filed electronically in docket office on 04/10/15

IN THE TENNESSEE REGULATORY AUTHORITY
AT NASHVILLE, TENNESSEE

IN RE:	)	
	)	
JOINT PETITION OF AQUA	)	
UTILITIES COMPANY AND TRA	)	**DOCKET NO. 15-00044**
STAFF (AS A PARTY) TO	)	
INCREASE RATES AND CHARGES	)	

PRE-FILED DIRECT TESTIMONY

OF

JOE SHIRLEY

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

A. My name is Joe Shirley. I am the Deputy Chief of Utilities for the Tennessee Regulatory Authority. My business address is 502 Deaderick Street, Fourth Floor, Nashville, Tennessee 37243.

Q. Please provide a summary of your educational background and professional experience.

A. I have a B.S. in Accounting from Western Kentucky University, an M.B.A. from Middle Tennessee State University and a J.D. from the Nashville School of Law. I am a licensed attorney and C.P.A. in Tennessee. I have thirty years of professional experience as an attorney, utility consultant, financial analyst and auditor, with nearly fifteen of those years in public utility ratemaking and regulation in the telephone, natural gas, water and wastewater industries. I have litigated various utility rate cases as the lead attorney and I have testified in various utility rate hearings as an expert witness before the Tennessee Regulatory Authority and its predecessor agency, the Tennessee Public Service Commission. I have also advised the leadership of the Authority and Commission on a host of regulatory issues.

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

A. The purpose of my testimony is to (1) calculate and present a forecast of the cost of service and related revenue deficiency for Aqua Utilities Company and (2) recommend utility rates and charges that will generate sufficient revenues to cover those forecasted costs and eliminate the projected revenue deficiency. Attached to my testimony are the TRA Staff Exhibits and Workpapers that document the cost of service study and rate recommendation for Aqua.

Q. Please describe briefly the rate-setting methodologies used to forecast Aqua's cost of service in this case.

A. For ratemaking purposes, utility rates are designed to generate enough revenues to cover the utility's reasonable operating expenses, depreciation on utility plant and equipment, taxes and a fair profit to shareholders or owners. Revenues generated from all sources allowed by the rate-setting authority (e.g., service rates, late payment charges, reconnection fees, etc.) are referred to as the utility's "Revenue Requirement." This ratemaking concept can be expressed through the following basic formula:

Revenue Requirement = Operating Expenses + Depreciation + Taxes + Fair Profit

"Operating Expenses" include items such as salaries and wages, professional and contractor services, administrative and office expenses, maintenance and repairs, and purchased water and power. "Depreciation" recognizes the expense of consuming utility property, plant and equipment over their economically-useful lives. "Taxes" may include payroll taxes, property taxes, franchise and excise taxes, regulatory fees, and income taxes. In Tennessee, a "Fair Profit" for regulated water and wastewater companies may be determined under two methods – the "Rate Base Method" and the "Operating Margin Method." Under the Rate Base Method, a Fair Profit is deemed to be a reasonable rate of return on the owners' investment in the utility system (e.g., net utility plant that is used and useful in providing utility service.) Under the Operating Margin Method, a Fair Profit is deemed to be a reasonable return on operating expenses requiring a return factor (e.g., operation and maintenance expenses, purchased power and water, depreciation and certain taxes.) In this case, I computed the Fair Profit

component of the Company's Revenue Requirement under both methods, but I recommend using the Operating Margin Method to establish Aqua's rates.

Q. Mr. Shirley, why are you recommending the Operating Margin Method?

A. Generally, the Operating Margin Method is used to build reserves for smaller utilities that have little growth and insignificant rate base. In this case, however, Aqua was in the process of completing a significant expansion of its water and wastewater systems at the time of its last rate case in 2006 in anticipation of significant customer growth through new housing starts in its service territory. Aqua's service area is predominately a lake resort community bordering the Tennessee River near the Pickwick Landing State Park. Aqua serves only residential customers, consisting mostly of summer and vacation homes. Due to the recreational and seasonal nature of the area, Aqua's customer base is largely transitory.

Although the expansion was completed, the Company did not see the anticipated increase in customers through new construction due to the 2008-09 Recession and the general economic slowdown lasting since then. As a result, the new utility plant is not fully utilized presently. Indeed, in 2006 total utility plant in service per customer was only $2,102. But due to the system expansion and tepid customer growth, that figure has more than doubled to $4,259 per customer in 2014. In these circumstances, it is my opinion that current customers should not be called upon to pay the much higher costs associated with the under-utilized plant through the traditional Rate Base Method. As an alternative, I propose using the Operating Margin Method to set rates in this case. This method will place the Company on a firmer financial footing and provide it with sufficient cash flows while maintaining the affordability of customer service through

lower rates than otherwise would be required under the Rate Base Method. Aqua could return to the traditional Rate Base Method of setting rates if the Company experiences enough customer growth in the future to warrant it. Of course, a new cost of service study would be required before any such decision is made to return to the Rate Base Method.

Q. What operating margin are you recommending in this case to compute the Fair Profit component of the Company's Revenue Requirement?

A. In Docket No. 08-00202, the Authority approved a settlement between Tennessee Wastewater Systems, Inc. and the Consumer Advocate and Protection Division which allowed an operating margin of 6.5%. I therefore recommend using a 6.5% operating margin for Aqua in this case, for which the Company has agreed.

Q. Briefly describe the procedure used to determine the other components of the Revenue Requirement in this case.

A. In Tennessee, utility rates are based on a utility's projected Revenue Requirement in a forward-looking period of time known as the "Attrition Period." The Attrition Period is generally the first year during which the new rates will be in effect. In this case, I have selected the Twelve Months Ending May 31, 2016 as the Attrition Period.

One of the first steps in projecting the various components of the Revenue Requirement is to identify an historical study period to be used as the foundation of the Attrition Period forecast. This twelve-month historical period is known as the "Test Period." In this case, I used the Twelve Months Ended December 31, 2014 as the Test Period.

The Test Period's financial and operational data are studied and adjusted to reflect a "normal year" by removing non-recurring items that are not expected to repeat in the

future, out-of-period items that are not attributable to the utility's operations during the Test Period, or items that are disallowed for ratemaking purposes (e.g., lobbying expenses, contributions, advertising, fines and penalties, etc.) Once the Test Period has been normalized, the operational and financial data are adjusted further to account for "known and measurable changes" that are likely to occur through the Attrition Period. In order to develop a sound Attrition Period forecast, it is essential to examine the utility's business plans, budgets and prior performance, as well as various drivers and economic indicators of future capital investments, revenues and expenses.

After the Attrition Period forecast has been computed, the forecasted earnings at present rates is compared to the level of forecasted earnings that are required to achieve the Fair Profit component of the projected Revenue Requirement to determine the amount of any earnings surplus or deficiency. If application of the present rates results in an earnings deficiency, service rates should be increased in order to give the utility a fair opportunity to achieve its projected Revenue Requirement in the Attrition Period. The process of determining the particular rate adjustments that are needed to generate the projected Revenue Requirement is known as "rate design" and generally involves application of various rate policies and precedents.

Q. Please explain the Revenue Requirement calculation for Aqua in this case.

A. Most calculations, assumptions and adjustments necessary to determine the Company's Attrition Period forecast were based on review and on-site audit of Aqua's books, records and underlying source documents maintained at the Company's offices in Savannah, Tennessee, as well as discussions with ownership and a tour of the service area and utility plant.

The Company's Test Period earnings and Attrition Period forecast are summarized on TRA Staff Exhibit, Schedule 3. The Attrition Period net operating loss of $57,597 represents the projected loss by Aqua for the Twelve Months Ending May 31, 2016 at presently-approved rates. The Attrition Period net operating loss is computed by deducting forecasted operating expenses and taxes of $231,700 from forecasted operating revenues at present rates of $174,103. The individual components that comprise the Attrition Period forecast are as follows:

Schedule 3, Line 1 - Water Revenue - $85,302: This amount represents the forecasted water sales the Company should realize during the Attrition Period absent any rate relief. To forecast water revenue, I first examined the customer billing and water usage information in the Test Period as reflected on Revenue Workpaper 3.02. In light of planned housing starts determined through my discussion with Mr. Clausel, as well as an improved economic outlook, I assumed that the water customer growth during the Attrition Period would be double that of the Test Period, which yielded a water customer growth rate of 2.38% as reflected on Revenue Workpaper 3.03. The increased level of water customers and associated usage were then priced-out at present rates to arrive at the Attrition Period forecast as reflected on Revenue Workpaper 3.01.

