | | |
| 1900 | 1,453,397.40 | 75.00 | 1.33 | 19,330.19 | 5.17 | 0.9311 | 1,353,215 |
| 1930 | 4,247,286.50 | 75.00 | 1.33 | 56,488.91 | 12.44 | 0.8341 | 3,542,789 |
| 1937 | 365,306.76 | 75.00 | 1.33 | 4,858.58 | 14.80 | 0.8027 | 293,221 |
| 1949 | 3,700,779.62 | 75.00 | 1.33 | 49,220.37 | 20.10 | 0.7320 | 2,708,971 |
| 1956 | 99,914.84 | 75.00 | 1.33 | 1,328.87 | 23.95 | 0.6807 | 68,009 |
| 1960 | 904,722.44 | 75.00 | 1.33 | 12,032.81 | 26.37 | 0.6484 | 586,622 |
| 1966 | 70,293.46 | 75.00 | 1.33 | 934.90 | 30.28 | 0.5963 | 41,914 |
| 1970 | 1,170,868.34 | 75.00 | 1.33 | 15,572.55 | 33.05 | 0.5593 | 654,902 |
| 1971 | 7,438.18 | 75.00 | 1.33 | 98.93 | 33.76 | 0.5499 | 4,090 |
| 1985 | 38,516.09 | 75.00 | 1.33 | 512.26 | 44.43 | 0.4076 | 15,699 |
| 1990 | 322,182.76 | 75.00 | 1.33 | 4,285.03 | 48.53 | 0.3529 | 113,708 |
| 1992 | 10,520.36 | 75.00 | 1.33 | 139.92 | 50.21 | 0.3305 | 3,477 |
| 2000 | 287,578.42 | 75.00 | 1.33 | 3,824.79 | 57.11 | 0.2385 | 68,596 |
| 2004 | 95,618.17 | 75.00 | 1.33 | 1,271.72 | 60.68 | 0.1909 | 18,256 |
| 2005 | 2,764,950.53 | 75.00 | 1.33 | 36,773.84 | 61.58 | 0.1789 | 494,733 |
| 2006 | 603,961.55 | 75.00 | 1.33 | 8,032.69 | 62.48 | 0.1669 | 100,819 |
| 2007 | 19,990.11 | 75.00 | 1.33 | 265.87 | 63.39 | 0.1548 | 3,094 |
| 2008 | 66,630.15 | 75.00 | 1.33 | 886.18 | 64.30 | 0.1427 | 9,506 |
| 2009 | 209,172.47 | 75.00 | 1.33 | 2,781.99 | 65.21 | 0.1305 | 27,303 |
| 2010 | 18,497.60 | 75.00 | 1.33 | 246.02 | 66.13 | 0.1183 | 2,188 |
| 2011 | 30,331.68 | 75.00 | 1.33 | 403.41 | 67.05 | 0.1060 | 3,215 |
| 2012 | 75,751.30 | 75.00 | 1.33 | 1,007.49 | 67.98 | 0.0936 | 7,090 |
| 2015 | 123,325.09 | 75.00 | 1.33 | 1,640.22 | 70.77 | 0.0564 | 6,956 |
| 2016 | 267,699.49 | 75.00 | 1.33 | 3,560.40 | 71.70 | 0.0440 | 11,779 |
| 2019 | 2,924.40 | 75.00 | 1.33 | 38.89 | 74.53 | 0.0063 | 18 |
| | 16,957,657.71 | | | 225,536.83 | | | 10,140,170 |

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.33

10/16/2020

APPLYING AQUA PENNSYLVANIA, INC. DEPRECIATION RATES TO
DELCORA ASSETS PER OCA RECOMMENDATION

ACCOUNT 362.20 SPECIAL COLLECTING STRUCTURES

CALCULATED ANNUAL AND ACCRUED DEPRECIATION

| YEAR | ORIGINAL COST | AVG. LIFE | --ANNUAL ACCRUAL-- RATE | AMOUNT | EXP. | --ACCRUED DEPREC.-- FACTOR | AMOUNT |
|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| SURVIVOR CURVE.. IOWA 40-R3 | | | | | | | |
| NET SALVAGE PERCENT.. 0 | | | | | | | |
| 1926 | 153,881.79 | 40.00 | | | | 1.0000 | 153,882 |
| 1930 | 1,091,032.33 | 40.00 | | | | 1.0000 | 1,091,032 |
| 1931 | 556,549.29 | 40.00 | | | | 1.0000 | 556,549 |
| 1961 | 5,638,142.89 | 40.00 | 2.50 | 140,953.57 | 2.22 | 0.9445 | 5,325,226 |
| 1969 | 646,293.20 | 40.00 | 2.50 | 16,157.33 | 4.30 | 0.8925 | 576,817 |
| 1974 | 1,889,294.69 | 40.00 | 2.50 | 47,232.37 | 5.83 | 0.8543 | 1,613,930 |
| 1984 | 11,722.69 | 40.00 | 2.50 | 293.07 | 10.42 | 0.7395 | 8,669 |
| 1986 | 262,791.49 | 40.00 | 2.50 | 6,569.79 | 11.62 | 0.7095 | 186,451 |
| 1987 | 924,884.85 | 40.00 | 2.50 | 23,122.12 | 12.25 | 0.6938 | 641,639 |
| 1999 | 1,288,906.60 | 40.00 | 2.50 | 32,222.66 | 21.10 | 0.4725 | 609,008 |
| 2002 | 1,425,797.65 | 40.00 | 2.50 | 35,644.94 | 23.63 | 0.4093 | 583,508 |
| 2003 | 1,122,068.44 | 40.00 | 2.50 | 28,051.71 | 24.49 | 0.3878 | 435,082 |
| 2005 | 3,777,087.98 | 40.00 | 2.50 | 94,427.20 | 26.26 | 0.3435 | 1,297,430 |
| 2009 | 2,325,182.14 | 40.00 | 2.50 | 58,129.55 | 29.90 | 0.2525 | 587,108 |
| 2012 | 1,097,917.95 | 40.00 | 2.50 | 27,447.95 | 32.72 | 0.1820 | 199,821 |
| 2018 | 465,258.65 | 40.00 | 2.50 | 11,631.47 | 38.53 | 0.0368 | 17,098 |
| | 22,676,812.63 | | | 521,883.73 | | | 13,883,250 |

