SUEZ Water Delaware, Inc.
PSC Docket No. _____
Witness: Charles E. Loy

BEFORE THE

DELAWARE PUBLIC SERVICE COMMISSION

DIRECT TESTIMONY OF

CHARLES E. LOY
SUEZ WATER DELAWARE, INC.

JANUARY 2016

SUEZ WATER DELAWARE, INC.
DIRECT TESTIMONY OF CHARLES E. LOY

Q. Please state your name and business address.

A. My name is Charles Loy. I am a Principal with GDS Associates, Inc. ("GDS"). GDS Associates, Inc. ("GDS") is a utility consulting and engineering firm with its principal offices in Marietta, GA. My business address is 919 Congress, Suite 800 Austin Texas 78701.

Q. Please summarize your educational background.

A. I received the degree of Bachelor of Business Administration in Accounting from the University of Texas at Austin. I am a Certified Public Accountant in Texas.

Q. Please summarize your professional experience.

A. Before joining GDS in June of 2001, I was General Manager of Rates and Regulatory Affairs of AquaSource Inc., a wholly-owned water and wastewater subsidiary of DQE, a publicly traded electric utility located in Pittsburgh, Pennsylvania. My responsibilities at AquaSource included the organization, preparation and management of various rate filings and testimony in connection with rate requests and other regulatory matters in the twelve states in which AquaSource owned and operated utility properties. Before joining AquaSource, I was a Manager of Regulatory Affairs for Citizens Utilities Company - Public Services Sector. I was responsible for various regulatory matters, including rate cases, for water/wastewater, gas, and electric services in eight states. Before joining Citizens, I was a Rate Manager with Southern

Union Gas where I prepared rate filings, cost-of-service studies, and testimony for the various jurisdictions in Texas and Oklahoma. My utility regulation experience began with Diversified Utility Consultants as a Senior Analyst. I assisted in the review and analysis of various gas, electric, and water company rate filings.

Q. Have you previously presented testimony before regulatory commissions and/or other agencies?

A. Yes, A list of regulatory proceedings in which I have been involved and presented expert testimony is attached to my direct testimony as Appendix A.

Q. **What is the purpose of your testimony?**

A. The purpose of my testimony is to sponsor the Minimum Filing Requirements (MFRs) which presents the calculation of SUEZ Water Delaware's ("Company, Company's or SWDE") proposed test tear and Test Period revenue requirements which include: rate base, revenues, O&M expense, depreciation expense, income taxes and other taxes. In addition, I will be providing testimony regarding the Company's customer class cost of service and proposed rate design. My work is based on a 12-month Test Year ending September 30, 2015 and a 12 month Test Period ending June 30, 2016.

Q. **What was the scope of your work?**

A. I reviewed the Company's general accounting records, and other selected records and exhibits. I also reviewed monthly financial information, supporting

documentation, operational statistics and participated in conversations and meetings with management personnel regarding accounting, financial, regulatory rate issues and operating matters. The information gathered from these activities was used to develop the proposed revenue requirements and the cost of service by customer class.

Q. **Please identify the Exhibits and filing schedules you will be sponsoring and supporting in your testimony**.

A. I am sponsoring the MFR schedules listed on the Index of Filing designated with my name.

Q. **Were these schedules prepared by you or under your supervision?**

A. Yes they were.

OVERVIEW OF RATE INCREASE APPLICATION

Q. Please discuss MFR 2.1.4 which provides an overview of SUEZ Delaware's requested increase.

A. As shown on MFR 2.1.4, the Company is requesting an overall increase of $4.94 million or 19.96%. This increase represents the additional revenue over the existing DSIC (or Distribution System Improvement Charge) currently being billed the customers. Per the DSIC tariff requirements, a "new base rate filing" resets the DSIC charges to 0 since the costs that the DSIC is based are reflected in this base rate filing and rolls these costs into the proposed tariffed water service rates along with the additional revenue increase requested in

this filing.

Q. What is driving the requested increase?

A. Generally, water utility rate increases are driven by cost increases brought about by inflationary and market pressure on operating costs and the need for plant replacement and upgrades in order to meet regulatory standards for safe drinking water, maintaining service reliability and providing adequate service for customer's day to day needs. The breakdown of the different components driving the increase is presented on MFR 2.1.4.1. The largest single driver of this increase relates to the loss a major industrial customer that has given notice that it will be discontinuing operations in the near future. This particular customer represents about 4.5% of SWDE's Test Period revenues. The other major driver of this increase relates to the investment in facilities since the last case. Mr. Larry Finnicum will go into more detail of the cost drivers impacting this increase as well as the loss of the major industrial customer.

Q. What is the revenue impact on each of class of customers the Company is proposing?

A. Table 1 presented below provides the proposed revenue increases to each of the classes. As required by the DSIC tariff, "The DSIC Rate shall be reset to zero as of the effective date of new base rates that provide for the prospective recovery of the annual costs..." To be exact, the Company's proposed revenue requirement includes costs recovered through the DSIC revenues

and the tariff requires the related revenues to be moved from the surcharge to the new base rates proposed in this case. The DSIC charge will be set to zero. Table 1 demonstrates that the increase delineated between the DSIC portion and the incremental result from this application, which has been approved and is currently being charged customers, and the additional portion the Company is requesting as a result of this proposed rate filing.

TABLE 1

	Total	Residential	Commercial	Industrial	Public Authority	Sales for Resale	Public Fire	Private Fire
Current Revenue	$22,791,709	$11,662,844	$4,240,447	$4,486,766	$120,824	$174,559	$1,181,156	$925,114
DSIC Revenue	$1,696,286	$874,713	$318,034	$336,507	$9,062	$0	$88,587	$69,384
Misc Revenue	$275,610	$156,717	$56,980	$60,290	$1,624	$0	$0	$0
Test Year Revenue	$24,763,605	$12,694,273	$4,615,461	$4,883,563	$131,509	$174,559	$1,269,743	$994,497
Proposed Increase	**$4,943,665**	**$2,788,974**	**$1,014,032**	**$1,072,935**	**$28,893**	**$38,831**	**$0**	**$0**
Percent Increase	**19.96%**	**21.97%**	**21.97%**	**21.97%**	**21.97%**	**22.24%**	**0.00%**	**0.00%**

I will discuss the rationale behind the proposed revenue increase allocation and bill impacts later in the Rate Design section of my testimony.

Q. How is the remainder your testimony organized?

A. My testimony addresses the Company's revenue requirements, customer class cost of service study (COSS) and rate design. The revenue requirements section is broken down by rate base, cash working capital (CWC), revenues and O&M expenses which includes depreciation, income taxes and other than income taxes.

REVENUE REQUIREMENTS

Overview

Q. Please describe MFR 2.1.4 and MFR 3.1.

A. MFR 2.1.4.1, Summary of the General Increase in Rate Filing, is a brief outline of the key elements of the filing included in the requested increase as well as the main drivers of the request. MFR 3.1, Statement of Operating Income and Proposed Revenue Requirements, shows the Company's adjusted revenue requirement for the Test Period and the calculation of the revenue deficiency. MFR 3.1.2 shows the income tax calculation for the Adjusted Test Period and at proposed rates. MFR 3.1.3 summarizes each of adjustments to Operation and Maintenance Expenses.

Q. How is your revenue requirement testimony organized?

A. I will address rate base and its various components first, then Cash Working Capital (CWC), revenues and O&M expenses including depreciation and other taxes.

Rate Base

Q. Please describe the exhibits you are presenting in support of the Company's Rate Base.

A. I address and list each of the MFRs related specifically to the calculation of rate base in this section of my testimony. The components of Rate Base are detailed in 26 Del.C. § 102(3), which dictates that Rate Base is comprised of:

a) The original cost of all used and useful utility plant and intangible assets either to the first person who committed said plant or assets to public

use or, at the option of the Commission, the first recorded book cost of said plant or assets; less;

b) Related accumulated depreciation and amortization; less;

c) The actual amount received and unrefunded as customer advances or contributions in aid of construction of utility plant, and less;

d) Any accumulated and deferred and unamortized income taxes and investment credits related to plant included in paragraph a. above, plus;

e) Accumulated depreciation of customer advances and contributions in and of construction related to plant included in paragraph a. above and plus;

f) Materials and supplies necessary to the conduct of the business and investor supplied cash working capital, and plus;

g) Any other element of property which, in the judgement of the Commission, is necessary to the effective operation of the utility.