Schedule 3, Line 2 - Wastewater Revenue - $62,335: This amount represents the forecasted wastewater sales the Company should realize during the Attrition Period absent any rate relief. Similar to my forecast of water revenue, I first examined the customer billing and wastewater usage information in the Test Period as reflected on Revenue Workpaper 3.02. Also consistent with my water forecast, I assumed that the wastewater customer growth during the Attrition Period would be double that of the

Test Period, which yielded a wastewater customer growth rate of 1.39% as reflected on Revenue Workpaper 3.03. The increased level of wastewater customers and associated usage were then priced-out at present rates to arrive at the Attrition Period forecast as reflected on Revenue Workpaper 3.01.

Schedule 3, Line 3 – Tap Fees - $15,000: This amount represents the forecasted tap fees the Company should realize during the Attrition Period absent any rate relief. Consistent with water and wastewater customer growth rates assumed for the Attrition Period, as well as my discussion with Mr. Clausel about the new home construction outlook during the next year, I assumed there would be fifteen new service connections during the Attrition Period. Also, consistent with the accounting treatment of tap fees in Docket No. 06-00187, I propose to include the tap fees in operating revenue and, accordingly, priced out the anticipated taps at the present rate as reflected on Revenue Workpaper 3.01.

Schedule 3, Line 4 – Forfeited Discounts - $11,465: This amount represents the forecasted forfeited discounts (late charges) the Company should realize during the Attrition Period absent any rate relief. The tariffed forfeited discount rate is assessed on water and wastewater service bills that are not paid within twenty days. The effective forfeited discount rate on total water and wastewater revenue was computed for the Test Period and that effective rate applied to the forecasted water and wastewater revenue for the Attrition Period to arrive at the Attrition Period forecast as reflected on Revenue Workpaper 3.01.

Schedule 3, Line 7 – Purchased Water Expense - $35,117: This amount represents the forecast of purchased water expense the Company should incur during the Attrition

Period. Rather than having its own water treatment facility, Aqua purchases treated water from the City of Savannah for redelivery to its customers. As reflected on Expense Workpaper 4.02, the Test Period purchased water expense was reconciled to invoices and adjusted for an out-of-period invoice and for a disallowed, non-recurring late payment charge. The adjusted Test Period amount was then increased by the Attrition Period water customer growth rate as reflected on Expense Workpaper 4.01.

Schedule 3, Line 8 – Purchased Power Expense - $17,184: This amount represents the forecast of purchased power expense the Company should incur during the Attrition Period. Due to the hilly terrain of the Company's service area, a gravity-fed wastewater system is not feasible, thus a series of grinder pumps and lift stations are used to transport wastewater from the customers' residences to Aqua's treatment plant. The Company, therefore, uses a great deal of electrical power to operate its wastewater system. As reflected on Expense Workpaper 4.02, the Test Period purchased power expense was reconciled to invoices, and the Test Period amount was then increased by the Attrition Period wastewater customer growth rate as reflected on Expense Workpaper 4.01.

Schedule 3, Line 9 – Contractual Services - $84,958: This amount represents the forecasted contract service fees the Company should incur during the Attrition Period. Aqua has no employees of its own, but contracts with other providers to perform its business, management and operational functions. Management services are performed by Mr. Clausel through Aqua's affiliate Montana Management. As reflected on Expense Workpaper 4.01, the Test Period management fee of $30,000 was included in the Attrition Period forecast at no increase. Non-affiliates provide all other services.

Aqua's billing, accounting, tax and financial reporting functions are provided by Godwin & Associates. Based on Godwin & Associates' Test Period billing records indicating 431.25 billable hours at the blended rate of $58.14 per hour, as well as discussion with Mr. Clausel, I forecasted total Attrition Period billings of $25,000 for these services as reflected on Expense Workpaper 4.03.

Meter reading and on-call maintenance and repair services are provided by Storey Construction, for which Storey Construction was paid $200 per week during the Test Period. Based on discussion with Mr. Clausel, I forecasted $230 per week for these services during the Attrition Period as reflected on Expense Workpaper 4.03.

Craig Holder performs the Company's service quality and testing function at the Test Period rate of $850 per month. Based on discussion with Mr. Clausel, I forecasted $900 per month for testing fees during the Attrition Period.

Further, I determined the reasonableness of projected Contractual Services by adjusting the amount of contract service payments allowed in Aqua's last rate case (Docket 06-00187) for aggregate growth since that case, using Aqua's customer counts and the GDP Price Deflator published by the Bureau of Economic Analysis to compute my growth factor. As reflected on Expense Workpaper 4.05, the Attrition Period forecast for contract service fees by non-affiliates compares favorably to the contract services fees adjusted for aggregate growth since the last rate case.

As reflected on Expense Workpaper 4.01, the aforementioned growth rate assumptions and adjustments coupled with the Test Period amount for Contractual Services result in the Attrition Period forecast.

Schedule 3, Line 10 – Maintenance and Repairs - $4,077: This amount represents the forecasted maintenance and repairs expense the Company should incur during the Attrition Period. Most of the Company's maintenance and repairs are performed by Storey Construction and, accordingly, are included in the Contractual Services forecast. But there was a small amount of maintenance and repairs included in the Test Period for parts and labor provided by others. As reflected on Expense Workpaper 4.01, the Test Period amount was increased by the general Attrition Period growth factor of 2.74%, which was based on the Test Period customer growth and the GDP Price Deflator published by the Bureau of Economic Analysis.

Schedule 3, Line 11 – Administrative and General - $8,974: This amount represents the forecasted administrative and general expense the Company should incur during the Attrition Period. This expense includes sundry items such as phone bills, postage, office supplies, publications and association fees and other miscellaneous expenses. As reflected on Expense Workpaper 4.01, the Test Period amount for administrative and general was increased by the general Attrition Period growth factor of 2.74%, with two items in this category receiving special treatment. First, the Attrition Period forecast for administrative and general expense was increased by $1,100 based on Aqua's plans to implement new billing software. As discussed by Mr. Clausel in his testimony, the Company received a proposal from MuniBilling indicating recurring fees of $275 per quarter for the new software. Second, a Test Period adjustment was made to remove rate case expense of $980, but an Attrition Period adjustment was made to allow for $2,500 of rate case expense to be amortized over three years. The new billing software and rate case expense calculations are shown on Expense Workpaper 4.01.

Schedule 3, Line 12 – Regulatory Commission Expense - $719: This amount represents the forecasted TRA inspection fee the Company should incur during the Attrition Period. As reflected on Tax Workpaper 5.02, the statutory formula for determining the TRA inspection fee was applied to the Attrition Period revenue forecast to calculate the projected fee.

Schedule 3, Line 13 – Depreciation Expense - $69,081: This amount represents the systematic depreciation of the Company's average utility plant in service (UPIS) during the Attrition Period. Aqua's currently-approved depreciation rates from Docket 06-00187 are 2.5% (40 years) on its mains and service lines and 10% (10 years) on all other equipment. Use of these rates yields a composite depreciation rate of 2.85%, which was applied to projected, average UPIS during the Attrition Period to determine the forecast for gross depreciation expense. Due to little growth in plant additions during recent years (as shown on Rate Base Workpaper 2.02), UPIS was increased to reflect only the anticipated new customer taps during the Attrition Period. Finally, Aqua's amortization of its contributions in aid of construction (CIAC) was continued through the Attrition Period and netted against forecasted gross depreciation expense to arrive at the net depreciation expense forecast. The depreciation expense forecast assumptions and calculations are shown on Rate Base Workpapers 2.01 and 2.02.

Schedule 3, Line 14 – Property Tax - $11,251: This amount represents the amount of property tax expense the Company should incur during the Attrition Period. Since the Attrition Period forecast assumes very little growth in property, plant and equipment, which is one of the main drivers of property tax liability, the forecasted property tax was taken directly from Aqua's 2015 property tax notice.

Schedule 3, Line 15 – Franchise Tax - $4,343: This amount represents the amount of franchise tax expense the Company should incur during the Attrition Period. As shown on Tax Workpaper 5.01, the statutory tax rate was applied to the projected Attrition Period balance of net UPIS, as adjusted for original developer costs, to arrive at the forecasted amount of franchise tax.

Schedule 3, Line 16 – State Excise Tax – ($4,004): After all other Attrition Period revenues and expenses were forecasted, the Attrition Period state excise tax was computed as shown on TRA Staff Exhibit, Schedule 4. Since Aqua is operating at a loss at current rates, a negative state excise tax is calculated. Also, Aqua has no federal income tax expense of its own since it is a Subchapter S corporation and all of Aqua's income "flows through" to the owner's personal income tax return. Therefore no federal income tax expense was included in the Company's cost of service calculation.