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 2.30

10/16/2020

APPLYING AQUA PENNSYLVANIA, INC. DEPRECIATION RATES TO
DELCORA ASSETS PER OCA RECOMMENDATION

ACCOUNT 363.20 SERVICES TO CUSTOMERS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION

| YEAR | ORIGINAL COST | AVG. LIFE | --ANNUAL ACCRUAL-- RATE | AMOUNT | EXP. | --ACCRUED DEPREC.-- FACTOR | AMOUNT |
|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| SURVIVOR CURVE.. IOWA 70-R4<br>NET SALVAGE PERCENT.. 0 | | | | | | | |
| 1957 | 5,084,185.13 | 70.00 | 1.43 | 72,703.85 | 14.38 | 0.7946 | 4,039,741 |
| | 5,084,185.13 | | | 72,703.85 | | | 4,039,741 |

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.43

10/16/2020

APPLYING AQUA PENNSYLVANIA, INC. DEPRECIATION RATES TO
DELCORA ASSETS PER OCA RECOMMENDATION

ACCOUNT 364.20 FLOW MEASURING DEVICES

CALCULATED ANNUAL AND ACCRUED DEPRECIATION

| YEAR | ORIGINAL COST | AVG. LIFE | --ANNUAL ACCRUAL-- RATE | AMOUNT | EXP. | --ACCRUED DEPREC.-- FACTOR | AMOUNT |
|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| SURVIVOR CURVE.. IOWA 25-S2.5 | | | | | | | |
| NET SALVAGE PERCENT.. 0 | | | | | | | |
| 2011 | 6,229.48 | 25.00 | 4.00 | 249.18 | 16.62 | 0.3352 | 2,088 |
| 2012 | 7,769.05 | 25.00 | 4.00 | 310.76 | 17.57 | 0.2972 | 2,309 |
| 2013 | 17,059.29 | 25.00 | 4.00 | 682.37 | 18.54 | 0.2584 | 4,408 |
| 2014 | 74,376.60 | 25.00 | 4.00 | 2,975.06 | 19.52 | 0.2192 | 16,303 |
| 2015 | 3,599.21 | 25.00 | 4.00 | 143.97 | 20.51 | 0.1796 | 646 |
| 2016 | 195,105.06 | 25.00 | 4.00 | 7,804.20 | 21.50 | 0.1400 | 27,315 |
| 2017 | 12,211.98 | 25.00 | 4.00 | 488.48 | 22.50 | 0.1000 | 1,221 |
| 2018 | 4,165.83 | 25.00 | 4.00 | 166.63 | 23.50 | 0.0600 | 250 |
| 2019 | 346,857.20 | 25.00 | 4.00 | 13,874.29 | 24.50 | 0.0200 | 6,937 |
| | 667,373.70 | | | 26,694.94 | | | 61,477 |

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 4.00

10/16/2020

APPLYING AQUA PENNSYLVANIA, INC. DEPRECIATION RATES TO
DELCORA ASSETS PER OCA RECOMMENDATION

ACCOUNT 365.20 FLOW MEASURING INSTALLATIONS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION

| YEAR | ORIGINAL COST | AVG. LIFE | --ANNUAL ACCRUAL-- RATE | AMOUNT | EXP. | --ACCRUED DEPREC.-- FACTOR | AMOUNT |
|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| SURVIVOR CURVE.. IOWA 35-S3 | | | | | | | |
| NET SALVAGE PERCENT.. 0 | | | | | | | |
| 1977 | 66,073.91 | 35.00 | 2.86 | 1,889.71 | 4.54 | 0.8703 | 57,503 |
| | 66,073.91 | | | 1,889.71 | | | 57,503 |

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 2.86

10/16/2020

APPLYING AQUA PENNSYLVANIA, INC. DEPRECIATION RATES TO
DELCORA ASSETS PER OCA RECOMMENDATION

ACCOUNT 371.30 PUMPING EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION

| YEAR | ORIGINAL COST | AVG. LIFE | --ANNUAL ACCRUAL-- RATE | AMOUNT | EXP. | --ACCRUED DEPREC.-- FACTOR | AMOUNT |
|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| SURVIVOR CURVE.. IOWA 25-L0.5 | | | | | | | |
| NET SALVAGE PERCENT.. 0 | | | | | | | |
| 1975 | 144,705.85 | 25.00 | 4.00 | 5,788.23 | 8.30 | 0.6680 | 96,664 |
| 1977 | 1,151,526.01 | 25.00 | 4.00 | 46,061.04 | 8.69 | 0.6524 | 751,256 |
| 1994 | 481,419.16 | 25.00 | 4.00 | 19,256.77 | 12.87 | 0.4852 | 233,585 |
| 1995 | 1,363,705.88 | 25.00 | 4.00 | 54,548.24 | 13.17 | 0.4732 | 645,306 |
| 1996 | 418,932.22 | 25.00 | 4.00 | 16,757.29 | 13.48 | 0.4608 | 193,044 |
| 1997 | 759,265.96 | 25.00 | 4.00 | 30,370.64 | 13.79 | 0.4484 | 340,455 |
| 1998 | 542,771.53 | 25.00 | 4.00 | 21,710.86 | 14.11 | 0.4356 | 236,431 |
| 1999 | 394,360.90 | 25.00 | 4.00 | 15,774.44 | 14.44 | 0.4224 | 166,578 |
| 2002 | 619,773.16 | 25.00 | 4.00 | 24,790.93 | 15.46 | 0.3816 | 236,505 |
| 2006 | 7,648,605.60 | 25.00 | 4.00 | 305,944.22 | 16.95 | 0.3220 | 2,462,851 |
| 2009 | 2,795,733.72 | 25.00 | 4.00 | 111,829.35 | 18.21 | 0.2716 | 759,321 |
| 2013 | 868,489.62 | 25.00 | 4.00 | 34,739.58 | 20.30 | 0.1880 | 163,276 |
| 2017 | 3,679,952.48 | 25.00 | 4.00 | 147,198.10 | 22.96 | 0.0816 | 300,284 |
| | 20,869,242.09 | | | 834,769.69 | | | 6,585,556 |