A summary of the rate base components can be found in MFR 4.2, Jurisdictional Rate Base Summary. Line 11 of this schedule shows a proposed Test Period rate base amount of $89.68 million. MFR 4.2 also shows the letter reference designating the section of 26 Del.C. § 102(3) applicable to the MFR.

Q. Please address the rate base calculation of the Test Year and Test Period.

A. The list and descriptions for each rate base component or MFR requirement

for the Test Year and Test Period are:

MFR 4.3.1, Used and Useful Utility Plant in Service, shows total plant, excluding intangible plant, itemized by NARUC account. These amounts represent SWDE investment in equipment, land, tools, transportation and other utility plant. The adjustments needed for plant that will be completed and retired during the Test Period can be found in MFR 4.3.4, Used and Useful Utility Plant in Service – Test Period Adjustments. These additions and retirements are derived from the Company's budgeted capital expenditures and retirements. Mr. Finnicum discusses the capital program in his testimony. I will discuss the planned capital additions later in my testimony. Additional support for Test Period adjustments can be found in the workpapers.

Non-depreciable amounts of intangible assets that are included in rate base can be found in MFR 4.4, Intangible Assets Claimed in Rate Base.

MFR 4.5, Accumulated Depreciation and Amortization shows the per book accumulated depreciation by account at the end of the Test Year. This amount represents the recovery though depreciation expense of investments made by SWDE to provide utility service to its customers. Nine months of additional depreciation expense, representing the amount of depreciation expense that takes place during the Test Period is added to the Test Period amounts. The support for these additions have been provided in the workpapers.

Reimbursements for the costs of certain Company assets can be found in MFR 4.6, Contributions in Aid of Construction (CIAC). This schedule shows the Test Year balance as well as CIAC that will be added through the end of the Test Period.

MFR 4.7.1, Accumulated Deferred Income Taxes – Federal and State ("ADIT") shows the per book balances, as of the end of the Test Year, of ADIT items relating to rate base. The adjustment made to the Test Year balance is the projected change in the difference between the pro forma book depreciation expense and projected income tax depreciation expense times the Company's composite marginal income tax rate of 40.655% (8.7% State and 35% Federal). The marginal income tax rate is used as an estimate of the rate at which the ADIT will reverse over time. A change in the income tax rates utilized or affected in the filing would also change the ADIT amount.

MFR 4.8, Amortization of Contributions in Aid of Construction represents the Company's accumulated amortization of contributions and advances as of the end of the Test Year. This amortization was discontinued as of October 31, 1993 per DPSC Order No. 3683, Docket No. 93-28.

MFR 4.9, Materials and Supplies shows the calculation of the 13-month average of materials and supplies balances.

MFR 4.10, Investor Supplied Cash Working Capital is based on the results of the lead-lag study which will be discussed later in my testimony.

MFR 4.11 Page 2, Prepayments is a calculation of the 13-month average of prepayments included in rate base. MFR 4.11 Page 3, OPEB Funding shows the calculation of the tax affected Unfunded OPEB Liability as of the end of the Test Year and Test Period.

The calculation of Pro Forma Depreciation Expense can be found in MFR 5.3.6. The Company's approved depreciation rates are applied to the forecasted utility plant by primary account from MFR 4.3.1 to calculate the pro forma depreciation expense.

Q. Does this complete your rate base testimony?

A. Yes. There are available supplemental supporting workpapers that provide additional details associated with the rate base components discussed above.

Cash Working Capital (CWC) and the Lead-Lag Study

Q. What is Cash Working Capital ("CWC") ?

A. CWC is a component of a utility's rate base that represents the average amount of capital, or in this case cash, needed from investors to bridge the gap between the time when expenditures are paid and the time when revenue

is collected for the service. Said another way, it is the working capital needed to fund the daily operations of the utility given the differences between the time when the utility must pay for goods and services and the time when the utility receives payment for the services it provides. A common methodology used to measure or estimate CWC is known as the lead-lag methodology or lead-lag study.

Q. Provide a brief explanation of the Lead-Lag approach reflected in the Company's CWC calculation.

A. A lead-lag study measures the difference between the time services are rendered until cash for services is collected in rates (the revenue lag) and compares it to the time that operating services are incurred until they are paid (the expense lead). Thus, the terms "revenue lag" and "expense lead" can be defined as follows:

1. Revenue Lag – the number of days (or lag time) between the delivery of water service to transmission customers and the later receipt of payments for the service; and

2. Expense Lead – the number of days (or lead time) between the delivery of materials and supplies or service period of services used by SWDE to provide water service and the subsequent payments to vendors for those goods and services.

The difference between these two periods is expressed in days. The net lead-

lag days (revenue lag – expense lead) is then multiplied by the average daily operating expenses to estimate the amount of CWC required for the Company's operations.

Q. How should the Revenue Lag be determined?

A. The SWDE Revenue Lag consists of three components: (1) the service period, which measures the time lag from the middle of the period for which service is billed; (2) the billing period, which measures the time lag needed to process and record bills; and (3) the collection period, which measures the time lag between the recording of bills and the receipt of the billed revenues. The days for each segment are totaled to produce the amount of time between the delivery of service to customers and the receipt of the related revenues for such service, otherwise known as the revenue lag.

Q. How should the O&M Expense Leads be determined?

A. The SWDE Expense Leads are determined by separate groups or types of expenses. The study measured the lead days for each of these groups independently. Generally the expense leads have two components, either a service period, which measures the time lag from the middle of the period for which the service was provided or the actual day the service was provided. The second component is the time in between the end of the service period until actual payment is made.

1 **Q. What is the Company proposing regarding the Lead-Lag study in this**
2 **filing?**
3 **A.** The Company is proposing to employ the Lead-Lag study developed in the
4 last case updated with the Test Period expense values. In addition, the
5 revenue lag days have been updated to reflect the Test Year billing conversion
6 of the quarterly billed customers to monthly. Thus, the revenue lag reflects a
7 30 day service period rather than a 90 day service period. This shortens the
8 revenue lag by almost 20 days. The Company's proposed CWC amount is
9 much lower than the CWC amount requested in the last case due to the lower
10 revenue lag. I believe that the resulting CWC proposed in this case is very
11 close to the estimate that would have resulted if the Company had conducted
12 a full blown lead-lag study using Test Year data.
13
14 **Q. Why is do you believe the CWC estimate proposed in this filing would be**
15 **close to the estimate resulting from a full blown study based on Test**
16 **Year data?**
17 **A.** The Company's accounts payable policies and payment terms have not
18 changed since the last CWC estimate was developed. For instance, payroll is
19 still paid over 26 pay periods, federal, state and property taxes are due under
20 the same terms and invoices are paid on a net 30 basis today as in 2010. With
21 the exception of the quarterly billing change, billing and collection procedures
22 are virtually the same as they were in 2010. Further, the number of monthly
23 service days used to replace the quarterly service days are undisputable. In

other words, the revenue lag component is a well-defined component, the fact there are around 30 days in a month on average cannot be questioned. Further, the change reduces the Company's CWC estimate from the last case.

Q. Do you believe the Company's approach of using the previous filings CWC estimate with updated service period days and the Test Period expense amounts is reasonable?

A. Yes. SWDE and its customers has saved the time and expense that would be required to conduct a full blown Test Year CWC estimate or lead-lag study. The costs saved outweigh any minor differences that a lead-lag study based on current Test Year data may have produced. However, as an added precaution, the Company is willing to accept only 80% of the computed Cash Working Capital estimate to assure that the requested amount is significantly lower than an amount from a full blown study conducted with current Test Year data.

Revenues

Q. Please describe the SUEZ Water Delaware (SWDE) revenues.

A. SWDE serves approximately 37 thousand customer connections under a general metered tariff for Residential, Commercial, Industrial, Public Authority and Public and Private Fire Service customers. During the Test Year the Company converted all of its quarterly billed customers to monthly. Thus, all customers as of the Test Year are billed on a monthly basis. In addition,

SWDE supplies wholesale water service to its affiliate in Pennsylvania and other municipalities on an as needed basis.