Q. Please explain how the Company's revenue deficiency was computed.

A. As shown on TRA Staff Exhibit, Schedule 1, the Attrition Period operating expenses were multiplied by the recommended operating margin of 6.5% to determine the required operating income (or "fair profit") of $15,060. This amount, together with the forecasted Attrition Period net operating loss of $57,597, results in an operating income deficiency of $72,657. The income deficiency was then converted to a revenue deficiency through a factor that recognizes the impact of forfeited discounts and taxes on each new $1 of revenue. This conversion resulted in a revenue deficiency of $72,416, which is the amount by which Aqua's service rates should be increased.

Q. How was Aqua's proposed rate design calculated in order to eliminate the projected revenue deficiency?

A. The proposed rate design is presented on TRA Staff Exhibit, Schedule 7. In order to give the Company a fair opportunity to achieve its projected Revenue Requirement during the Attrition Period, the following rate increases are recommended for approval by the Authority:

1) For water service, increase the minimum monthly charge for the first 1,000 gallons from $12.00 to $19.65; increase the volumetric charge for monthly water use in excess of 1,000 gallons from $2.89 per 1,000 gallons applied pro-rata to $3.05 per 1,000 gallons applied pro-rata; increase the reconnect charge due to seasonal disconnects from $60.00 to $120.00; and increase the new water service connection charge (tap fee) from $1,000.00 to $1,425.00; and

2) For wastewater service, increase the minimum monthly charge for the first 1,000 gallons from $12.00 to $19.65; increase the volumetric charge for monthly wastewater use in excess of 1,000 gallons from $2.89 per 1,000 gallons applied pro-rata to $3.05 per 1,000 gallons applied pro-rata; increase the reconnect charge due to seasonal disconnects from $60.00 to $120.00; and increase the new wastewater service connection charge (tap fee) from $1,000.00 to $1,425.00.

If the proposed rates and charges are approved and implemented, the average monthly residential water bill is projected to increase from $18.85 to $26.88, which constitutes a 42.6% increase over the eight-year period since Aqua's last rate adjustment; and the average monthly residential wastewater bill is projected to increase from $17.11 to

$25.04, which constitutes a 46.3% increase over the eight-year period since Aqua's last rate adjustment

The proposed rate design places much of the rate increase in the minimum monthly charge for water and wastewater service. Since Aqua has high fixed costs and a transient customer base, increasing the minimum charge will have the desired effect of providing a more stable revenue stream to the Company. Also as shown on Schedule 7, the proposed increase to the volumetric rate will help assure that Aqua's leading variable expenses, purchased water and power, are covered by charges for volume usage, thereby placing more of these costs on the customers that use more services.

Finally, while the proposed rates represent a material increase to customers, efforts have been made to maintain the affordability of services. As discussed previously, I have recommended, and the Company has agreed, to establish rates in this proceeding based on the Operating Margin Method rather than the Rate Base Method, which as reflected on TRA Staff Exhibit, Schedule 1a, has resulted in a significant reduction in the projected revenue deficiency for the Attrition Period. It should also be noted that it has been eight years since Aqua's rates were increased, and that even with the increases proposed in this docket, Aqua's water rates will still be cheaper than the water rates paid by neighboring residential consumers in Hardin County who receive their service from the City of Savannah. The City currently charges residential customers outside the City limits an $18.00 minimum bill for no usage and $3.56 per 1,000 gallons for any usage. Thus, for 1,000 gallons the City currently charges $21.56 whereas the rate proposed for Aqua in this case is $19.65; and the City currently charges a volumetric

rate of $3.56 per 1,000 gallons whereas the proposed rate for Aqua is $3.05 per 1,000 gallons.

In light of the foregoing factors, as well as the documented increases in Aqua's costs of providing utilities services over the past eight years since the last rate adjustment, I am of the opinion that the proposed rate design is necessary and reasonable and I recommend it to the Authority for approval.

Q. **Does this conclude your testimony?**

A. Yes it does.

BEFORE THE

TENNESSEE REGULATORY AUTHORITY

IN RE:

AQUA UTILITIES COMPANY

TRA STAFF
EXHIBITS and WORKPAPERS

TRA Staff
Exhibit

AQUA UTILITIES COMPANY
Exhibits Directory
For the 12 Months Attrition Period Ending May 31, 2016

TRA Staff
Exhibit
Schedule 1

AQUA UTILITIES COMPANY
Results of Operations - Operating Margin Method
For the 12 Months Attrition Period Ending May 31, 2016

Line			
1	Operating Income At Current Rates		($57,597) A/
2	Total Operating Expenses	$231,700 A/	
3	Fair Operating Margin	6.50% B/	
4	Required Operating Income		$15,060
5	Operating Income Deficiency		$72,657
6	Gross Revenue Conversion Factor		0.996683 C/
7	**Revenue Deficiency (Operating Margin Method)**		**$72,416**

A/ Schedule 3.
B/ Proposed operating margin.
C/ Schedule 5.

TRA Staff
Exhibit
Schedule 1a

AQUA UTILITIES COMPANY
Results of Operations - Rate Base Method
For the 12 Months Attrition Period Ending May 31, 2016

Line		
1	Rate Base	$1,628,958 A/
2	Operating Income At Current Rates	($57,597) B/
3	Earned Rate Of Return	-3.54%
4	Fair Rate Of Return	8.77% C/
5	Required Operating Income	$142,860
6	Operating Income Deficiency	$200,456
7	Gross Revenue Conversion Factor	0.996683 D/
8	**Revenue Deficiency (Rate Base Method)**	**$199,791**

A/ Schedule 2.
B/ Schedule 3.
C/ Authorized Rate of Return per TRA Docket No. 06-00187.
D/ Schedule 5.

TRA Staff
Exhibit
Schedule 2

AQUA UTILITIES COMPANY
Average Rate Base
For the 12 Months Attrition Period Ending May 31, 2016

Line		Test Period	Test Period Adjustments	Adjusted Test Period	Adjustments	Attrition Period
	Additions:					
1	Utility Plant in Service	$2,851,606 A/	$0	$2,851,606	$15,245	$2,866,851 C/
2	CWIP	2,224 B/	0	2,224	0	2,224 B/
3	Inventories	0	0	0	0	0
4	Deferred Rate Case Expense	0	0	0	2,084	2,084 D/
5	Cash Working Capital	0	0	0	20,327	20,327 E/
6	**Total Additions**	**$2,853,830**	**$0**	**$2,853,830**	**$37,655**	**$2,891,485**
	Deductions:					
7	Accumulated Depreciation	$824,387 A/	$0	$824,387	$115,702	$940,089 C/
8	Contributions in Aid of Construction	339,963 A/	0	339,963	(17,526)	322,438 C/
9	**Total Deductions**	**$1,164,350**	**$0**	**$1,164,350**	**$98,177**	**$1,262,527**
10	**Rate Base**	**$1,689,480**	**$0**	**$1,689,480**	**($60,521.33)**	**$1,628,958**

A/ Rate Base Workpaper 2.02.
B/ 2014 General Ledger - General Workpaper 1.01.
C/ Rate Base Workpaper 2.01.
D/ Average of Rate Case Expense of $2,500 amortized over three years.
E/ One-eighth of Attrition Period Total Operating Expenses less Depreciation per Schedule 3.

TRA Staff
Exhibit
Schedule 3

AQUA UTILITIES COMPANY
Income Statement at Current Rates
For the 12 Months Attrition Period Ending May 31, 2016

Line		Test Period	Test Period Adjustments	Adjusted Test Period	Adjustments	Attrition Period
1	Water Revenue	$80,743 A/	$0	$80,743	$4,559	$85,302 C/
2	Wastewater Revenue	57,536 A/	0	57,536	4,800	62,335 C/
3	Tap Fees	13,000 A/	0	13,000	2,000	15,000 C/
4	Forfeited Discounts	10,805 A/	0	10,805	660	11,465 C/
5	Other Revenue	0	0	0	0	0
6	**Total Operating Revenues**	**$162,084**	**$0**	**$162,084**	**$12,019**	**$174,103**
7	Purchased Water Expense	$37,169 B/	($2,867) B/	$34,303	$815	$35,117 B/
8	Purchased Power Expense	16,950 B/	(2) B/	16,948	236	17,184 B/
9	Contractual Services	77,298 B/	0	77,298	7,660	84,958 B/
10	Maintenance and Repairs	3,968 B/	0	3,968	109	4,077 B/
11	Administrative & General Expense	7,833 B/	(980) B/	6,853	2,121	8,974 B/
12	Regulatory Commission Expense	615 A/	0	615	104	719 D/
13	Depreciation Expense	69,120 A/	0	69,120	(39)	69,081 E/
14	Property Tax	10,389 A/	0	10,389	862	11,251 F/
15	State Franchise Tax	4,567 A/	0	4,567	(224)	4,343 G/
16	State Excise Tax	0	0	0	(4,004)	(4,004) H/
17	**Total Operating Expenses**	**$227,910**	**($3,849)**	**$224,061**	**$7,638**	**$231,700**
18	**Net Operating Income/(Loss)**	**($65,826)**	**$3,849**	**($61,977)**	**$4,380**	**($57,597)**

A/ 2014 General Ledger - General Workpaper 1.01.
B/ Expense Workpaper 4.01.
C/ Revenue Workpaper 3.01.
D/ Tax Workpaper 5.02.
E/ Rate Base Workpaper 2.02.
F/ Traced to 2015 Property Tax Notice.
G/ Tax Workpaper 5.01.
H/ Schedule 4.