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 4.00

10/16/2020

APPLYING AQUA PENNSYLVANIA, INC. DEPRECIATION RATES TO
DELCORA ASSETS PER OCA RECOMMENDATION

ACCOUNT 380.30 TREATMENT AND DISPOSAL EQUIP - PUMP STATIONS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION

| YEAR | ORIGINAL COST | AVG. LIFE | --ANNUAL ACCRUAL-- RATE | AMOUNT | EXP. | --ACCRUED DEPREC.-- FACTOR | AMOUNT |
|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| SURVIVOR CURVE.. IOWA 40-S0 | | | | | | | |
| NET SALVAGE PERCENT.. 0 | | | | | | | |
| 1974 | 19,636,363.39 | 40.00 | 2.50 | 490,909.08 | 13.50 | 0.6625 | 13,009,091 |
| 1994 | 13,301,958.62 | 40.00 | 2.50 | 332,548.97 | 22.86 | 0.4285 | 5,699,889 |
| 1998 | 729,861.89 | 40.00 | 2.50 | 18,246.55 | 24.99 | 0.3753 | 273,881 |
| 2002 | 1,487,227.23 | 40.00 | 2.50 | 37,180.68 | 27.26 | 0.3185 | 473,682 |
| 2003 | 2,028,911.15 | 40.00 | 2.50 | 50,722.78 | 27.85 | 0.3038 | 616,282 |
| 2005 | 9,268,615.24 | 40.00 | 2.50 | 231,715.38 | 29.06 | 0.2735 | 2,534,966 |
| 2007 | 76,638.73 | 40.00 | 2.50 | 1,915.97 | 30.33 | 0.2418 | 18,527 |
| 2010 | 71,370.76 | 40.00 | 2.50 | 1,784.27 | 32.33 | 0.1918 | 13,685 |
| 2017 | 14,757,305.89 | 40.00 | 2.50 | 368,932.65 | 37.70 | 0.0575 | 848,545 |
| 2018 | 7,207,832.95 | 40.00 | 2.50 | 180,195.82 | 38.58 | 0.0355 | 255,878 |
| | 68,566,085.85 | | | 1,714,152.15 | | | 23,744,426 |

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 2.50

10/16/2020

APPLYING AQUA PENNSYLVANIA, INC. DEPRECIATION RATES TO
DELCORA ASSETS PER OCA RECOMMENDATION

ACCOUNT 380.40 TREATMENT AND DISPOSAL EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION

| YEAR | ORIGINAL COST | AVG. LIFE | --ANNUAL ACCRUAL-- RATE | AMOUNT | EXP. | --ACCRUED DEPREC.-- FACTOR | AMOUNT |
|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| SURVIVOR CURVE.. IOWA 40-S1 | | | | | | | |
| NET SALVAGE PERCENT.. 0 | | | | | | | |
| 1939 | 2,753,953.28 | 40.00 | | | | 1.0000 | 2,753,953 |
| 1974 | 205,676,498.98 | 40.00 | 2.50 | 5,141,912.47 | 10.65 | 0.7338 | 150,915,131 |
| 1982 | 292,354.54 | 40.00 | 2.50 | 7,308.86 | 13.91 | 0.6523 | 190,688 |
| 1984 | 185,075.25 | 40.00 | 2.50 | 4,626.88 | 14.80 | 0.6300 | 116,597 |
| 1985 | 250,235.11 | 40.00 | 2.50 | 6,255.88 | 15.26 | 0.6185 | 154,770 |
| 1988 | 3,031,607.27 | 40.00 | 2.50 | 75,790.18 | 16.69 | 0.5828 | 1,766,669 |
| 1990 | 26,546.91 | 40.00 | 2.50 | 663.67 | 17.70 | 0.5575 | 14,800 |
| 1991 | 6,391,157.86 | 40.00 | 2.50 | 159,778.95 | 18.22 | 0.5445 | 3,479,985 |
| 1992 | 440,508.92 | 40.00 | 2.50 | 11,012.72 | 18.76 | 0.5310 | 233,910 |
| 1996 | 280,805.67 | 40.00 | 2.50 | 7,020.14 | 21.02 | 0.4745 | 133,242 |
| 1997 | 978,442.95 | 40.00 | 2.50 | 24,461.07 | 21.63 | 0.4593 | 449,350 |
| 1999 | 875,062.74 | 40.00 | 2.50 | 21,876.57 | 22.88 | 0.4280 | 374,527 |
| 2000 | 814,860.90 | 40.00 | 2.50 | 20,371.52 | 23.53 | 0.4118 | 335,519 |
| 2001 | 317,479.93 | 40.00 | 2.50 | 7,937.00 | 24.20 | 0.3950 | 125,405 |
| 2002 | 1,409,402.37 | 40.00 | 2.50 | 35,235.06 | 24.88 | 0.3780 | 532,754 |
| 2003 | 4,979,814.51 | 40.00 | 2.50 | 124,495.36 | 25.58 | 0.3605 | 1,795,223 |
| 2004 | 7,651,632.62 | 40.00 | 2.50 | 191,290.82 | 26.30 | 0.3425 | 2,620,684 |
| 2005 | 1,642,684.71 | 40.00 | 2.50 | 41,067.12 | 27.05 | 0.3238 | 531,819 |
| 2006 | 532,904.25 | 40.00 | 2.50 | 13,322.61 | 27.81 | 0.3048 | 162,403 |
| 2007 | 1,274,218.78 | 40.00 | 2.50 | 31,855.47 | 28.59 | 0.2853 | 363,471 |
| 2008 | 1,977,177.01 | 40.00 | 2.50 | 49,429.43 | 29.39 | 0.2653 | 524,446 |
| 2009 | 267,526.31 | 40.00 | 2.50 | 6,688.16 | 30.21 | 0.2448 | 65,477 |
| 2010 | 482,986.84 | 40.00 | 2.50 | 12,074.67 | 31.06 | 0.2235 | 107,948 |
| 2011 | 5,941,847.58 | 40.00 | 2.50 | 148,546.19 | 31.92 | 0.2020 | 1,200,253 |
| 2012 | 3,697,607.99 | 40.00 | 2.50 | 92,440.20 | 32.81 | 0.1798 | 664,645 |
| 2013 | 5,325,703.18 | 40.00 | 2.50 | 133,142.58 | 33.71 | 0.1573 | 837,467 |
| 2014 | 2,802,944.88 | 40.00 | 2.50 | 70,073.62 | 34.64 | 0.1340 | 375,595 |
| 2015 | 13,699,817.54 | 40.00 | 2.50 | 342,495.44 | 35.58 | 0.1105 | 1,513,830 |
| 2016 | 10,998,059.31 | 40.00 | 2.50 | 274,951.48 | 36.54 | 0.0865 | 951,332 |
| 2017 | 8,827,419.31 | 40.00 | 2.50 | 220,685.48 | 37.52 | 0.0620 | 547,300 |
| 2018 | 12,305,404.85 | 40.00 | 2.50 | 307,635.12 | 38.50 | 0.0375 | 461,453 |
| 2019 | 1,573,541.00 | 40.00 | 2.50 | 39,338.52 | 39.50 | 0.0125 | 19,669 |
| | 307,705,283.35 | | | 7,623,783.24 | | | 174,320,315 |