Q. What process was used to develop the Adjusted Test Year revenues?

A. As stated earlier, during the Test Year the Company converted all quarterly billed customers to monthly. It is my understanding that during the billing conversion or transition there were some instances that resulted in the billing system recording more bills and volumes that were actually due from customers. In other words, the books reflect the correct net revenues, however the billing determinants as applied to current rates do not. The impact of the billing transition was assessed and adjustments were made to the billing system data to reflect a reasonable level of Test Year billing determinants that produce revenues that relate to the books. MFR 5.2.1, Schedule No. 3A presents the books to Test Year adjustment in revenues for the billing system modifications due to the billing transition. This adjustment normalizes actual Test Year water service billing determinants and revenues to be consistent with the previous year's water service billing determinants and revenue levels.

Q. Do you believe the methodology used to correct the Test Year billing determinants is reasonable?

A. Yes I do. The Test Period normalization adjustments made to the Test Year corrected billing determinants provide the appropriate level of bills and volumes to develop rates by. A comparison of the proposed normalized

revenues to previous year's revenues indicates that the results are reasonable.

Q. Once the Test Year billing determinants and revenues were corrected for the billing conversion what approach did you take to develop Test Period revenues?

A. The consumption was normalized using a regression with the MS Excel "TREND" function as applied to the rolling 12 month historical average customer consumption of the most recent ten years. This approach normalizes revenues for weather, customer growth and declining usage. The customer growth adjustment for the Company annualizes the Test Year customer growth which includes the additional customers discovered and added during the billing audit, based on the number of active meters at the end of the Test Year. The trending and customer growth adjustments reflect a full year of annual normalized usage for the Test Period. The objective is to develop Test Year and Test Period operating revenue based on a normal consumption pattern for the current number of customers. Consistent with industry trends, the Company has generally seen a decline in total water consumption and usage per customer. In any particular year, water consumption can vary significantly due to external factors such as weather fluctuations, environmental changes, social and economic conditions, housing growth, conservation measures, and the use of environmentally friendly appliances. As

this trend is expected to continue in the future, in order to more accurately determine the consumption typically used, the analysis was based on a regression with the "TREND" function. This function calculates the statistics for a line by using the least squares method to calculate a straight line of the Company's historical consumption for the most recent ten years for the Residential, Commercial and Public Authority customer classes. I believe the result provides a reasonable level of normalized consumption, or average per customer use, on a going forward basis.

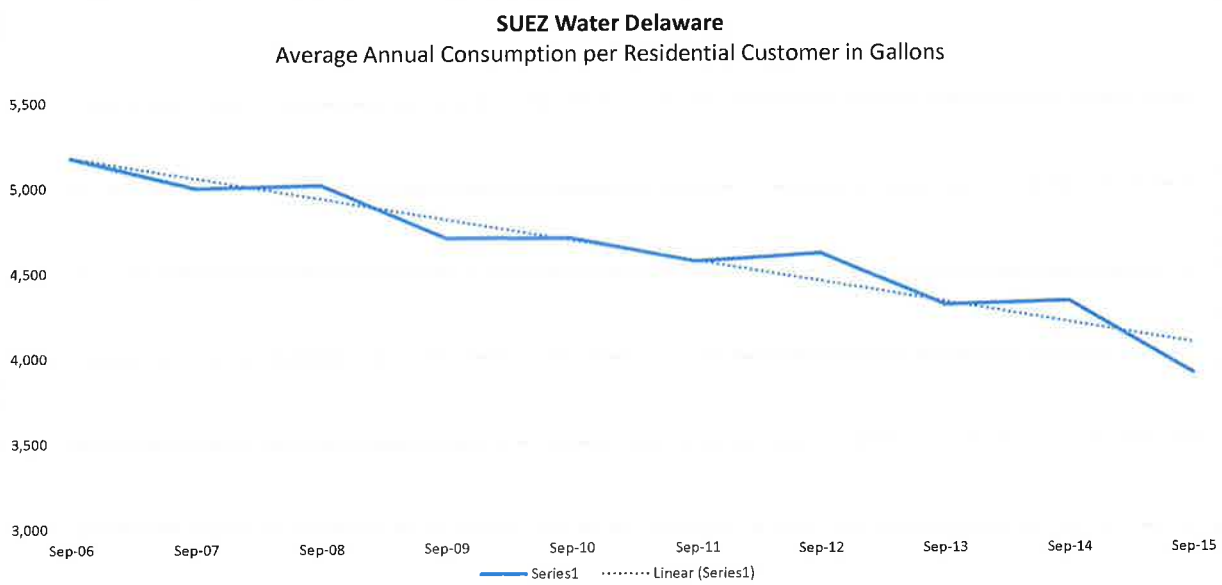
Q. What factors are contributing to declining water consumption through North America?

A. The following excerpt from an article published by the University of North Carolina Environmental Finance Center clearly describes a number of reasons why water consumption is declining.

> "Conservation efforts are everywhere. Most cities collect recyclables. Children no longer leave the faucet running when brushing teeth. "Green" is viewed favorably by the majority of the population. This acceptance of conservation has evolved over the past 40 years.
>
> Federal legislation (the Energy Policy Act of 1992, the Energy Policy Act of 2005 and the Energy Independence and Security Act of 2007) have led to requirements that mandate more and more efficient fixtures and appliances. Most homes have reached build-out with respect to fixtures and appliances, so there are not additional fixtures or appliances coming into homes, just replacements, which are likely more efficient than the devices they are replacing.
>
> It is unlikely that the conservation ethos, particularly held by the younger generations, will dissipate. Appliances and fixtures will continue to become more efficient and rates will rise. While the economy has historically been cyclical and should rebound, with the other three factors continuing to

> depress per capita usage, we believe that utilities in the United States are in the midst of a "new normal." It is unlikely that consumption will return to the levels of five or ten years ago. Though there is a limit to how low per capita usage can go, it is unlikely that the lower limits have been reached, considering how low per capita usage is in certain areas of the United States and around the world."
>
> Declining Water Consumption, Part Two: The Big Picture
> By Erin Weeks
> http://efc.web.unc.edu/2012/05/25/declining-water-consumption-part-two-the-big-picture/

As stated in the paper, the factors that are pushing down consumption are: acceptance of conservation; prevalence of more water efficient fixtures and appliances; elasticity impact of increasing water rates; and economic downturn. This trend in lower use per customer is continuing as shown in the graph below.



Q. Is this trend occurring outside of SUEZ Water Delaware?

A. Yes, this declining usage is happening across the country. Numerous studies have been conducted on this declining trend in residential water usage in North America with articles published in the *American Water Works Association Journal* and the *Water Research Foundation* to name a few. A Summit on Declining Water Sales and Utility Revenues convened by the *Alliance for Water Efficiency* was held in Racine, Wisconsin in 2012 to explore the issues this declining water use is causing. In November 2014, the report Estimated Use of Water in the United States in 2010 from the *United States Geological Survey (USGS)* finds that total water withdrawals are at the lowest level since 1970 and 13% less than in 2005. Public withdrawals in that time frame (2005-2010) are 5% less even though the United States experienced a 4% growth in population.

Q. Do you expect this trend to continue?

A. Water using appliances are getting more and more efficient and there is more emphasis on water conservation measures to the general public. In addition, social trends to smaller households is having an effect on water usage. The passage of the Federal Plumbing Standards in 1992 have required toilets to use only 1.6 gallons a flush and today "high-efficiency" toilets use even less water. Over the years water efficiency standards have been applied to other household appliances. This century, "going green" has expanded to water efficiency with growing concerns over both the cost and supply of water. The Energy Policy Act of 2005 set new standards for plumbing fixtures and set

efficiency standards for some commercial water using appliances such as commercial clothes washers while providing tax incentives for domestic dishwashers and washing machines. According to a May-June 2011 article in ECOHOME, *Awash in Savings,* "dishwashers and washing machines use 60% less water than they did 10 to 15 years ago."[1] In 2012, the Department of Energy released new energy efficiency standards for residential dishwashers and clothes washers. These standards which went into effect in 2013 for dishwashers and 2015 for washers are expected to reduce water usage in home dishwashers by more than 20% and front-loading washers by 35%. The consensus today is the decline in water usage is expected to continue:

> "While local trends will impact utility-specific plans, this research investigation identified decreasing household size and penetration of water-conserving appliances as the primary causes of declining residential water usage. Although the rate of decline may slow, there is no indication that national household trends will reverse. Also, new and existing federal regulations will prompt further penetration of water-conserving appliances. Thus there is no indication that the decline in water usage will reverse."[2]

Q. Earlier you stated that the Company was notified by a large industrial customer that they would be discontinuing operations. Has this been reflected in the Test Year revenues?