TRA Staff
Exhibit
Schedule 4

AQUA UTILITIES COMPANY
State Excise Tax Expense at Current Rates
For the 12 Months Attrition Period Ending May 31, 2016

Line		Attrition Amount	
1	Water Revenue	$85,302	A/
2	Wastewater Revenue	62,335	A/
3	Tap Fees	15,000	
4	Forfeited Discounts	11,465	
5	Other Revenue	0	
6	**Total Operating Revenues**	**$174,103**	
7	Purchased Water Expense	$35,117	A/
8	Purchased Power Expense	17,184	A/
9	Contractual Services	84,958	A/
10	Maintenance and Repairs	4,077	A/
11	Administrative & General Expense	8,974	A/
12	Regulatory Commission Expense	719	A/
13	Depreciation Expense	69,081	A/
14	Property Tax	11,251	A/
15	State Franchise Tax	4,343	A/
16	**Total Operating Expenses Before Excise Tax**	**$235,704**	
17	**NOI Before Excise & Income Tax**	**($61,601)**	
18	Less Interest Expense	0	
19	**Pre-Tax Book Income**	**($61,601)**	
20	Excise Tax Rate	6.50%	B/
21	**Excise Tax Expense**	**($4,004)**	

A/ Schedule 3.
B/ Statutory Rate.

TRA Staff
Exhibit
Schedule 5

AQUA UTILITIES COMPANY
Revenue Conversion Factor
For the 12 Months Attrition Period Ending May 31, 2016

Line		Amount	Balance
1	Operating Revenues		1.000000
2	Forfeited Discounts	7.766% A/	0.077659
3	Balance		1.077659
4	TRA Inspection Fee	0.425% B/	0.004580
5	Balance		1.073078
6	State Excise Tax	6.500% B/	0.069750
7	Balance		1.003328
8	**Revenue Conversion Factor (Line 1 / Line 5)**		**0.996683**

A/ Revenue Workpaper 3.01.
B/ Statutory Rates.

NOTE: Aqua Utilities Company is a Subchapter S Corporation. As such, Aqua has no federal tax obligation of its own that it is responsible for. Instead, all income flows through to the owner's personal tax return.

TRA Staff
Exhibit
Schedule 6

AQUA UTILITIES COMPANY
Income Statement at Proposed Rates
For the 12 Months Attrition Period Ending May 31, 2016

Line		Current Rates		Rate Increase		Required Rates
	Operating Margin Method					
1	Water Revenue	$85,302	A/	$37,134	B/	$122,437
2	Wastewater Revenue	62,335	A/	28,907	B/	91,242
3	Tap Fees	15,000	A/	6,375	B/	21,375
4	Forfeited Discounts	11,465	A/	5,624	C/	17,089
5	Other Revenue	0		0		0
6	**Total Operating Revenues**	**$174,103**	A/	**$78,040**		**$252,143**
7	Purchased Water Expense	$35,117	A/	$0		$35,117
8	Purchased Power Expense	17,184	A/	0		17,184
9	Contractual Services	84,958	A/	0		84,958
10	Miscellaneous Expense	4,077	A/	0		4,077
11	Administrative & General Expense	8,974	A/	0		8,974
12	Regulatory Commission Expense	719	A/	332	D/	1,050
13	Depreciation Expense	69,081	A/	0		69,081
14	Property Tax	11,251	A/	0		11,251
15	State Franchise Tax	4,343	A/	0		4,343
16	State Excise Tax	(4,004)	A/	5,051	E/	1,047
17	**Total Operating Expenses**	**$231,700**	A/	**$5,383**		**$237,082**
18	**Net Operating Income**	**($57,597)**	A/	**$72,657**		**$15,060**	F/

A/ Schedule 3.
B/ Schedule 1, Line 7 Revenue Deficiency of: $72,416
C/ Schedule 1, Line 7 multiplied by Schedule 5, Line 2.
D/ Schedule 1, Line 7 multiplied by Schedule 5, Line 4.
E/ Schedule 1, Line 7 multiplied by Schedule 5, Line 6.
F/ Traced to Schedule 1, Line 4.

TRA Staff
Exhibit
Schedule 7

AQUA UTILITIES COMPANY
Rate Design
For the 12 Months Attrition Period Ending May 31, 2016

Line		Attrition Period Determinants	Current Rates	Current Revenues	Proposed Rates	Proposed Revenues	Revenue Increase/ (Decrease)
	Operating Margin Method						
	Water:						
1	Water Bills	4,526 A/	$12.00 C/	$54,312	$19.65 E/	$88,936	$34,624
2	Water Excess Usage	10,723,214 B/	$2.89 C/	30,990	$3.05 E/	32,706	1,716
3	Water Reconnects	0 B/	$60.00 C/	0	$120.00 E/	0	0
4	**Total Water Revenues**			**$85,302** D/		**$121,642**	**$36,340**
	Wastewater:						
5	Wastewater Bills	3,644 A/	$12.00 C/	$43,728	$19.65 E/	$71,605	$27,877
6	Wastewater Excess Usage	6,438,573 B/	$2.89 C/	18,607	$3.05 E/	19,638	1,030
7	Wastewater Reconnects	0 B/	$60.00 C/	0	$120.00 E/	0	0
8	**Total Wastewater Revenues**			**$62,335** D/		**$91,242**	**$28,907**
	Other:						
9	Forfeited Discounts	11,465 B/		$11,465 D/	$5,623.74 F/	$17,089	$5,624
10	Tap Fees	15 B/	$1,000.00 C/	15,000 D/	$1,425.00 E/	21,375	6,375
11	**Total Other Revenues**			**$26,465**		**$38,464**	**$11,999**
12	**Total Operating Revenues**			**$174,103** D/		**$251,348**	**$77,245**
13	**Total Operating Revenues at Required Rates**					**$252,143** F/	
14	**Rate Design Surplus/(Deficiency)**					**($795)**	

Volumetric Revenue and Expense Analysis

Water Volumetric Revenue	$32,706
Wastewater Volumetric Revenue	19,638
Proposed Volumetric Revenue	$52,343
Attrition Period Purchased Water	35,117
Attrition Period Purchased Power	17,184
Forecasted Purchased Water and Power	$52,301
Percent Recovered in Volumetric Rates	100.08%

A/ Revenue Workpaper 3.03.
B/ Revenue Workpapaper 3.01.
C/ Current Tariff Rates.
D/ Schedule 3.
E/ Proposed Tariff Rates.
F/ Schedule 6.