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 2.48

10/16/2020

APPLYING AQUA PENNSYLVANIA, INC. DEPRECIATION RATES TO
DELCORA ASSETS PER OCA RECOMMENDATION

ACCOUNT 390.70 COMPUTER AND SOFTWARE

CALCULATED ANNUAL AND ACCRUED DEPRECIATION

| YEAR | ORIGINAL COST | AVG. LIFE | --ANNUAL ACCRUAL-- RATE | AMOUNT | EXP. | --ACCRUED DEPREC.-- FACTOR | AMOUNT |
|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| SURVIVOR CURVE.. 5-SQUARE<br>NET SALVAGE PERCENT.. 0 | | | | | | | |
| 2016 | 303,617.33 | 5.00 | 20.00 | 60,723.47 | 1.50 | 0.7000 | 212,532 |
| | 303,617.33 | | | 60,723.47 | | | 212,532 |

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 20.00

10/16/2020

APPLYING AQUA PENNSYLVANIA, INC. DEPRECIATION RATES TO
DELCORA ASSETS PER OCA RECOMMENDATION

ACCOUNT 391.70 TRANSPORTATION EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION

| YEAR | ORIGINAL COST | AVG. LIFE | --ANNUAL ACCRUAL-- RATE | AMOUNT | EXP. | --ACCRUED DEPREC.-- FACTOR | AMOUNT |
|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| SURVIVOR CURVE.. IOWA 15-L3 | | | | | | | |
| NET SALVAGE PERCENT.. 0 | | | | | | | |
| 1998 | 61,570.01 | 15.00 | 6.67 | 4,106.72 | 3.07 | 0.7953 | 48,968 |
| 1999 | 296,474.73 | 15.00 | 6.67 | 19,774.86 | 3.33 | 0.7780 | 230,657 |
| 2004 | 95,242.03 | 15.00 | 6.67 | 6,352.64 | 4.42 | 0.7053 | 67,177 |
| 2005 | 26,689.30 | 15.00 | 6.67 | 1,780.18 | 4.59 | 0.6940 | 18,522 |
| 2006 | 396,897.52 | 15.00 | 6.67 | 26,473.06 | 4.78 | 0.6813 | 270,418 |
| 2007 | 145,275.09 | 15.00 | 6.67 | 9,689.85 | 5.04 | 0.6640 | 96,463 |
| 2008 | 410,632.28 | 15.00 | 6.67 | 27,389.17 | 5.38 | 0.6413 | 263,351 |
| 2009 | 346,963.40 | 15.00 | 6.67 | 23,142.46 | 5.84 | 0.6107 | 211,880 |
| 2011 | 265,337.40 | 15.00 | 6.67 | 17,698.00 | 7.11 | 0.5260 | 139,567 |
| 2012 | 310,943.71 | 15.00 | 6.67 | 20,739.95 | 7.89 | 0.4740 | 147,387 |
| 2013 | 57,456.42 | 15.00 | 6.67 | 3,832.34 | 8.74 | 0.4173 | 23,978 |
| 2014 | 459,587.27 | 15.00 | 6.67 | 30,654.47 | 9.63 | 0.3580 | 164,532 |
| 2015 | 111,988.69 | 15.00 | 6.67 | 7,469.65 | 10.56 | 0.2960 | 33,149 |
| 2016 | 353,022.09 | 15.00 | 6.67 | 23,546.57 | 11.52 | 0.2320 | 81,901 |
| 2017 | 274,811.57 | 15.00 | 6.67 | 18,329.93 | 12.50 | 0.1667 | 45,803 |
| 2018 | 330,983.10 | 15.00 | 6.67 | 22,076.57 | 13.50 | 0.1000 | 33,098 |
| 2019 | 202,609.04 | 15.00 | 6.67 | 13,514.02 | 14.50 | 0.0333 | 6,753 |
| | 4,146,483.65 | | | 276,570.44 | | | 1,883,604 |

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 6.67

10/16/2020

APPLYING AQUA PENNSYLVANIA, INC. DEPRECIATION RATES TO
DELCORA ASSETS PER OCA RECOMMENDATION

ACCOUNT 396.70 COMMUNICATION EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION

| YEAR (1) | ORIGINAL COST (2) | AVG. LIFE (3) | --ANNUAL ACCRUAL-- RATE (4) | AMOUNT (5) | EXP. (6) | --ACCRUED DEPREC.-- FACTOR (7) | AMOUNT (8) |
|---|---|---|---|---|---|---|---|
| SURVIVOR CURVE.. 10-SQUARE<br>NET SALVAGE PERCENT.. 0 | | | | | | | |
| 2016 | 191,730.14 | 10.00 | 10.00 | 19,173.01 | 6.50 | 0.3500 | 67,106 |
| | 191,730.14 | | | 19,173.01 | | | 67,106 |