A. Yes. The customer's billing determinants and revenue was removed from the Test Year data along with two other, much smaller, industrial customers who

[1] ECOBUILDING PULSE, Awash In Savings, ECOHOME May-June 2011, HTTP://www.ecobuildingpulse.com/water-conservation/awash-in-savings_1.aspx

[2] (Coomes et al. *North American Water Usage Trends Since 1992-Project #4031 (*Water Research Foundation, 2010.)

discontinued service during the Test Year as well. The loss of Industrial, as well as Commercial, customers has been ongoing at SWDE over the last several years as discussed in Mr. Finnicum' s Direct Testimony. This one customer results in a loss of $1 million per year shown on MFR 5.2.5.

Q. Did you normalize Other Revenues?

A. Yes, WP-3A Other Revenues details the normalizing adjustments to other revenues. This adjustment includes the removal of 75% of the revenues received from cell tower leases to reflect the Company's proposal to share the revenues with shareholders. The sharing of passive revenues, such as from cell tower leasing, is not uncommon in other rate jurisdictions. Other state Commissions have recognized the value of encouraging Companies to develop alternative sources of revenue to benefit customers and shareholders. Mr. Finnicum's discusses the Company's support for the reasonableness of this adjustment in his Direct Testimony.

Q. Please explain why you removed unbilled revenues from the Test Year.

A. For ratemaking purposes, the unbilled revenues or accrued revenues must be excluded because normalizing revenue adjustments have been made. Billing determinates should be based upon anticipated billed revenues. If these accounting amounts were not removed, revenues would be overstated in the revenue-deficiency calculation.

Q. Did you verify and prove the test-year revenues?

A. Yes. As discussed above we conducted a detailed analysis of billing data provided by the Company. This data was used to develop the proposed rates and includes volumetric and meter counts by class and blocks.

O&M Expenses

Q. Please provide an overview of the O&M expense adjustments the Company is proposing.

A. MFR 3.1.3 provides a list of all the O&M expense adjustments that are being proposed. The expense adjustments and their related work paper reference are as follows:

Purchased Water	WP Sch 3B-1
Purchased Power	WP Sch 3B-2
Chemicals	WP Sch 3B-3
Sewer Connection Expense	WP Sch 3B-4
Customer Care and Costs	WP Sch 3B-5
Recovery of DBRC Charge	WP Sch 3B-6
Recovery of Watershed Costs	WP Sch 3B-7
Vehicle Leasing	WP Sch 3B-8
Cross Connection Survey Costs	WP Sch 3B-9
Property/Real Estate Tax	WP Sch 3B-10
Convenience Cost	WP Sch 3B-11
Management Service Fees	WP Sch 3B-12
Depreciation Expense	WP 2C-2
Salaries and Wages	WP Payroll Adjustment
Employee Benefits	WP Payroll Adjustment
Payroll Taxes	WP Payroll Adjustment
Temporary Held	WP Payroll Adjustment
Rate Case Expenses	MFR 5.3.13

Q. Please explain the adjustment to purchased water.

A. The proposed amount for purchased water reflects one adjustment to the Test Year amount. The adjustment increases purchased water expense to reflect the proposed Hoops contract currently being negotiated. The anticipated contract amount for the Test Period is approximately $320 thousand. This amount will be updated as negotiations progress and a final amount is determined.

Q. Please describe the adjustment to purchased power.

A. The Test Period purchased power amount reflects four separate adjustments. First, purchased power is adjusted to reflect the upcoming power contract increases and the pending increase in the distribution or "wires" charges. The second adjustment reflects the matching or corresponding impact of the normalizing adjustments to revenues discussed earlier in this testimony. The total sales volume reduction of 611,330 thousand gallons was grossed up by the non-revenue water percentage or 19.26% to estimate the amount of water actually produced or 757,159 thousand gallons. This amount was divided by the total thousand gallons produced during the Test Year to determine the percentage reduction in purchased power costs or in this instance 12.37%. Test Year purchased power expense was reduced by 12.37%. The third adjustment reflects the additional power costs that will be incurred as a result of the Aquifer Recovery Program (ARP). This program is discussed in Mr. Finnicum's Direct Testimony. The fourth and final adjustment reflects a

reduction in power costs anticipated as a result of the discontinuance of the operation of a sludge press discussed later in my testimony.

Q. Please discuss the adjustment to chemical costs.

A. The adjustments to chemical costs are identical to purchased power. As with purchased power, there are four adjustments, the first adjustment reflects an increase for anticipated price increases during the Test Period. The second adjustment is a corresponding reduction of 12.37% for revenue normalization. The computation of the 12.37% is discussed above in the purchased power adjustment. The third adjustment is for additional costs expected due to the ARP (discussed above) and in Mr. Finnicum's testimony. The fourth and final adjustment is a reduction for chemical costs associated with the discontinuance of the operation of a sludge press discussed later in my testimony.

Q. Please explain the Sewer Connection Expense adjustment.

A. This adjustment reflects the planned elimination of sludge press operations. Rather than treating sludge with the sludge press for disposal by truck hauling, the Company plans to dispose of the sludge through a new connection to the County sewer system. This will result in more efficient use of the labor force (the sludge press will no longer require operation and maintenance), improve reliability of sludge removal and eliminate other imbalances and bottlenecks in the treatment process. In addition, the removal of the sludge press will

improve safety by removing potential hazards associated with operating the press and from hauling operations. On top of these benefits stemming from eliminating sludge hauling operations environmental benefits will accrue through elimination of vehicle emissions currently generated by sludge hauling trucks.

Q. Please describe the adjustments related to Customer Care and Billing.

A. As discussed earlier in my testimony, during the Test Year the Company sought and was granted approval to convert all customers billed on quarterly basis to a monthly basis. The billing conversion resulted in higher postage and printing costs due to the significant increase in bill printing and mailing. In addition, due to accounting changes postage for billing is no longer directly booked to postage account, rather, postage will be included in the CC&B (Customer Care & Billing) monthly charges booked directly to SWDE postage account. The reduction in Test Year billing postage costs more than offset the increase in the CC&B costs resulting in net savings to SWDE.

Q. Please discuss the adjustment related to the recovery of the Delaware River Basin Commission (DRBC) charge.

A. The DRBC bills organizations for use of Delaware River Water. For many years SUEZ Water Delaware was exempt from these charges. However, the DRBC determined that SWDE no longer met the exemption and back billed SWDE for fourteen years of water use. SWDE management met with the

DRBC representatives and negotiated a payment to DRBC of $300 thousand. SWDE is proposing to recover the payment by amortizing the amount to the income statement over a fifteen year period.

Q. Please explain the adjustment related to the Watershed Control Plan (WCP).

A. Mr. Finnicum addresses the WCP in his Direct Testimony. This adjustment identifies and accumulates all the costs incurred for the WCP. SWDE is proposing to recover costs incurred on its WCP over a five year period by amortizing the costs to the income statement.

Q. Please address the adjustment for vehicle leasing and related transportation costs.

A. SWDE maintains a number of service vehicles to maintain and operate the system. During the Test Year a number of vehicles are scheduled to be replaced due to wear and tear or added due to expansion. This adjustment normalizes the lease expenses for the replacement and additional vehicles that are planned to be in operation by the end of the Test Period. Included in this adjustment are updated fuel and repair costs to reflect the requirements of the Test Period fleet. In addition to the lease, fuel and repair costs, the Company is including the costs related to the GPS equipment that will be installed and maintained on each vehicle. The GPS equipment installations will help SWDE manage costs and improve efficiency and customer service.