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Workpaper

AQUA UTILITIES COMPANY
Workpaper Directory
For the 12 Months Attrition Period Ending May 31, 2016

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Workpaper
1.01

AQUA UTILITIES COMPANY
Selected General Ledger Account Balances at 12/31/2014
For the 12 Months Attrition Period Ending May 31, 2016

Line	Account	Descripton	Amount		Balance
	RATE BASE ACCOUNTS				
1	**105**	**CWIP**			**2,224.00**
2	110.1	UPIS-Water	1,241,499.87		
3	110.2	UPIS-Wastewater	1,620,463.15		
4	**110**	**UPIS-Total**			**2,861,963.02**
5	108.1	Acc Depr-Water	(359,602.33)		
6	108.2	Acc Depr-Wastewater	(505,648.41)		
7	**108**	**UPIS-Acc Depr-Total**			**(865,250.74)**
8	271.1	CIAC-Water	(234,952.92)		
9	271.2	CIAC-Wastewater	(270,011.22)		
10	**271**	**CIAC-Total**			**(504,964.14)**
11	272.1	Acc Amort-Water	78,874.66		
12	272.2	Acc Amort-Wastewater	92,079.58		
13	**272**	**CIAC-Acc Amort-Total**			**170,954.24**
	REVENUE ACCOUNTS				
14	400.1	Water Revenue	83,321.91		
15	400.1	Water Billing Adjustments	(2,579.13)	80,742.78	
16	400.2	Wastewater Revenue	61,481.23		
17	400.2	Wastewater Billing Adjust	(3,945.30)	57,535.93	
18	**400**	**Total Service Revenues**			**138,278.71**
19	401.1	Water Tap Fees	7,000.00		
20	401.2	Wastewater Tap Fees	6,000.00		
21	**401**	**Total Tap Fees**			**13,000.00**
22	474	Water Forfeited Disc	5,622.62		
23	480	Wastewater Forf Disc	5,622.58		
24	**474-80**	**Total Forfeited Disc**			**11,245.20**
25	**474-80**	**Billing Adj/Credits**			**(439.72)**
	EXPENSE ACCOUNTS				
26	500.1	Depr-Water	31,351.84		
27	500.2	Depr-Wastewater	50,375.08		
28	500.3	CIAC Amort-Water	(5,856.32)		
29	500.4	CIAC Amort-Waste	(6,750.28)		
30	**500**	**Net Depr Expense**			**69,120.32**
31	505.1	Farris Mathews-Water	490.00		
32	505.2	Farris Mathews-Waste	490.00		
33	**505**	**Farris Mathews-Rate Case**			**980.00**
34	**510**	**Property Taxes**			**10,389.00**
35	**516**	**Franchise Tax Accrual**			**4,567.00**
36	**610**	**SUD-Purchased Water**			**37,169.18**
37	630.1	Godwin&Assoc-Water	4,875.00		
38	630.2	Godwin&Assoc-Waste	4,875.00		
39	**630**	**Godwin&Assoc-Billing Svc**			**9,750.00**
40	631.1	Godwin&Assoc-Water	4,875.00		
41	631.2	Godwin&Assoc-Waste	4,875.00		
42	**631**	**Godwin&Assoc-Acctg Svc**			**9,750.00**
43	632.1	Montana Mgmt-Water	15,000.00		
44	632.2	Montana Mgmt-Waste	15,000.00		
45	**632**	**Montana Mgmt-Mgmt Svc**			**30,000.00**
46	635.1	Craig Holder-Water	5,210.88		
47	635.2	Craig Holder-Waste	5,210.88		
48	**635**	**Craig Holder-Testing Svc**			**10,421.76**
49	636.1	Storey Constr-Water	5,200.00		
50	636.2	Storey Constr-Waste	5,200.00		
51	637.1	Storey Constr-Water	4,057.00		
52	637.2	Storey Constr-Waste	2,919.50		
53	**636/637**	**Storey Constr-Maint/Repairs**			**17,376.50**
54	637.1	Various-Water	2,371.06		
55	637.2	Various-Wastewater	1,597.15		
56	**637**	**Various-Maint/Repairs**			**3,968.21**
57	681.1	TRA Insp Fee-Water	307.50		
58	681.2	TRA Insp Fee-Waste	307.50		
59	**681**	**TRA Inspection Fees**			**615.00**
60	681.1	Other Fees-Water	753.95		
61	681.2	Other Fees-Waste	753.95		
62	**681**	**Other Fees**			**1,507.90**
63	685.1	Office Supplies-Water	289.00		
64	685.2	Office Supplies-Waste	123.66		
65	**685**	**Office Supplies**			**412.66**
66	690.1	Phones-Water	1,653.19		
67	690.2	Phones-Wastewater	1,653.20		
68	**690**	**Phones**			**3,306.39**
69	695.1	Postage-Water	881.15		
70	695.2	Postage-Wastewater	745.16		
71	**695**	**Postage**			**1,626.31**
72	**715**	**Purchased Power-Waste**			**16,950.25**

Source: 2014 General Ledger.

TRA Staff
Workpaper
2.01

AQUA UTILITIES COMPANY
UPIS and CIAC Forecast
For the 12 Months Attrition Period Ending May 31, 2016

Line		12/31/2014 Balance	Additions	Retirements	5/31/2015 Balance	Additions	Retirements	5/31/2016 Balance	Average Attrition Yr
1	CIAC	$504,964 A/	$0	$0	$504,964	$0	$0	$504,964	$504,964 C/
2	UPIS	2,861,963 A/	0	0	2,861,963	9,775 B/	0	2,871,738	2,866,851 C/

		12/31/2014 Balance	Amortization/ Depreciation	Deductions	5/31/2015 Balance	Amortization/ Depreciation	Deductions	5/31/2016 Balance	Average Attrition Yr
3	Accumulated CIAC Amort	$170,954 A/	$5,260 D/	$0	$176,214	$12,624 D/	$0	$188,838	$182,526 C/
4	Accumulated UPIS Depr	865,251 A/	33,986 E/	0	899,237	81,705 E/	0	980,942	940,089 C/

		12/31/2014 Balance	5/31/2015 Balance	5/31/2016 Balance	Average Attrition Yr
5	Net CIAC	$334,010 F/	$328,750 F/	$316,126 F/	$322,438 C/
6	Net UPIS	1,996,712 G/	1,962,726 G/	1,890,796 G/	1,926,761 C/

A/ 2014 General Ledger - General Workpaper 1.01.
B/ Forecast for Attrition Period water and wastewater taps (8 water at $675 plus 7 wastewater at $625).
C/ Average of 5/31/2015 balance and 5/31/2016 balance.
D/ Annual CIAC amortization rate of 2.5% per Rate Base Workpaper 2.02.
E/ Annual composite depreciation rate of 2.85% per Rate Base Workpaper 2.02.
F/ Line 1 minus Line 3
G/ Line 2 minus Line 4

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Workpaper
2.02

AQUA UTILITIES COMPANY
Depreciation Expense Forecast
For the 12 Months Attrition Period Ending May 31, 2016

CIAC Amortization Rate of 2.5%:

Line	Description	Attrition Period	Actual 2014	Actual 2013	Actual 2012
1	CIAC Ending Balance	$504,964 A/	$504,964 B/	$504,264 C/	$504,264 C/
2	Accumulated CIAC Amortization	188,838 A/	170,954 B/	158,347 C/	145,741 C/
3	Net CIAC Ending Balance	$316,126	$334,010	$345,917	$358,523
4	CIAC Average Balance		$504,614 D/	$504,264 D/	$504,264 D/
5	Annual CIAC Amortization Rate		2.50% E/	2.50% E/	2.50% E/
6	Annual CIAC Amortization		$12,607 B/	$12,606 C/	$12,608 C/

Depreciation Composite Rate of 2.85%:

Line	Description	Attrition Period	Actual 2014	Actual 2013	Actual 2012
7	UPIS Ending Balance	$2,871,738 A/	$2,861,963 B/	$2,841,249 C/	$2,831,716 C/
8	UPIS Accumulated Depr	980,942 A/	865,251 B/	783,523 C/	702,453 C/
9	Net UPIS Ending Balance	$1,890,796	$1,996,712	$2,057,726	$2,129,263
10	UPIS Average Balance		$2,851,606 D/	$2,836,483 D/	$2,823,591 D/
11	Composite Rate		2.87% F/	2.86% F/	2.83% F/
12	Annual Depreciation Expense		$81,727 B/	$81,107 C/	$79,871 C/

Attrition Year Depreciation Expense Forecast:

Line	Description	Amount
13	UPIS Balance at 5/31/2015	$2,861,963 A/
14	UPIS Balance at 5/31/2016	2,871,738 A/
15	Average Attrition Period UPIS	$2,866,851
16	Annual Composite Depreciation Rate	2.85% F/
17	**Attrition Period Depreciation Expense**	**$81,705**
18	CIAC Balance at 5/31/2015	$504,964 A/
19	CIAC Balance at 5/31/2016	504,964 A/
20	Average Attrition Period CIAC	$504,964
21	Annual CIAC Amortization Rate	2.50% E/
22	**Attrition Period CIAC Amortization Contra-expense**	**$12,624**
23	**Net Attrition Period Depreciation Expense**	**$69,081** G/

A/ Rate Base Workpaper 2.01.
B/ 2014 General Ledger - General Workpaper 1.01.
C/ TRA Annual Reports.
D/ Average of beginning and ending balances for the period.
E/ Computed annual CIAC amortization rate for 2012-2014; assume same rate for the attrition period.
F/ Computed annual composite depreciation rate for 2012-2014; assume 2.85% annual composite deprecation rate for attrition period.
G/ Line 17 minus Line 22.