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 10.00

10/16/2020

APPLYING AQUA PENNSYLVANIA, INC. DEPRECIATION RATES TO
DELCORA ASSETS PER OCA RECOMMENDATION

SUMMARY OF
CALCULATED ANNUAL AND ACCRUED DEPRECIATION

| ACCT | GP | AVG. AGE | ORIGINAL COST | --ANNUAL ACCRUAL-- RATE | AMOUNT | ACCRUED DEPRECIATION |
|---|---|---|---|---|---|---|
| 35330 | | 31.3 | 131,500.00 | | | |
| 35430 | | 38.0 | 94,737,336.70 | 1.67 | 1,582,113.53 | 45,159,857 |
| 35440 | | 35.3 | 41,392,404.48 | 1.67 | 691,253.16 | 20,510,289 |
| 35470 | | 19.4 | 4,526,549.93 | 2.00 | 90,531.01 | 1,638,756 |
| 36021 | | 33.4 | 112,781,556.77 | 1.33 | 1,499,994.71 | 43,471,330 |
| 36121 | | 82.8 | 91,584,839.74 | 1.33 | 1,218,078.37 | 68,529,752 |
| 36123 | | 61.3 | 16,957,657.71 | 1.33 | 225,536.83 | 10,140,170 |
| 36220 | | 35.6 | 22,676,812.63 | 2.30 | 521,883.73 | 13,883,250 |
| 36320 | | 62.5 | 5,084,185.13 | 1.43 | 72,703.85 | 4,039,741 |
| 36420 | | 2.3 | 667,373.70 | 4.00 | 26,694.94 | 61,477 |
| 36520 | | 42.5 | 66,073.91 | 2.86 | 1,889.71 | 57,503 |
| 37130 | | 14.7 | 20,869,242.09 | 4.00 | 834,769.69 | 6,585,556 |
| 38030 | | 21.8 | 68,566,085.85 | 2.50 | 1,714,152.15 | 23,744,426 |
| 38040 | | 34.2 | 307,705,283.35 | 2.48 | 7,623,783.24 | 174,320,315 |
| 39070 | | 3.5 | 303,617.33 | 20.00 | 60,723.47 | 212,532 |
| 39170 | | 8.5 | 4,146,483.65 | 6.67 | 276,570.44 | 1,883,604 |
| 39670 | | 3.5 | 191,730.14 | 10.00 | 19,173.01 | 67,106 |
| GRAND TOTAL | | 39.2 | 792,388,733.11 | 2.08 | 16,459,851.84 | 414,305,664 |

Aqua Pennsylvania Wastewater, Inc. For the Year Ended December 31, 2019

(Company Name)

# 502. IMPORTANT PHYSICAL PLANT DETAILS

For each NPDES permitted facility covered by this PUC Annual Report, provide written responses for each of the items listed below on pages to be attached, following this schedule. Number each attached page as (# of #).

1. **Collection System.** Provide a written description of the collection system with the description ending at the headworks of the wastewater treatment plant. This description should depict the sizes and types of all piping materials used in the construction of the collection system, and if applicable, note the percentage of gravity vs. pressurized collection piping used. Provide descriptive details on any and all pumping and/or lift stations used. Annually, provide an update to the collection system information requested above by including details on all extension constructed and details on any portion of the system that has been retired, replaced or abandoned. Identify all known extension projects in the preliminary planning stages. Describe in detail the means used to finance each newly constructed extension. Provide a discussion on past calendar year collection system monitoring, maintenance, repair and rehabilitation work, including routine and special activities, and infiltration / inflow monitoring. Describe the condition of the collection system by identifying if any portion of the conveyance capacity is being exceeded or will be exceeded in the next five years, and identify portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system, and prevent or eliminate bypassing, overflow, excessive infiltration and other system problems. Describe the present condition of each collection system pump/lift station, and include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year flow for each station.

2. **Treatment Plant.** Provide a written description of the wastewater treatment facilities, starting at the headworks and ending at the outfall structure, including descriptive details of any at-plant pump/lift facilities, in addition to all auxiliary structures and/or buildings and their uses. If helpful in preparing this description, attach a copy of the plant's flow schematic which shall be no larger than letter size. When advanced treatment is provided, the description should describe how the unit treatment processes are used to meet the final effluent discharge requirements listed on the NPDES permit. Where applicable, provide brief descriptive details of the equipment used in aerating and pumping of activated sludges. Provide details on wasted sludge processing, current ultimate disposal practices and locations. Identify generically all chemicals added to each of unit processes and their purposes. Indicate the designed hydraulic and organic loading capacities of the treatment plant. Provide an annual update on the present condition of all facilities located at the wastewater treatment site, including identifying any portions of the plant where conveyance or treatment capacity is being exceeded, or will be exceeded in the next five years and identifying any portions where rehabilitation or updating is needed or is underway to maintain the integrity of these facilities. Include a discussion of specific problems with the wastewater treatment plant and action taken to eliminate or prevent potential or recurring problems. Describe in detail any portion of the treatment system at the plant site that has been retired, replaced or abandoned. Provide the Certification Number of the current treatment plant operator and the date the effluent flowmeter was last calibrated.

4 Number of pages attached to this schedule

Aqua Pennsylvania Wastewater, Inc. For the Year Ended December 31, 2019
(Company Name)

General Comments:
Each system as identified below is relatively small in size and number of customers.
Each operating division is "self-sustained" and no substantial growth or expansion or extensions are projected in the next 2 to 5 years in any of the divisions.

| | | | |
|---|---|---|---|
| **East Bradford** | WQM# 1596404-T1 | East Bradford Twp, Chester Co. | 0.018 MGD |
| Collection System | Series of 8" plastic gravity and 3 remote lift stations. Force main directly to plant. | | |
| Treatment Plant | Lagoon Treatment plant and spray irrigation disposal. | | |
| **Little Washington** | NPDES#PA0050458 and WQM# 1596401 | East Brandywine Twp, Chester Co | 0.155 MGD |
| Collection System | Series of 8" plastic gravity and 1 remote lift station. Force main directly to plant. | | |
| Treatment Plant | Comminutor, BNR Treatment Process, Tertiary Filter, UV Disinfection, Subsurface Bed disposal w/stream discharge. | | |
| **Peddler's View** | WQM# 0993408 | Solebury Twp, Chester Co. | 0.06 MGD |
| Collection System | Series of 8" plastic gravity to treatment plant. | | |
| Treatment Plant | Comminutor, SBR Treatment Plant, Chlorine Disinfection, Spray Irrigation Disposal | | |
| **Willistown Woods** | NPDES#PA0050075 | Willistown Twp, Chester Co | 0.0175 MGD |
| Collection System | Series of 8" plastic gravity and 3 remote lift stations. Force main directly to plant. | | |
| Treatment Plant | Comminutor, BNR Treatment Process, Tertiary Filter, UV Disinfection, stream discharge disposal. | | |
| **Twin Hills** | WQM# 1598409 | West Pikeland Twp, Chester Co | 0.735 MGD |
| Collection System | Series of 8" plastic gravity and 2 remote lift stations. Force main directly to plant. | | |
| Treatment Plant | Comminutor, SBR Treatment Plant, Tertiary Filter, Chlorine Disinfection, Subsurface Bed Disposal | | |
| **Plumsock** | WQM# 1592402 | Willistown Twp, Chester Co | 0.0099 MGD |
| Collection System | Series of 8" plastic gravity and 1 remote lift station. Force main directly to plant. | | |
| Treatment Plant | SBR Treatment Plant, Tertiary Filter, Chlorine Disinfection, Subsurface Bed Disposal | | |
| **Media Borough** | NPDES#PA0024121 | Media Borough, Delaware Co. | 1.8 MGD |
| Collection System | Series of 8" to 12" terra cotta/plastic gravity main, 2 remote lift stations, force mains to plant | | |
| Treatment Plant | Mechanical Screen, Primary Settling, Extended Aeration Treatment, Chlorine Disinfection, Stream Discharge | | |
| **White Haven** | NPDES#PA0020435-A1 | White Haven Borough, Luzerne Co | 0.6 MGD |
| Collection System | Series of 8" to 12" terra cotta/plastic gravity mains to plant | | |
| Treatment Plant | Mechanical Screen, Influent Lift Station, Extended Aeration Treatment, Primary Settling, UV Disinfection, Stream Discharge | | |
| **Bridlewood** | NPDES#PA0057011-A1 and WQM# 1596410 | Thornbury Twp, Chester Co | 0.103 MGD |
| Collection System | Series of 8" plastic gravity and 1 remote lift station. Force main directly to plant. | | |
| | Comminutor, SBR Treatment Plant, Tertiary Filter, UV Disinfection, Subsurface Bed Disposal w/Stream Discharge | | |
| **Rivercrest** | NPDES#PA0060551 | Tunkhannock Twp, Wyoming Co | 0.07 MGD |
| Collection System | Series of 8" plastic gravity mains to plant | | |
| Treatment Plant | Mechanical Screen, Extended Aeration Treatment, Primary Settling, Chlorine Disinfection, Stream Discharge | | |
| **Newlin Green** | WQM# 1503410 | Newlin Twp, Chester Co | 0.045 MGD |
| Collection System | Series of 4" plastic low pressure force main to plant. | | |
| Treatment Plant | BNR Treatment Process, Tertiary Filter, Chlorine Disinfection, Subsurface Bed Disposal | | |
| **Pinecrest** | NPDES#PA0061719 | Tobyhanna Twp, Monroe Co. | 0.1 MGD |
| Collection System | Series of 8" plastic gravity and 2 remote lift stations. Force main directly to plant. | | |
| Treatment Plant | Comminutor, SBR Treatment Plant, Tertiary Filtration, UV Disinfection, Stream Discharge | | |