Q. Please explain the adjustment to recover cross connection survey costs.

A. To address public health concerns the State of Delaware has implemented new regulations that require surveys related to cross connections and back flow. As a result of these new regulations SWDE has determined that it will need to conduct, on average, 600 surveys per year. Outside contractors will assist SWDE with the surveys.

Q. Please discuss the adjustment to property taxes.

A. This adjustment computes and effective tax rate using the latest tax bills divided by Test Year gross plant. The effective tax rate is applied to the Test Period gross plant balance to determine a Test Period property tax amount.

Q. Please address the customer convenience cost adjustment.

A. Currently customers who wish to pay their bills with a credit card are charged a fee by their credit card company. SWDE is proposing to cover these fees as a part of the revenue requirements rather than requiring customers to pick up the cost. It is my understanding the SUEZ has successfully implemented this initiative in other jurisdictions. During the Test Year SWDE customers used credit cards 35,047 times to pay bills and, SWDE is anticipating a 25% increase in credit card payment activity. This adjustment reflects the credit card costs based on the Test Year activity increased by 25%.

Q. Please describe the adjustment to Management Service Fees.

A. The costs associated with the Management and Services (M&S) expense is for services provided by SUEZ Water Management and Services (SWM&S). These services include administration, communication, customer service, finance, human resources, information systems, legal, procurement, technical services and other general services necessary in the proper conduct of business. The M&S charges are comprised of various cost elements that are an accumulation of expenses incurred that are then allocated to SWDE as well as all other entities receiving M&S services. During the Test Period the M&S allocation will change based on recent evaluations and analysis. A number of expenses normally directly charged to the operating subsidiaries will be included in the M&S allocation, thus these charges should be removed from the Test Year expenses to offset the M&S allocation for the Test Period that will have these charges included. The overall net adjustment is an increase of around $26k. Mr. Gary Prettyman addresses the M&S allocations in more detail in his Direct Testimony.

Q. Please explain the development of the depreciation expense adjustment.

A. The depreciation expense adjustment is based on the calculations presented in WP-2C-2 which applies the current approved depreciation rates to the proposed plant balances that include the additions and retirements through the Test Period June 30, 2016. In addition, depreciation expense is reduced to reflect the amortization the various plant accounts that reflect CIAC

(Contribution in Aid of Construction).

Q. Please discuss the proposed adjustment to payroll expense.

A. The adjustment to payroll details the normalized calculation of labor expense for the Test Period. In order to determine the normalized labor expense, I included the annual compensation of each active employee for the most current pay period available. The payroll adjustment includes the annual compensation for two of the three new positions addressed in Mr. Finnicum's Direct Testimony. The two positions are the Asset Management Specialist and the Director of Engineering. In addition to these positions there is one new full time position for an Operator Intern, two full time vacancies to be filled and two part time Summer Intern positions reflected in the adjustment. For wage increases the adjustment reflects a wage increase of 3% for bargaining employees and a 2% increase for non-bargaining employees. Overtime, bonuses, and the capitalization rates for both the bargaining and non-bargaining employees are based on the averages of the four years; the Test Year and the three prior years. The adjustment includes labor costs transferred in and out based on Test Year activity and positions included the payroll adjustment. These costs either reflect the cost of labor provided by other business units to SWDE or the cost of labor charged by SWDE to other business units either under an employee sharing arrangement or direct services rendered. Lastly, the adjustment includes a reduction to the temporary labor cost to recognize that at full employment these costs would

not be required.

Q. Please discuss the adjustment to employee benefits.

A. This adjustment details the cost of benefits which include Pension, Post-Retirement Benefits, healthcare, group term life insurance, 401K and other miscellaneous. Pension and Post-Employment Benefits other than Pensions ("PEBOP") costs are actuarially determined costs based on the current employee salary levels. Test Period amount is based on the forecast for 2016 provided by the Company's actuary, AON. Employee health and medical coverage includes dental and vision care along with group term life insurance coverage to employees. It is computed based on actual costs for 2016 and applied to the existing employee plan participants reflected in the payroll adjustment. The new positions and vacancies to be filled are included in the calculation. The Company contribution match to the401 K plan is based on the payroll adjustment as well. Other benefits are additional employee related costs which includes long-term disability insurance, benefits administration fee, medical waiver, etc. The Test Period benefit expense amounts were adjusted or reduced using the payroll capitalization factors computed in the payroll adjustment discussed above.

Q. Please address the proposed level of rate case expenses.

A. The rate case expense level proposed and presented in MFR 5.3.13 represent the estimate costs that would be incurred assuming the case goes to hearing

and is fully briefed. SWDE is proposing a four year amortization period for these costs. Rate case costs will be updated as the case progresses.

Q. Does this conclude your testimony on SWDE's proposed revenue requirements?

A. Yes.

COST OF SERVICE STUDY & PROPOSED RATE DESIGN

Q. Please briefly address the purpose of a cost of service study.

A. After a utility's overall revenue requirement is determined, the required revenue should be recovered from the utility's various customer classes. The cost of service study provides a basis for allocating revenues to the various classes with the purpose of recovering these revenues from each class. The cost of service study develops the cost of providing water service as well as includes the overall return for each class. This is done by apportioning a utility's expenses and investments to its various customer classes. Customers use water in different amounts at different times thus, a utility's cost to serve different customer classes will vary. The premise of the cost of service study is that each customer class should pay the appropriate costs of serving their class and; therefore, rates should be developed on equal rates of return, rather than equal rates, for each class.

Q. Please summarize the cost of service study you have completed in this rate request.

1 **A.** The Company's cost of service study was conducted using a widely used and
2 accepted methodology known as the Base Cost-Extra Capacity method. The
3 first step of this methodology assigns the components of the revenue
4 requirement to various cost functions. The second step allocates the cost
5 functions determined in the first step to the various customer classes, such as
6 residential, commercial, industrial, public authority, sales for resale, and fire
7 protection. If done properly, the resulting calculations should yield a fairly
8 accurate assessment of the cost of providing water service to each class of
9 customers. Once the cost basis has been calculated, the revenue deficiency is
10 determined for each class. Then, monthly customer charges and volumetric
11 rates within each customer class are established by using unit costs.
12
13 **Q. Does the cost of service by customer class reflect the actual Test Year**
14 **and Test Period data presented in the filing?**
15 **A.** Yes. Specifically, the system ratios are based on actual Test Year operating
16 data as provided by the Company and all of the data used to develop the
17 allocation factors are based on Test Year records. The customer class factors
18 used to assign maximum day and maximum hour ratios to each class are a
19 blend of standard industry factor plus a factor that calculates maximum day
20 usage by correlating SWDE's highest annual maximum water production day
21 within the last five years adjusted for non-revenue water (NRW).
22
23 **Q. Please provide an overview of the Exhibit you are sponsoring in the**

filing that support the cost of service study.

A. The MFR 8.4 supports class cost of service study and consists of three sections. Section A – includes the summary of the study, suggested rate design, the information on current and proposed charges, and the impact on typical customer bills.

Section B – summarizes revenue deficiency and rate base distribution among customer classes. It also provides the detail on the distribution and allocation of revenues, operating expenses, annual depreciation expense, income taxes, and plant.

Section C – summarizes the allocation factors used, information regarding the SWDE system water demands, and class ratio factors used to develop the functional allocations.

Q. Please discuss Section A, which summarizes the results of the class cost of service calculations?

A. Section A presents the cost of service calculated revenue deficiencies by customer class. The total revenue deficiency represents 20.19% of the revenues required to cover costs associated with serving SWDE's customers. I am proposing to equally increase the revenue, by 22.24%, among residential, commercial, industrial, public authority, and sales for resale customers and keep public and private fire services revenue as is. These increases differ from the calculated cost of service increases. The results of the cost of service study suggest that the overall average revenue increase should be 20.19%;

residential customers should see a revenue increase of 23.35%; commercial – an increase of 23.50%; industrial – an increase of 31.95%; public authority – an increase of 20.00%; sales for resale – an increase of 337.02%; public fire – a decrease of 54.06%; and private fire – a decrease of 39.16%.

Q. The Company is proposing a different allocation of the revenue deficiency than what the cost of service study suggests. Please discuss revenue deficiency allocation the Company is proposing.