TRA Staff
Workpaper
3.01

AQUA UTILITIES COMPANY
Revenue Forecast at Present Rates
For the 12 Months Attrition Period Ending May 31, 2016

Line					Attrition Period
	Water Revenue:				
1	Attrition Year Water Bills	4,526	A/		
2	Minimum Water Charge per Bill	$12.00	B/		
3	Minimum Water Charges			$54,312	
4	Test Year Excess Water Usage in Gallons	10,474,443	C/		
5	Attrition Year Water Customer Growth Rate	2.38%	A/		
6	Attrition Year Excess Water Usage in Gallons	10,723,214			
7	Pro-Rata Usage Amount in Gallons	1,000	B/		
8	Attrition Year Billable Water Volumes	10,723.21			
9	Volumetric Charge per 1,000 Gallons	$2.89	B/		
10	Volumetric Water Charges			30,990	
11	Attrition Year Water Revenue at Present Rates				$85,302
	Wastewater Revenue:				
12	Attrition Year Wastewater Bills	3,644	A/		
13	Minimum Wastewater Charge per Bill	$12.00	B		
14	Minimum Wastewater Charges			$43,728	
15	Test Year Excess Wastewater Usage in Gallons	6,350,228	C/		
16	Attrition Year Wastewater Customer Growth Rate	1.39%	A/		
17	Attrition Year Excess Wastewater Usage in Gallons	6,438,573			
18	Pro-Rata Usage Amount in Gallons	1,000	B/		
19	Attrition Year Billable Wastewater Volumes	6,438.57			
20	Volumetric Charge per 1,000 Gallons	$2.89	B/		
21	Volumetric Wastewater Charges			18,607	
22	Attrition Year Wastewater Revenue at Present Rates				62,335
23	Total Water and Wastewater Service Revenue				$147,638
	Reconnect Fees:				
24	Test Year Water Reconnects	0			
25	Test Year Wastewater Reconnects	0			
26	Total Test Year Reconnects	0			
27	Attrition Year Reconnect Growth Rate	0%	D/		
28	Total Attrition Year Reconnects			0	
29	Reconnect Charge			$60.00	B/
30	Total Reconnect Fees at Present Rates				0
	Tap Fees:				
31	Test Year Water Taps	8	E/		
32	Test Year Wastewater Taps	7	E/		
33	Total Test Year Taps	15			
34	Attrition Year Growth Rate	0.00%	F/		
35	Total Attrition Year Taps			15	
36	Service Connection/Tap Fee			$1,000.00	B/
37	Total Tap Fees at Present Rates				15,000
	Forfeited Discounts:				
38	Test Period Water and Wastewater Forfeited Discounts	$11,245	D/		
39	Test Period Water and Wastewater Service Revenue	144,803	D/		
40	Test Period Forfeited Discount Rate			7.77%	
41	Attrition Period Water and Wastwater Service Revenue			$147,638	G/
42	Total Forfeited Discounts at Present Rates				11,465
43	**Total Attrition Period Regulated Revenue at Present Rates**				**$174,103**

A/ Revenue Workpaper 3.03.
B/ Aqua Utilities Company Tariff.
C/ Revenue Workpaper 3.02.
D/ Reconnect fees are designed to stablize revenue in the event of seasonal disconnects.
E/ General Ledger - General Workpaper 1.01.
F/ Assumes 15 new taps based on anticipated customer growth in attrition period.
G/ Line 23.

TRA Staff
Workpaper
3.02

AQUA UTILITIES COMPANY
Proof of Billing Determinants
For the 12 Months Attrition Period Ending May 31, 2016

Proof of Water Revenue for 2014:

Line	Month	Customers A/	Total Usage A/	Minimum Usage A/	Volumetric Usage A/	Minimum Charge B/	Volumetric Charge C/	Total Water Revenue D/
1	Jan 2014	367	729,635	135,085	594,550	$4,404	$1,718	$6,122
2	Feb 2014	363	327,080	114,050	213,030	4,356	616	4,972
3	Mar 2014	364	286,147	103,227	182,920	4,368	529	4,897
4	Apr 2014	364	792,949	169,031	623,918	4,368	1,803	6,171
5	May 2014	365	1,669,534	194,963	1,474,571	4,380	4,262	8,642
6	Jun 2014	370	1,572,500	249,930	1,322,570	4,440	3,822	8,262
7	Jul 2014	371	1,439,910	256,880	1,183,030	4,452	3,419	7,871
8	Aug 2014	371	2,102,094	245,850	1,856,244	4,452	5,365	9,817
9	Sep 2014	371	1,438,914	93,714	1,345,200	4,452	3,888	8,340
10	Oct 2014	371	999,535	179,520	820,015	4,452	2,370	6,822
11	Nov 2014	373	740,140	54,760	685,380	4,476	1,981	6,457
12	Dec 2014	371	220,385	47,370	173,015	4,452	500	4,952
13	Totals	4,421	12,318,823	1,844,380	10,474,443	$53,052	$30,271	$83,323
14	General Ledger Water Revenues							$83,322 E/
15	Dollar Difference							$1
16	Percent Difference							0.00%

Proof of Wastewater Revenue for 2014:

Line	Month	Customers A/	Total Usage A/	Minimum Usage A/	Volumetric Usage A/	Minimum Charge B/	Volumetric Charge C/	Total Wastewater Revenue D/
17	Jan 2014	299	610,565	133,015	477,550	$3,588	$1,380	$4,968
18	Feb 2014	296	306,380	109,770	196,610	3,552	568	4,120
19	Mar 2014	297	270,907	100,727	170,180	3,564	492	4,056
20	Apr 2014	298	738,039	162,209	575,830	3,576	1,664	5,240
21	May 2014	299	696,284	227,754	468,530	3,588	1,354	4,942
22	Jun 2014	302	991,400	231,180	760,220	3,624	2,197	5,821
23	Jul 2014	301	974,140	309,767	664,373	3,612	1,920	5,532
24	Aug 2014	300	1,508,494	326,668	1,181,826	3,600	3,415	7,015
25	Sep 2014	300	838,246	236,461	601,785	3,600	1,739	5,339
26	Oct 2014	300	637,045	191,731	445,314	3,600	1,287	4,887
27	Nov 2014	301	712,020	52,214	659,806	3,612	1,907	5,519
28	Dec 2014	301	193,255	45,051	148,204	3,612	428	4,040
29	Totals	3,594	8,476,775	2,126,547	6,350,228	$43,128	$18,352	$61,480
30	General Ledger Wastewater Revenues							$61,481 E/
31	Dollar Difference							($1)
32	Percent Difference							0.00%

A/ Company Response to Data Request - March 25, 2015
B/ Minimum Charge equals Customers multiplied by $12.00.
C/ Volumetric Charge equals Volumetric Usage divided by 1,000 gallons multiplied by $2.89.
D/ Revenue equals Minimum Charge plus Volumetric Charge
E/ 2014 General Ledger - General Workpaper 1.01.

TRA Staff Workpaper 3.03

AQUA UTILITIES COMPANY
Customer Growth Rate
For the 12 Months Attrition Period Ending May 31, 2016

Line	Month	Water Customers		Water Change	Wastewater Customers		Wastewater Change	Total Customers
1	Dec 2013	367	A/	-	299	A/	-	666
2	Jan 2014	367	A/	0	299	A/	0	666
3	Feb 2014	363	A/	-4	296	A/	-3	659
4	Mar 2014	364	A/	1	297	A/	1	661
5	Apr 2014	364	A/	0	298	A/	1	662
6	May 2014	365	A/	1	299	A/	1	664
7	Jun 2014	370	A/	5	302	A/	3	672
8	Jul 2014	371	A/	1	301	A/	-1	672
9	Aug 2014	371	A/	0	300	A/	-1	671
10	Sep 2014	371	A/	0	300	A/	0	671
11	Oct 2014	371	A/	0	300	A/	0	671
12	Nov 2014	373	A/	2	301	A/	1	674
13	Dec 2014	371	A/	-2	301	A/	0	672
14	Jan 2015	371	B/	0	301	B/	0	672
15	Feb 2015	363	B/	-8	295	B/	-6	658
16	Mar 2015	365	B/	2	297	B/	2	662
17	Apr 2015	365	B/	0	299	B/	2	664
18	May 2015	367	B/	2	301	B/	2	668
19	Jun 2015	377	B/	10	307	B/	6	684
20	Jul 2015	379	B/	2	305	B/	-2	684
21	Aug 2015	379	B/	0	303	B/	-2	682
22	Sep 2015	379	B/	0	303	B/	0	682
23	Oct 2015	379	B/	0	303	B/	0	682
24	Nov 2015	383	B/	4	305	B/	2	688
25	Dec 2015	379	B/	-4	305	B/	0	684
26	Jan 2016	379	B/	0	305	B/	0	684
27	Feb 2016	371	B/	-8	299	B/	-6	670
28	Mar 2016	373	B/	2	301	B/	2	674
29	Apr 2016	373	B/	0	303	B/	2	676
30	May 2016	375	B/	2	305	B/	2	680
31	Test Year Bills	4,421			3,594			8,015
32	Attrition Year Bills	4,526			3,644			8,170
33	Customer Growth	105			50			155
34	Growth Rate	2.38%			1.39%			1.93%

A/ Company Response to Data Request - March 20, 2015.
B/ Forecast based on previous year's monthly customer change multiplied by 2 (or twice the growth of the test year).