Aqua Pennsylvania Wastewater, Inc. For the Year Ended December 31, 2019
(Company Name)

| | | | |
|---|---|---|---|
| **Eagle Rock** | NPDES#PA0061590 | North Union Twp, Schuylkill Co. | 0.35 MGD |
| Collection System | Series of 8", 10" terra cotta and plastic gravity, 4" plastic low pressure force main, 29 remote lift stations to gravity collection | | |
| Treatment Plant | Mechanical Screen, Extended Aeration Treatment, Primary Clarification, Chlorine Disinfection, Stream Discharge | | |
| **Links of Gettysburg** | NPDES#PA0246484 | Mount Joy Twp, Adams Co | 0.06 MGD |
| Collection System | Series of 8" plastic gravity and 1 remote lift station. Force main directly to plant. | | |
| Treatment Plant | Comminutor, Extended Aeration Treatment Plant, Primary Clarification, UV Disinfection, Stream Discharge | | |
| **Thornhurst** | NPDES#PA0060411 | Lehigh Twp, Lackawanna Co. | 0.07 MGD |
| Collection System | Series of 8" plastic gravity mains to plant | | |
| Treatment Plant | Comminutor, Extended Aeration Treatment, Primary Clarification, Chlorine Disinfection, Stream Discharge | | |
| **Deerfield Knoll** | WQM #1586408 T-3 | Willistown Twp, Chester Co | 0.025 MGD |
| Collection System | Series of 8" plastic gravity and 1 remote lift station. Force main directly to plant. | | |
| Treatment Plant | Comminutor, BNR Treatment Plant, Chlorine, Subsurface Bed Disposal | | |
| **Laurel Lakes** | NPDES#PA0060593 | Nuangola Twp, Luzerne Co | 0.07 MGD |
| Collection System | Series of 8" terra cotta and plastic gravity, 4" plastic low pressure force main directly to plant | | |
| Treatment Plant | Comminutor, Extended Aeration Treatment, Primary Clarification, Chlorine Disinfection, Stream Discharge | | |
| **Mast Hope** | NPDES#PA0060496 | Lackawaxen Twp, Pike Co | 0.15 MGD |
| Collection System | Series of 8" terra cotta and plastic gravity, 5 remote pump stations directly to plant | | |
| Treatment Plant | Comminutor,. Extended Aeration Treatment, Primary Clarification, Chlorine Disinfection, Stream Discharge | | |
| **Penn Oaks** | WQM#1596403 | Thornbury Twp, Chester Co | 0.0152 MGD |
| Collection System | Series of 8" plastic gravity and 1 remote lift station. Force main directly to plant. | | |
| Treatment Plant | Comminutor, SBR Treatment Plant, Tertiary Filter, Chlorine Disinfection, Subsurface Bed Disposal | | |
| **New Daleville** | WQM#1505402 | Londonderry Twp, Chester Co | 0.034 MGD |
| Collection System | Series of 8" plastic gravity to directly to plant. | | |
| Treatment Plant | Influent Pump Station, Comminutor, BNR Treatment Plant, Tertiary Filter, UV Disinfection, Subsurface Drip Disposal | | |
| **Cove Village** | NPDES#PA0070009 | North Union Twp, Schuylkill Co. | 0.07 MGD |
| Collection System | Series of 8" terra cotta and plastic gravity, 5 remote pump stations directly to plant | | |
| Treatment Plant | Comminutor, Extended Aeration Treatment, Primary Clarification, Chlorine Disinfection, Stream Discharge | | |
| **Washington Park** | NPDES#PA0060658 | Washington Twp, Wyoming Co. | 0.07 MGD |
| Collection System | Series of 8" plastic gravity to treatment plant. | | |
| Treatment Plant | Comminutor, Extended Aeration Treatment, Primary Clarification, UV Disinfection, Stream Discharge | | |
| **Stoney Creek** | NPDES#PA0244074 | Worcester Township, Montgomery County | 0.045 MGD |
| Collection System | Series of 8" plastic gravity main, one remote pump station to plant. | | |
| Treatment Plant | BNR Treatment Process, Tertiary Filter, Ultraviolet Disinfection, Stream Discharge | | |
| **Valley Forge** | WQM#4607408 | Upper Merion Twp, Montgomery County | 0.247 MGD |
| Collection System | 8" PVC gravity collection system and pumping station. | | |
| Treatment Plant | N/A | | |
| **Beech Mountain** | WQM#4081406-T2 | Butler Township, Luzerne County | N/A MGD |
| Collection System | Plastic Low pressure collection system and individual customer grinder pumps | | |
| Treatment Plant | N/A | | |
| **Lake Harmony** | NPDES#PA0061204 | Kidder Township, Carbon County | 0.4 MGD |
| Collection System | Plastic gravity and low pressure collection system and residential grinder pumps | | |
| Treatment Plant | Influent Lift Station, Comminutor, SBR Treatment, Tertiary Filtration, UV Disinfection, Stream Discharge | | |
| **Sage Hill** | WQM#1506409 | Thornbury Township, Chester County | 0.007 MGD |
| Collection System | Series of 8" plastic gravity mains to influent pump station at plant | | |
| Treatment Plant | Influent Pump Station, Comminutor, BNR Treatment Plant, Subsurface Drip Disposal | | |