A. The Company considered both the percentage increase by class indicated by the cost of service analysis and the requested overall average percentage increase on revenues. Due to the magnitude of this rate increase, it is the Company's position that residential, commercial, industrial, and sales for resale should receive equitable increase and no class should receive a decrease as the Cost of Service study indicates for the Fire Protection classes. Further, the Company is concerned that a significant increase to the Sales for Resale and Industrial class could result in Resale and Industrial customers leaving the SWDE system for an alternative source. Given the potential impact on loosing those customers, we recommend that the increase be spread equitably. This goal is best achieved by distributing over-recovered revenues from fire protection services to the remaining classes; thereby, decreasing these classes' revenue deficiencies and, at the same time, keeping fire protection services rates the same. This proposal moves all classes closer to cost base rates.

Q. Please discuss why you believe this proposed revenue increase allocation is equitable.

A. Strict adherence to the cost of service calculation results would suggest that some classes are receiving higher increases than the study supports or increases that seem unreasonable when compared to other classes. However, there are external considerations that can be used to justify the proposed spread of the revenue increase. Although the cost of service model shows that the fire protection classes produce more revenues than needed, lowering rates on these relatively small classes at the same time all other classes' rates are increased would not be considered equitable. By and large, all classes have been subject to the same inflationary and economic forces and fire protection should not be an exception. Another way to view the fire protection classes is as subsets of the other classes. For instance, the private fire class is primarily related to the industrial class and the public fire is related to the other non-industrial classes. In other words, all the classes (with exception of the resale class) benefit from the excess revenues from the fire protection classes.

Q. Is the Company proposing a change to the rate structure reflected in the existing tariffs?

A. No. The Company believes that the ratepayers should not be burdened by changes in the existing rate structure that would cause some customer bills to

increase more than the average and some less than the average. I am proposing a 22.89% increase to the 5/8 inch meter with the charges for the higher meter sizes based on the meter and service equivalences as established by the AWWA. Further, the current rate structure for the Residential and Industrial classes reflects a conservation structure or an inclining block, a structure required by this Commission.

Q. Please describe the core goals when determining the proposed rate levels for the conservation rates.

A. The three goals of revenue neutrality, equity and conservation were considered when developing the rate levels for the Residential inclining block structure. Equity and conservation was addressed by limiting the level increases in the lower usage and increasing rates to customers with high usage. Typically, the higher usage customers will have an incentive to conserve if the average price per 1000 gallons is significantly more than the average price in the lower usage levels. Reducing excessive consumption is the goal of conservation rates. Section A of the MFR 4 includes a detailed list of the proposed rates and typical bill calculations.

Q. Does this conclude your Direct Testimony?

A. Yes it does.

APPENDIX A

Résumé of Charles E. Loy

EDUCATION: BBA Accounting, University of Texas at Austin
Certified Public Accountant, Texas

PROFESSIONAL MEMBERSHIPS:

American Water Works Association
National Association of Water Companies
Water Environment Federation
Texas Society of Certified Professional Accountants
American Public Gas Association
Texas Gas Association

EXPERIENCE:

Mr. Loy has over 25 years' of experience helping organizations meet challenges arising in both regulated and competitive environments within in the utility industry.

2001-Present GDS Associates, Inc.: Principal – Mr. Loy started with GDS in June of 2001. His focus is on regulatory accounting and finance. He is experienced in water, wastewater, natural gas, and electric regulatory and accounting matters. Mr. Loy assisted a number of water, wastewater and gas distribution clients with rate case filings before various regulatory authorities in a number of states. He has assisted with the financial analysis of wholesale purchase power and retail aggregation projects as a result of the deregulation of the electric industry in Texas. He has conducted analysis and developed recommendations regarding the Southwest Power Administration's rate increase on behalf of member clients. He has participated in a number of natural gas and electric projects involving rate increases, acquisition analysis and other special projects.

1999-2001 AquaSource Inc.: General Manager Rates and Regulatory Affairs - AquaSource Inc., a wholly owned subsidiary of DQE Inc and parent of Duquesne Light. AquaSource was formed in 1997 to take advantage of the consolidation in the water and wastewater industries and spent three years and more than $400 million acquiring water and wastewater companies. Mr. Loy's duties included directing the compilation and filing of rate cases, acquisition analyses and related filings, regulatory commission/governmental relations in the twelve states in which AquaSource operates. Additionally, he supervised a professional staff located throughout the country and assisted in business development, developer contract negotiations and other special projects. His appointment came in the middle of AquaSource's aggressive acquisition phase. Accordingly, his first year was spent primarily working to clean up a very chaotic regulatory situation.

1993-1999 Citizens Utilities Company: Manager, Regulatory Affairs – Mr. Loy served as Project Manager of numerous multiple-company water and wastewater rate case filings, in Ohio, Illinois, Pennsylvania and Arizona. In those cases, he prepared and presented testimony, developed revenue requirement calculations, generated revenue and expense pro forma adjustments, performed working capital lead/lag studies, and evaluated rate design/cost of service issues. He proposed surcharge mechanisms for purchased water, a reverse osmosis process, and contract waste treatment. Additionally, Mr. Loy designed and directed the development of the multiple company revenue requirement models that generated filing schedules. In the fall of 1997, Citizens promoted Mr. Loy to Manager Regulatory Affairs. In the new position, he supervised the staff responsible for all regulatory activity involving gas, electric and water/wastewater in

ten states. He was a key member of a team that negotiated a multimillion dollar water and wastewater agreement with a major developer in Phoenix on behalf of Citizens.

1989-1993 Southern Union Gas Company: Rate Manager – Mr. Loy joined Southern Union as Sr. Internal Auditor. In that capacity, he contributed to multiple projects pertaining to the upcoming merger with a large publicly traded corporation. These projects included supervising audits of gas purchases, accounts receivable, accounts payable and oil and gas holdings. He was promoted to Rate Manager reporting to the Vice President of Regulatory Affairs. In that capacity, he supervised a team of four directing the preparation and implementation of 16 rate increase applications before various municipal and state regulatory bodies, and led negotiating sessions with elected and municipal officials. In addition to improving efficiency, he developed several rate mechanisms that resulted in increased earnings. One such efficiency was the Weather Normalization Adjustment Clause (WNAC). By eliminating weather-sensitive fluctuations, the WNAC increased earnings as much as 12%. He also developed a Cost of Service Adjustment Clause (CSAC) which was established in several smaller municipal jurisdictions. The CSAC allowed annual rate increases without the time and expense of major rate filings. Also, Mr. Loy performed analysis and due diligence for numerous municipal and private acquisitions.

1987-1989 Diversified Utility Consultants, Inc.: Sr. Accounting Analyst - Diversified Utility Consultants (DUC) is a consulting firm which represents consumers' interests in rate case proceedings. The firm's clients include municipalities and various state-supported consumer agencies. As a Sr. Accounting Analyst, Mr. Loy worked on seven electric rate cases, two gas rate cases and one water rate case.

Prior to 1987 Mr. Loy spent summers in college rough necking, both offshore and onshore, on oil and gas drilling rigs. His first job after college was in the oil & gas industry where he started in accounts receivable and specialized in collecting past due accounts. He was in the Joint Interest Auditing Department where he reviewed drilling costs and negotiated refunds for the company and its joint interest owners.

Utility Rate Making Experience:

Mr. Loy has presented testimony and/or participated in cases before the following regulatory bodies:

Pennsylvania Public Utility Commission
Public Utilities Commission of Ohio
Indiana Regulatory Commission
Idaho Public Utilities Commission
Illinois Commerce Commission
Arizona Corporation Commission
Arkansas Public Utility Commission
Oklahoma Corporation Commission
Texas Railroad Commission
Texas Public Utilities Commission
Texas Commission on Environmental Quality
Delaware Public Service Commission
New Mexico Public Regulation Commission
New York Public Service Commission
Connecticut Department of Public Utility Control
New Jersey Board of Public Utilities
El Paso Public Utilities Board

LIST OF TESTIMONY, EXPERT PROCEEDINGS, AND ENGAGEMENTS BY CHARLES E. LOY, CPA

WATER UTILITY RATES AND REGULATION EXPERIENCE

Arizona Corporation Commission

Docket No. WS-01303A-006-0403
Presented testimony, prepared the Cost of Service study and rate design on behalf of Arizona-American Sun City and Sun City West Wastewater rate request.