TRA Staff
Workpaper
3.04

AQUA UTILITIES COMPANY
Customer Bill Audit
For the 12 Months Attrition Period Ending May 31, 2016

	PER CUSTOMER BILLING HISTORY				PER AQUA UTILITIES TARIFF				CALCULATED BILL PER TARIFF					
Line	Account Number	Billing Period	Gallons Usage	Excess Volumes	Water Volume Rate/1,000	Wastewater Volume Rate/1,000	Minimum Water Rate	Minimum Sewer Rate	Water Volume Charge	Wastwater Volume Charge	Water Calc	Wastewater Calc	Total Bill Calc	
1	6015	Sep 2013	1,600	600	$2.89	$2.89	$12.00	$12.00	$1.73	$1.73	$13.73	$13.73	$27.47	A/
2	5328	Oct 2013	1,130	130	2.89	2.89	12.00	12.00	0.38	0.38	12.38	12.38	24.75	A/
3	2290	Apr 2014	8,040	7,040	2.89	2.89	12.00	12.00	20.35	20.35	32.35	32.35	64.69	A/
4	5001	Jun 2014	15,460	14,460	2.89	2.89	12.00	B/	41.79	B/	53.79	B/	53.79	A/
5	4030	Aug 2014	2,940	1,940	2.89	2.89	12.00	12.00	5.61	5.61	17.61	17.61	35.21	A/
6	5035	Nov 2014	12,860	11,860	2.89	2.89	12.00	B/	34.28	B/	46.28	B/	46.28	A/

A/ Traced Calculated Bill Amounts to Customer Bill History.
B/ Water-only customer.

TRA Staff
Workpaper
4.01

AQUA UTILITIES COMPANY
Operation and Maintenance Expense Analysis and Forecast
For the 12 Months Attrition Period Ending May 31, 2016

Line		Test Period		Adjustments		Adjusted Test Period	Growth Factor		Attrition Period
1	**Purchased Water**	$37,169	A/	($2,867)	B/	$34,303	$815	E/	$35,117
2	**Purchased Power**	$16,950	A/	($2)	C/	$16,948	$236	F/	$17,184
3	Billing - Godwin & Assoc.	$9,750	A/	$0		$9,750	$2,750	G/	$12,500
4	Accounting-Godwin & Assoc.	9,750	A/	0		9,750	2,750	G/	12,500
5	Water Testing-Craig Holder	10,422	A/	0		10,422	600	G/	11,022
6	Maintence/Repairs-Storey Construction	17,377	A/	0		17,377	1,560	G/	18,937
7	Management-Montana Management	30,000	A/	0		30,000	0	G/	30,000
8	Other	0		0		0	0		0
9	**Contractual Services**	$77,298		$0		$77,298	$7,660		$84,958
10	Mowing-J.W. Lawncare	$850	A/	$0		$850	$23	H/	$873
11	Repairs	3,118	A/	0		3,118	85	H/	3,204
12	Other	0		0		0	0		0
13	**Maintenance and Repairs**	$3,968		$0		$3,968	$109		$4,077
14	Office Supplies	$413	A/	$0		$413	$11	H/	$424
15	Postage	1,626	A/	0		1,626	45	H/	1,671
16	Phones	3,306	A/	0		3,306	91	H/	3,397
17	Memberships/Fees	1,508	A/	0		1,508	41	H/	1,549
18	Rate Case-Farris Mathews/etc.	980	A/	(980)	D/	0	833	D/	833
19	Other - Utility Billing Software	0		0		0	1,100	I/	1,100
20	**Administrative & General:**	$7,833		($980)		$6,853	$2,121		$8,974
21	**Total Operations and Maintenance Expense**	$143,219		($3,849)		$139,370	$10,940		**$150,310**

A/ 2014 General Ledger - General Workpaper 1.01.
B/ Adjusted to remove (1) out of period adjustment from Expense Workpaper 4.02 and (2) late charges from Expense Workpaper 4.02.
C/ Adjusted to remove out of period adjustment from Expense Workpaper 4.02.
D/ Adjustment to assume $2,500 of Rate Case Expense amortized over three years.
E/ Adjusted Test Period Purchased Water multiplied by Attrition Period Water Customer Growth Rate per Revenue Workpaper 3.03.
F/ Adjusted Test Period Purchased Power multiplied by Attrition Period Wastewater Customer Growth Rate per Revenue Workpaper 3.03.
G/ Expense Workpaper 4.03.
H/ Adjusted Test Period Expense multiplied by Attrition Period Growth Factor computed as follows:

Bureau of Economic Analysis Table 1.1.9 GDP Price Deflator for 2014-4th Quarter	108.639	
Bureau of Economic Analysis Table 1.1.9 GDP Price Deflator for 2013-4th Quarter	107.301	
Annual Percentage Increase in GDP Price Deflator	1.25%	
Attrition Period Percentage Increase in GDP Price Deflator for 1 Year and 5 Months	0.52%	1.77%
Total Attrition Period Customer Growth per Revenue Workpaper 3.03	1.93%	
One-half of Total Attrition Period Customer Growth per Revenue Workpaper 3.03	0.5	0.97%
		2.74%

I/ New utility billing systems software recurring quarterly charges of $275 per MuniBilling 3/27/2015 proposal.

TRA Staff
Workpaper
4.02

AQUA UTILITIES COMPANY
Analysis of Purchased Power and Purchased Water
For the 12 Months Attrition Period Ending May 31, 2016

Line	2014 Month	Purchased Power		Purchased Water		Gallons Purchased	
1	Jan	$1,311	A/	$3,498	B/	1,363,800	B/
2	Feb	1,242	A/	3,014	B/	1,172,200	B/
3	Mar	1,262	A/	1,902	B/	732,700	B/
4	Apr	1,396	A/	3,019	C/	1,065,900	B/
5	May	1,572	A/	2,421	B/	938,000	B/
6	Jun	1,338	A/	2,615	B/	1,014,700	B/
7	Jul	1,836	A/	3,457	B/	1,347,600	B/
8	Aug	1,733	A/	3,824	B/	1,469,100	B/
9	Sep	1,497	A/	3,956	B/	1,520,600	B/
10	Oct	1,268	A/	2,924	B/	1,119,200	B/
11	Nov	1,227	A/	2,071	B/	787,300	B/
12	Dec	1,266	A/	1,875	B/	710,900	B/
13	Total per bills	$16,948		$34,577		13,242,000	
14	Out of period adjustment	2		2,592	D/		
15	Totals per general ledger	$16,950	D/	$37,169	D/		

LOST AND UNACCOUNTED FOR WATER

Line		Amount
16	Total Gallons of Water Purchased per Line 13	13,242,000
17	Total Gallons of Water Sold per Revenue Workpaper 3.02	12,318,823
18	Lost and Unaccounted for Water in Gallons	923,177
19	Lost and Unaccounted for Water Loss Percentage	6.97%

A/ Reconciled to Tennessee Valley Electric Cooperative power bills.
B/ Reconciled to Savannah Utility Department water bills.
C/ The City water bill for April 2014 included payment of the following late charge -------> $274.47
D/ Traced to 2014 General Ledger.