Aqua Pennsylvania Wastewater, Inc. For the Year Ended December 31, 2019
(Company Name)

| | | | |
|---|---|---|---|
| **Woodloch Springs** | NPDES#PA0062341 | Lackawaxen Twp, Pike County | 0.12 MGD |
| Collection System | Series of 8" plastic gravity and 2 remote lift stations. Force main directly to plant. | | |
| Treatment Plant | SBR Treatment Plant, Chlorine Disinfection, Stream Discharge | | |
| **Penn Township** | NPDES#PA0058572 and WQM# 1501401 | Penn Township, Chester County | 0.429 MGD |
| Collection System | Series of 8" plastic gravity mains, 7 remote pump stations, | | |
| Treatment Plant | Treatment Plant, lakeside screen, 4 train BNR, UV Disinfection, Stream Discharge and RIB disposal. | | |
| **Bunker Hill** | NPDES#PA0061433 | Clinton Township, Wyoming County | 0.022 MGD |
| Collection System | Series of 8" gravity mains to comminutor and splitter box, | | |
| Treatment Plant | Mechanical Screen, Extended Aeration Treatment, Primary Clarification, Chlorine Disinfection, Stream Discharge | | |
| **Treasure Lake West** | NPDES#PA0228061 | Sandy Township, Clearfield County | 1.0 MGD |
| Collection System | Series of plastic gravity mains and various diameter low pressure sewer mains with six (6) intermediate lift stations. The East Headworks and Lift Station conveys all flow from approximately half of the system to the upgraded Treasure Lake West WWTP for treatment. The former Treasure Lake East Plant was decommissioned and demolished in late 2019. | | |
| Treatment Plant | Influent screens and pumping stations feeding equalization basins, a 2-train activated sludge treatment plant with two additional aeration basins, two clarifiers, UV disinfection, a post-aeration basin, then gravity flow to stream outfall. | | |
| **Honeycroft** | WQM#1506410 | Londonderry Township, Chester County | 0.0499 MGD |
| Collection System | Series of plastic gravity mains, 8" diameter, with precast concrete manholes flowing into a collection | | |
| Pumping Station | system pumping station which conveys the wastewater to the treatment facility. The Treatment plant | | |
| Treatment Plant | consists of influent screening, flow equalization tank pumping to two parallel train aerobic activated sludge reactor tanks. Activated sludge is separated in two parallel clarifiers and is then polished by a tertiary filtration system. Treated effluent is then stored in a effluent storage tank prior to disposal through a drip irrigation system. | | |
| **Emlenton** | NPDES #PA0023566 | Emlenton Borough, Venango County | 0.200 MGD |
| Collection System | The Emlenton service territory consists of Emlenton Borough, the southern portion of Richland Township, Venango County, and the northwestern portion of Richland Township, Clarion County and covers approximately 1,475 acres. The collection system consists of a 15" diameter to 18" diameter plastic trunk line interceptor which serves a collection system consisting of 8" diameter plastic sewer main with a majority of brick manholes. The gravity collection system is primarily VCP. Four (4) customer owned grinder pumps are utilized by two customers. | | |
| Treatment Facility | Flow from the collection system goes to an influent pump station at the wastewater treatment facility that consists of a 200,000 gallon per day rotating biological contactor (RBC) plant with a flow equalization tank, (RBC) plant with a flow equalization tank, primary sedimentation, two RBC units, two final clarifiers and chlorine disinfection. Biosolids are stored in a sludge storage tank and are dewatered by a belt filter press. | | |
| **Mariasville** | NPDES #PA0101907 | Mariasville, Clarion County | 0.008 MGD |
| Collection System | The Mariasville system consists of a low pressure PVC sewer collection system with 20 Aqua owned | | |
| Treatment Facility | grinder pumps that discharges to the treatment facility which consists of one 10,000 gallon septic tank and one 5,000 gallon septic tank discharging into a sand mound filtration system. Effluent from the Mariasville wastewater treatment facility discharges to Richey Run at one outfall location located in Salem Township, Clarion County. | | |
| **Lamartine** | WQM#1600407 | Salem Township, Clarion County | 0.021 MGD |
| Collection System | The Lamartine collection system consists of a low pressure wastewater collection system serving | | |
| Treatment Facility | 60 Aqua owned grinder pumps. The collection system piping is 1.5 inch, 2 inch and 3-inch diameter plastic pipe. The Lamartine wastewater treatment facility consists of a 10,740 gallon septic tank and a 5,000 gallon dosage/.storage tank discharging to three surface sand mounds discharging to groundwater. | | |

Aqua Pennsylvania Wastewater, Inc. For the Year Ended December 31, 2019
(Company Name)