Docket No. WS-01303A-06-0403
Presented testimony, prepared the Cost of Service study and rate design on behalf of Arizona-American Anthem/Aqua Fria Water and Wastewater rate request.

Docket No. WS-01303A-06-0014
Presented testimony, prepared the Cost of Service study, rate design, and assisted with the preparation of the revenue requirements on behalf of Arizona-American Mohave Water and Wastewater rate request.

Docket No. W-01656A-98-0577, SW-02334A-98-0577
Presented testimony for approval of a Central Arizona Project Water utilization plan, the implementation of a Groundwater Savings Fee and the recovery of deferred project costs.

Docket WS-02334A-98-0569
Presented a filing for the approval of an agreement relating to a wastewater plant de-nitrification project with the Sun City Recreation Centers and Del Webb Corporation.

Docket U-3454-97-599
Prepared and presented a filing for the approval of a CCN to provide water and wastewater services to Del Webb's Anthem project and the approval of two related agreements.

Docket No. E-1032-95-417 ET AL.
Presented testimony and prepared the rate filing on behalf of Citizens Utilities Maricopa County water properties 1995 rate request.

Arkansas Public Service Commission

Docket No. 06-160-U
Presented testimony, prepared the Cost of Service study and rate design on behalf of United Water Arkansas's 2006 rate request.

Docket No. 03-161-U
Presented testimony, prepared the Cost of Service study, rate design, and assisted with the preparation of the revenue requirements on behalf of United Water Arkansas's 2003 rate request.

Connecticut Department of Public Utility Control
Docket No. 07-05-44
Prepared the rate filing and supporting testimony on behalf of United Water Connecticut's 2007 water rate request.

Public Service Commission of Delaware
PSC Docket No. 09-60
Presented testimony, prepared the Cost of Service study and rate design on behalf of United Water Delaware's 2009 rate request.

PSC Docket No. 06-174
Presented testimony, prepared the Cost of Service study, rate design, revenue normalization and cash working capital requirements on behalf of United Water Delaware's 2006 rate request.

Idaho Public Utilities Commission
Case No. UWI-W-09-01
Presented testimony, prepared revenue and expense pro forma adjustments, and proposed rate design on behalf of United Water Idaho, Inc. 2010 rate request.

***Indiana Utility Regulatory* Commission**
Cause No. 41842
Prepared the filing and presented testimony for the Petition of Utility Center Inc. for the recovery of Distribution System Improvement Charges -2001

Cause No. 41559
Prepared the filing and presented testimony for a Certificate of Territorial Authority to render Sewage service.-2000

Cause No. 41968
Directed the preparation of Utility Center Inc.' request for authority to increase its rates and charges for water and sewer service. -2000

Illinois Commerce Commission
Docket No. 94-0481
Presented testimony and prepared the filing on behalf of Citizens Utilities Company of Illinois 1994 rate request.

Docket No. 95-0633
Presented testimony on behalf of Citizens Utilities Company of Illinois in Tudor Park Apartments vs. Citizens Utilities of Illinois.- 1995

Docket No. 97-0372
Presented testimony on behalf of Citizens Utilities of Illinois in the Application for Consent to and Approval of a Contract with Affiliated Interests. 1997

State Board of New Jersey Public Utilities
BPU Docket No. WRO702125
Prepared and presented testimony on the determination of the cash working capital requirements on behalf of United Water New Jerseys 2007 rate request.

New Mexico Public Regulation Commission
Case No. 11-00196-UT
Presented testimony and assisted with the preparation of the water rate filing on behalf of New Mexico American Water Company Clovis District

Case No. 09-00156-UT
Presented testimony and prepared the water rate filing on behalf of New Mexico American Water Company Edgewood District

Case No. 07-00435-UT
Presented testimony and prepared the water and wastewater rate filing on behalf of New Mexico Utilities Inc.

Case No. 08-00134-UT
Presented testimony and prepared the water rate filing on behalf of New Mexico –American Water Co.

New York Public Service Commission
Presented testimony, prepared the Cost of Service study and rate design on behalf of United Water New Rochelle's 2010 rate request.

Public Utilities Commission of Ohio
Docket No. 98-178-WS-AIR
Presented testimony and prepared the filing on behalf of Citizens Utilities Company of Ohio 1998 rate request.

Docket No. 94-1237
Presented testimony and prepared the filing on behalf of Citizens Utilities Company of Ohio 1994 rate request.

Pennsylvania Public Utility Commission
Docket No. R-2009-2122887
Presented testimony, prepared the Cost of Service study and rate design on behalf of United Water Pennsylvania's 2009 rate request.

Docket No. R-00051186
Assisted with analysis/filing preparation of United Water Pennsylvania, Inc. 2005 Rate Case.

Docket No. R-00953300
Presented testimony on behalf of Citizens Utilities Company of Pennsylvania 1995 rate request.

Public Service Commission of South Carolina
Docket No. 2014-346-W/S
Filed testimony on behalf of Daufuskie Property Owner's Group (intervenors) regarding certain water and sewer rate base issues.

Texas Commission of Environmental Quality
SOAH Docket 582-14-3415
Application for a 2013 Water Rate/Tariff Change of Canyon Lake Water Service Company
Prepared the application and filed testimony on behalf of Canyon Lake WSC.

SOAH Docket No. 582-14-3384
Application for a 2013 Water and Sewer Rate/Tariff Change of SWWC Inc.
Prepared application on behalf of SWWC, Inc.

SOAH 582-14-3381
Application for a 2013 Water and Sewer Rate/Tariff Change of Monarch Utilities LP
Prepared application on behalf of SWWC, Inc.

SOAH Docket No. 582-12-0224
STM Application of Monarch Utilities I, L.P. to Transfer Water and Sewer Facilities and Certificates of Convenience and Necessity – provided assistance

Application 37531-R
Application for a Water Rate/Tariff Change of Quadvest L.P. Prepared application on behalf of Quadvest L.P. Prepared application on behalf of Quadvest L.P.

Applications 37507-R and 37508-R
Application for a Water and Sewer Rate/Tariff Change of Ranch Utilities, Inc. Prepared application on behalf of Ranch Utilities, Inc.

Application 37317-R
Application for a Water Rate/Tariff Change of Wiedenfeld Water Works, Inc. Prepared application on behalf of Wiedenfeld Water Works, Inc.

Applications 37234-R and 37235-R
Application for a Water and Sewer Rate/Tariff Change of Aqua Texas, Inc. North and Southwest Regions
Prepared application on behalf of Aqua Texas, Inc.

SOAH Docket No, 582-12-0224
Application for a Water and Sewer Rate/Tariff Change of Monarch Utilities LP
Prepared application on behalf of SWWC, Inc.

SOAH Docket No. 582-11-1468
Application for a 2010 Water Rate/Tariff Change of Canyon Lake Water Service Company
Prepared the application and filed testimony on behalf of Canyon Lake WSC.

Texas Commission of Environmental Quality-cont.

SOAH Docket No. 582-11-1458
Application for a Water and Sewer Rate/Tariff Change of Aqua Texas, Inc. Southeast Region
Prepared application on behalf of Aqua Texas, Inc.

Docket No. 0580-UCR
Application for a 2009 Water Rate/Tariff Change of Canyon Lake Water Service Company
Prepared the application on behalf of Canyon Lake WSC.

Docket No. 35850-R
Application for a 2007 Water Rate/Tariff Change of Canyon Lake Water Service Company
Prepared the application on behalf of Canyon Lake WSC.

Docket No. 33763-R
Application for a 2007 Water and Sewer Rate/Tariff Change of Midway, Inc. For the City of Oak Point Service area. Filing initially made with the City of Oak Point.

Docket Nos. 35748-R & 35747-R
Application for a Water and Sewer Rate/Tariff Change of Monarch Utilities LP
Prepared the application on behalf of Monarch.

Docket No. 2006-0072-UCR
Application for a Water and Sewer Rate/Tariff Change of Aqua Texas, Inc
Prepared application and presented testimony on behalf of Aqua Texas, Inc.