TRA Staff
Workpaper
4.03

AQUA UTILITIES COMPANY
Analysis of Contractor Payments
For the 12 Months Attrition Period Ending May 31, 2016

Line	2014 Month	Montana Management		Godwin & Associates		Craig Holder		Storey Construction	
1	Jan	$2,500		$1,500		$850		$800	
2	Feb	2,500		1,500		850		800	
3	Mar	2,500		1,500		850		1,150	
4	Apr	2,500		3,000		850		1,215	
5	May	2,500		1,500		850		800	
6	Jun	2,500		1,500		850		2,100	
7	Jul	2,500		1,500		850		2,848	
8	Aug	2,500		1,500		850		800	
9	Sep	2,500		1,500		1,072		3,132	
10	Oct	2,500		1,500		850		1,932	
11	Nov	2,500		1,500		850		600	
12	Dec	2,500		1,500		850		1,200	
13	Total Test Period	$30,000	A/	$19,500	B/	$10,422	C/	$17,377	D/
14	Billing Increase	0	E/	5,500	F/	600	F/	1,560	F/
15	Total Attrition Period	$30,000		$25,000		$11,022		$18,937	

A/ Owner/affiliate management fee of $2,500 per month.
B/ Reconciled to Godwin & Associates 2014 invoices for billing, accounting and tax preparation services.
C/ Reconciled to Craig Holder 2014 invoices for testing and water analysis services.
D/ Expense Workpaper 4.04.
E/ Test Period management fees from affiliate Montana Management were included in the Attrition Period.
F/ Godwin & Associates furnished billing records for the 2014 Test Period that showed total hours for billing, accounting and tax services as 431.25 hours producing a standard total billing of $25,075. The Attrition Period forecast for Godwin & Associates is based on 430 billable hours at the Test Period blended rate of $58.14 per hour, which results in total Attrition Period billings of $25,000. Craig Holder testing fees were increased by $50 per month for the Attrition Period; and Storey Construction maintenance fees were increased by $30 per week. With these adjustments, total contract fees for maintenance, testing, billing and professional services for the Attrition Period track GDP-PI and customer growth since the prior rate case -- See Expense Workpaper 4.05.

TRA Staff
Workpaper
4.04

AQUA UTILITIES COMPANY
Analysis of Storey Construction Payments
For the 12 Months Attrition Period Ending May 31, 2016

Line	2014 Month	Storey Capitalized Water	Storey Capitalized Wastewater	Storey Maint Fee Water	Storey Maint Fee Wastewater	Storey Repairs Water	Storey Repairs Wastewater	Total	Capitalized	Expensed
1	Jan	$0	$0	$400	$400	$0	$0	$800	$0	$800
2	Feb	475	900	400	400	0	0	2,175	1,375	800
3	Mar	150	3,952	500	500	0	150	5,252	4,102	1,150
4	Apr	925	900	400	400	0	415	3,040	1,825	1,215
5	May	500	475	400	400	0	0	1,775	975	800
6	Jun	950	4,500	500	500	311	789	7,550	5,450	2,100
7	Jul	0	0	400	400	1,440	608	2,848	0	2,848
8	Aug	300	2,200	400	400	0	0	3,300	2,500	800
9	Sep	150	0	500	500	1,174	958	3,282	150	3,132
10	Oct	1,387	450	400	400	1,132	0	3,769	1,837	1,932
11	Nov	0	0	300	300	0	0	600	0	600
12	Dec	300	2,200	600	600	0	0	3,700	2,500	1,200
13	Storey	$5,137 A/	$15,577 A/	$5,200 A/	$5,200 A/	$4,057 A/	$2,920 A/	$38,090	$20,714	$17,377
14	Others	0	0	0	0	2,371	1,597	3,968	0	3,968
15	Total	$5,137 B/	$15,577 B/	$5,200 B/	$5,200 B/	$6,428 B/	$4,517 B/	$42,059	$20,714	$21,345

A/ Reconciled to Storey Construction invoices for 2014. Storey Construction provides construction, repair, maintenance, emergency and meter reading services.
B/ Traced to 2014 General Ledger.

TRA Staff Workpaper 4.05

AQUA UTILITIES COMPANY
Analysis of Contract Service Payments from Docket 06-00187
For the 12 Months Attrition Period Ending May 31, 2016

Line					Amount
1	Maintenance-Docket 06-00187 WP E-3.04			$13,000 A/	
2	Testing-Docket 06-00187 WP E-3.03			7,200 B/	
3	Billing-Docket 06-00187 WP E-3.01			9,000 C/	
4	Professional-Docket 06-00187 WP E-3.02			9,000 D/	
5	**Contract Service Fees-Docket 06-00187**				$38,200
6	BEA GDP Price Deflator 2014-IV	108.639 E/			
7	BEA GDP Price Deflator 2008-I	98.516 E/			
8	Index Growth	10.123			
9	GDP-PD Growth Rate		10.28%		
10	Combined Customers 12/31/2014	672 F/			
11	Combined Customers 1/1/2008	544 G/			
12	Customer Change	128			
13	Customer Growth Rate	23.53%			
14	One-Half Customer Growth Rate		11.76%		
15	Attrition Period Growth Rate-Expense Workpaper 4.01		2.74%		
16	Aggregate Growth Rate Since Prior Rate Case			24.78%	
17	Amount of Aggregate Growth Since Prior Rate Case				9,465
18	**Contract Service Fees Adjusted for Aggregate Growth Since Prior Rate Case**				**$47,665**
19	Test Period Maintenance-Expense Workpaper 4.04			$10,400 H/	
20	Test Period Testing-Expense Workpaper 4.03			10,200 I/	
21	Test Peroid Billing-Expense Workpaper 4.03			9,750 I/	
22	Test Period Professional-Expense Workpaper 4.03			9,750 I/	
23	**Contract Service Fees for the Test Period**				**$40,100**
24	Increase to Maintenance for Attrition Period				1,560 I/
25	Increase to Testing for Attrition Period				600 I/
26	Increase to Billing for Attrition Period				2,750 I/
27	Increase to Professional for Attrition Period				2,750 I/
28	**Contract Service Fees for the Attrition Period**				**$47,760**
29	**Aggregrate Growth Over/(Under) Forecasted Growth**				**($95)**

A/ TRA Docket 06-00187 Workpaper E-3.04.
B/ TRA Docket 06-00187 Workpaper E-3.03.
C/ TRA Docket 06-00187 Workpaper E-3.01.
D/ TRA Docket 06-00187 Workpaper E-3.02.
E/ Bureau of Economic Analysis Table 1.1.9 Implicit Price Deflators for Gross Domestic Product.
F/ Revenue Workpaper 3.03.
G/ 2007 Annual Report.
H/ Expense Workpaper 4.04
I/ Expense Workpaper 4.03

Note: Rate Adjustment in Docket 06-00187 was approved effective March 1, 2007, making the Attrition Period the 12 months ended February 28, 2008 in that docket.

TRA Staff
Workpaper
5.01

AQUA UTILITIES COMPANY
Franchise Tax Forecast
For the 12 Months Attrition Period Ending May 31, 2016

Line		Attrition Period		FYE 2014		FYE 2013	
1	Net Utility Plant in Service	$1,890,796	A/	$1,996,712	A/	$2,057,726	A/
2	Adjustment for Original Developer Costs	153,749	B/	169,794	C/	181,120	D/
3	Taxable Real & Tangible Personal Property	$1,737,047		$1,826,918	E/	$1,876,606	E/
4	Statutory Rate	0.250%		0.250%		0.250%	
5	Franchise Tax	$4,343		$4,567	E/	$4,692	E/

A/ Rate Base Workpaper 2.02.

B/ Per Company reponse original developer costs were not deducted for tax purposes. The adjustment for the attrition year was computed as follows

FYE 2013 Original Developer Adjustment per Line 2	$181,120
FYE 2014 Original Developer Adjustment per Line 2	169,794
Annual Depreciation of Original Developer Costs	$11,326
Months per year	12
Monthly Depreciation of Original Developer Costs	$944
Months from 12/31/2014 through 5/31/2016	17
Attrition Period Decrease to Original Developer Costs	$16,045

C/ Company Response Received 5/27/2015.

D/ Line 1 minus Line 3.

E/ Traced to Franchise & Excise Tax Returns.

TRA Staff
Workpaper
5.02

AQUA UTILITIES COMPANY
TRA Inspection Fee Forecast
For the 12 Months Attrition Period Ending May 31, 2016

Line		Attrition Period	
1	Water Service Revenue	$85,302	A/
2	Wastewater Service Revenue	62,335	A/
3	Miscellaneous Revenue	26,465	A/
4	Total Gross Revenue	$174,103	
5	Less Exemption	5,000	B/
6	Net Revenue	$169,103	
7	Statutory Rate	0.425%	B/
8	TRA Inspection Fee	$719	

A/ Revenue Workpaper 3.01.
B/ TRA Inspection Fee Statute TCA 65-4-303.

VERIFICATION

STATE OF TENNESSEE)

COUNTY OF DAVIDSON)

I, Joe Shirley, being duly sworn, state that I am authorized to make this verification on behalf of TRA Staff (As a Party); that I have read the foregoing Pre-filed Direct Testimony, Exhibits and Workpapers of Joe Shirley and know the content thereof; and that the same are true and correct to the best of my knowledge, information and belief.

Joe Shirley

Sworn to and subscribed before me the 16th day of April, 2015.

Notary Public

My Commission Expires: March 8, 2016