| | | | | |
|---|---|---|---|---|
| **Tobyhanna** | NPDES #PA-0063533 | Tobyhanna Township, Monroe County | 0.30 | MGD |
| Collection System | The collection system encompasses an approximate 2-mile radius surrounding Blakeslee corners in the western section of Tobyhanna Township, Monroe County, Pennsylvania. The collection system is made up of approximately 5,700 linear feet of 12-inch gravity main, 62,200 linear feet of 8-inch gravity main, and 12,000 linear feet of 2 inch pressurized main. | | | |
| Treatment Facility | Influent Lift Station, Mechanical Screen, SBR Treatment, Tertiary Filtration, UV Disinfection, Stream Discharge | | | |
| **Avon Grove** | NPDES #PA0053783 | New London Township, Chester County | 0.02 | MGD |
| Collection System | The collection system consists of the sewer mains serving the elementary school, the intermediate school and the administration building which conveys the wastewater by gravity to the treatment system. | | | |
| Treatment Plant | The treatment facility consists of precast concrete tankage that make up the equalization tanks, process tanks and clarifiers. The treatment system is an activated sludge process that Aqua has upgrade from an extended air design to a 4-stage Bardenpho process that consists of a preanoxic treatment stage followed by an aerobic stage followed by a post anoxic stage followed by a final aeration step prior to clarification and newly installed UV disinfection. Phosphorus removal is achieved through chemical precipitation utilizing polyaluminum chloride. | | | |
| **King Road** | WQM# 51934 | Limerick Twp., Montgomery Co | 1.7 | MGD |
| Collection System | Series of 8”-36” plastic and ductile gravity and 14 lift stations. Force main directly to plant. | | | |
| Treatment Plant | Lakeside grit and rag removal, flow through SBR designed by Lakeside, UV disinfection. Thickened sludge hauled to Class A facility. | | | |
| **Possum Hollow** | WQM# 58041 | Limerick Twp., Montgomery Co | 0.7 | MGD |
| Collection System | Series of 8”-15” plastic and ductile gravity and 4 lift stations. 2 force mains directly to plant. | | | |
| Treatment Plant | Lakeside grit and rag removal, flow through SBR designed by Lakeside, UV disinfection. Thickened sludge hauled to Class A facility. | | | |
| **East Bradford Collection System** | WQM# 1584417 T-1, 1597412 T-1, 1503407 T-1, 1585415 T-1, and 1592415 T-1 | East Bradford Twp, Chester County | 1.274 | MGD (total of 5 permits) |
| Collection System | 8" PVC gravity collection system and 5 pumping stations with force main to West Chester treatment plant. | | | |
| Treatment Plant | N/A | | | |
| **Cheltenham Township Collection System** | | Cheltenham Twp, Montgomery County | 16 | MGD |
| Collection System | 8" Terra Cotta gravity collection system | | | |
| Treatment Plant | N/A | | | |

Aqua Pennsylvania Wastewater, Inc. For the Year Ended December 31, 2019

**610. Territory Served**

Report below the number of customers at the end of the year in respondent's distribution system in which service is furnished, setting forth by counties the number of customers and average number of customers during the year.

| County Code | Name of Pennsylvania County | Number Of Customers At End Of Year | Average Number Of Customers During Year |
|---|---|---|---|
| | (a) | (b) | (c) |
| 01 | Adams | 201 | 192 |
| 02 | Allegheny | | |
| 03 | Armstrong | | |
| 04 | Beaver | | |
| 05 | Bedford | | |
| 06 | Berks | 270 | |
| 07 | Blair | | |
| 08 | Bradford | | |
| 09 | Bucks | 213 | 214 |
| 10 | Butler | | |
| 11 | Cambria | | |
| 12 | Cameron | | |
| 13 | Carbon | 970 | 1,000 |
| 14 | Centre | | |
| 15 | Chester | 4,357 | 4,337 |
| 16 | Clarion | 53 | 67 |
| 17 | Clearfield | 2,171 | 2,215 |
| 18 | Clinton | | |
| 19 | Columbia | | |
| 20 | Crawford | | |
| 21 | Cumberland | | |
| 22 | Dauphin | | |
| 23 | Delaware | 7,097 | 7,111 |
| 24 | Elk | | |
| 25 | Erie | | |
| 26 | Fayette | | |
| 27 | Forest | | |
| 28 | Franklin | | |
| 29 | Fulton | | |
| 30 | Greene | | |
| 31 | Huntingdon | | |
| 32 | Indiana | | |
| 33 | Jefferson | | |
| 34 | Juniata | | |
| 35 | Lackawanna | | 344 |
| 36 | Lancaster | | |
| 37 | Lawrence | | |
| 38 | Lebanon | | |
| 39 | Lehigh | | |
| 40 | Luzerne | 2,914 | 1,917 |
| 41 | Lycoming | | |
| 42 | McKean | | |
| 43 | Mercer | | |
| 44 | Mifflin | | |
| 45 | Monroe | 1,077 | 1,096 |
| 46 | Montgomery | 15,693 | 10,728 |
| 47 | Montour | | |
| 48 | Northampton | | |
| 49 | Northumberland | | |
| 50 | Perry | | |
| 51 | Philadelphia | | |
| 52 | Pike | 1,968 | 1,995 |
| 53 | Potter | | |
| 54 | Schuylkill | 151 | 1,202 |
| 55 | Snyder | | |
| 56 | Somerset | | |
| 57 | Sullivan | | |
| 58 | Susquehanna | | |
| 59 | Tioga | | |
| 60 | Union | | |
| 61 | Venango | 349 | 350 |
| 62 | Warren | | |
| 63 | Washington | | |
| 64 | Wayne | 296 | |
| 65 | Westmoreland | | |
| 66 | Wyoming | 422 | 394 |
| 67 | York | | |
| Totals | | 38,202 | 33,162 |
| Total Population of Territory Served (Estimated) | | 64,000 | |

**Application of Aqua Pennsylvania Wastewater, Inc.**
**for Approval of its Acquisition of Delaware County Regional Water Control Authority's**
**Wastewater Assets, inter alia, Pursuant to Sections 507, 1102, and 1329 of the Public Utility Code**
**Docket No. A-2019-3015173**

**Response of the Office of Consumer Advocate to**
**Interrogatories of Aqua Pennsylvania Wastewater**
**Set VI**

**Aqua-VI-12** RE: Exhibit RCS-3 (Accumulated Deferred Income Taxes); please provide all source documents, workpapers, and native electronic files used to determine the Accumulated Deferred Income Taxes utilized by OCA. Please provide the annual Accumulated Deferred Income Tax balance and annual tax depreciation for each year 2021 through 2044.

RESPONSE:
The annual ADIT balance and annual tax depreciation for each year 2021 through 2044 was not used for Exhibit RCS-3.

Respondent: Ralph C. Smith

**Application of Aqua Pennsylvania Wastewater, Inc.**
**for Approval of its Acquisition of Delaware County Regional Water Control Authority's**
**Wastewater Assets, inter alia, Pursuant to Sections 507, 1102, and 1329 of the Public Utility Code**
**Docket No. A-2019-3015173**

**Response of the Office of Consumer Advocate to**
**Interrogatories of Aqua Pennsylvania Wastewater**
**Set VI**

**Aqua-VI-13** Please provide a copy of the source for the purchase price, Gross PP&E, Net PP&E, population and number of customers for each comparable acquisition used in OCA Exhibit RCS-4 if that value differs from the value used in the Gannett Fleming appraisal.

RESPONSE:
Not applicable.

Respondent: Ralph C. Smith