Docket No. 2007-0478-UCR
Application for a Water and Sewer Rate/Tariff Change of Texas American Water Inc.
Prepared the application on behalf of Texas American Water.

Docket No. 2005-0114-UCR
Application for a Water and Sewer Rate/Tariff Change of Aqua Texas, Inc
Presented Testimony on behalf of Aqua Texas, Inc.

Docket No. 2004-2029-UCR
Application for a Water and Sewer Rate/Tariff Change of Walker Water Works, Inc.
Prepared the application on behalf of Texas American Water.

Application Nos. 34658-R & 34659-R
Application for a Water and Sewer Rate/Tariff Change of Southwest Utilities, Inc.
Prepared the application on behalf of Texas American Water.

Docket Nos. 2000-1074-UCR, 2000-1075-UCR, 2000-1366 UCR through 2000-1369 UCR
Assisted in the preparation and presentation of the Aqua Source 2000 rate increase

Application No. 7371-R (Texas Water Commission)
Assisted in the analysis of Southern Utilities 1988 rate request on the behalf of Southern Utilities customers.

Other Water Related Engagements and Expert Proceedings

City of Page, Arizona
Water and Wastewater Rate Study – Developed retail water and sewer rates and rate structure change to improve cash flow.

Village of Vinton, Texas
Developed water utility valuation studies for Village water infrastructure improvement efforts.

Town of Providence Village
Developed Expert Witness Report for Denton County Court Cause No. 2011-60876-393
Analysis of Agreements between Mustang SUD and Providence Village WCID

Mitchell County Utility
Assist with divestiture of water utility assets

City of Longview
Ongoing assistance with development of annual formulary wholesale water and wastewater treatment rates.

Aqua Texas, Inc.
Ongoing calculation and updates of Regional Uniform CIAC Fees

Dripping Springs WSC, Hays County WCID 1&2
Review and analysis of West Travis County Public Utility Agency wholesale rate cost of service and rate increase 2012.

SWWC Inc.

- Decertification analysis and valuation of the CCN for Crosswinds development area.
- Decertification analysis and valuation of the CCN for TXI development area.
- Decertification analysis and valuation of the CCN for Tower Terrace/Kilgore Tract development area.
- Decertification analysis and valuation of the CCN for Villages at Warner Ranch development area.

Crystal Clear WSC
Decertification analysis and valuation of the CCN for Texas GLO development area around New Braunfels Texas

Woodbine Development Corp.
Analysis and assistance with LCRA Windmill Ranch wholesale wastewater services contract renegotiations.

Other Water Related Engagements and Expert Proceedings-cont.

Rebecca Creek MUD
Developed before and after merger rate comparison, analysis and forecast regarding the merger proposed by Canyon Lake Water Supply Company.

Global Water Resources
Expert witness before American Arbitration Association regarding the financial standing and regulatory status of Global Water.

City of Alexandria, Louisiana
Financial review, allocated cost of service and rate study for the water and wastewater systems.

Corix Utilities
Assistance with bid preparation and analysis regarding the LCRA retail water and wastewater divestiture.

Golden State Water Company
Assistance with bid concerning divestiture of SWWC Inc.

United Water Management and Services
Developed report regarding Texas IOU regulation for internal assessment of the Texas water regulatory status.

Provide revenue forecasting for various concession projects which involve Municipalities that are considering selling their water and sewer utilities.

Greater Austin Water Forum
Assisted industrial class water users with analysis and participation in the City of Austin 2008 Cost of Service Study.

New Mexico Utilities
Review/analysis and critique report on Albuquerque Bernalillo County Water Utility Authority's Cost of Service Wholesale Wastewater Rate Model

GAS UTILITY RATES AND REGULATION EXPERIENCE

Railroad Commission of Texas
GUD Docket 10190
Prepared filing and testimony of behalf of Hughes Natural Gas 2012 rate increase for the environs of the City of Magnolia.

Railroad Commission of Texas-cont.

GUD Docket 10083
Prepared filing and testimony of behalf of Hughes Natural Gas 2011 rate increase for the incorporated area of the City of Magnolia and environs.

GUD Docket 9731
Prepared filing and testimony of behalf of Hughes Natural Gas 2007 rate increase for the environs of the City of Magnolia.

GUD Docket 9488-9512
Prepared filing and testimony of behalf of West Texas Gas 2004 rate increase for the environs of cities served.

GUD Docket 8033
Filed testimony on behalf of Southern Union Gas Company's 1991 appeal for a rate increase in South Jefferson County.

GUD Docket 7878
Filed testimony and prepared the rate filing on behalf of Southern Union Gas Company's 1991 request for a rate increase in the Austin environs.

GUD Docket 6968
Assisted in the analysis of Southern Union Gas Company's 1987 appeal for a rate increase on the behalf of the City of Austin

Oklahoma Corporation Commission
Docket No. 001345
Presented testimony and prepared the rate filing on behalf of Southern Union Gas Company's 1992 rate request.

Pennsylvania Public Utility Commission
Docket No. 2013-2386293
Assisted the University of Pennsylvania with the analysis of Veolia Energy Philadelphia Inc.'s 2013 steam rate case.

Docket No. 2009-2111011
Assisted the University of Pennsylvania with the analysis of Trigen-Philadelphia Energy Corp's 2009 steam rate case.

Federal Energy Regulatory Commission
Docket No. RP09-791-000
Assist municipal customers of MoGas analyze issues in FERC 2009 gas transportation rate case.

City of Austin

- Presented testimony and prepared filing as well as conducted settlement negotiations associated with Southern Union's 1993 rate request.
- Presented testimony and prepared filing on behalf of Southern Union Gas Company's 1991 rate request.
- Assisted in the analysis of Southern Union Gas Company's 1987 rate request on behalf of the City of Austin.

City of El Paso Public Service Board

- Presented testimony and prepared filing as well as participated in the settlement negotiations of Southern Union's 1993 rate request.
- Presented testimony and prepared filing on behalf of Southern Union Gas Company 1991 rate request.

City of El Paso Public Service Board-cont.

- Presented testimony and prepared the filing on behalf of Southern Union Gas Company 1990 request.

City of Port Arthur

- Presented testimony and prepared filing on behalf of Southern Union Gas Company's 1991 rate request.
- Participated in Southern Union Gas Company's 1990 rate request.

City of Monahans

- Presented testimony and prepared filing on behalf of Southern Unions Gas Company's 1992 rate request.
- Assisted in the analysis of Southern Union Gas Company's 1989 rate request on the behalf of the City of Monahans.

City of Borger

- Prepared testimony and prepared the filing on behalf of Southern Union Gas Company's 1992 rate request.
- Participated in Southern Union Gas Company's 1989 rate request on the behalf of the City of Borger.

City of Galveston

- Presented testimony and prepared the filing on behalf of Southern Union Gas Company's 1992 rate request.

Other Gas Related Engagements

Mitchell County Utility
Assist with divestiture of gas utility assets

Hughes Natural Gas
Ongoing assistance with GRIP filings

Markwest Energy Partners
Ongoing transportation rates and regulatory consulting

Consolidated Asset Management Services (CAMS)
Ongoing assistance regarding RRC Transmission pipeline issues

City of Alexandria, Louisiana
Financial review, allocated cost of service and rate study for the gas system.

City of George West, Texas
Gas utility rate study

Alamo Transmission
Assisted with initial tariff development and related cost of service

Dynamic Energy Concepts Incorporated
Assisted with the review of gas contracts, tariffs, analyzed usage data and assessed procurement practices for a number of US Veteran Hospitals across the country.

ELECTRIC UTILITY RATES AND REGULATION EXPERIENCE

Public Utility Commission of Texas
Docket No. 43731
Prepared a cash working capital study and testimony on behalf of Cross Texas Transmission LLC 2015 Rate Application to establish rates.

Docket No. 41474
Prepared a cash working capital study and testimony on behalf of Sharyland Utilities L.P.'s 2013 Rate Application to establish retail distribution rates.

Public Utility Commission of Texas-cont.

Docket No. 31250
Presented testimony and rate filing on behalf of Rio Grande Electrical Cooperatives 2005 Change in rates for wholesale transmission service.

Docket No. 8702
Assisted in the analysis of Gulf States Utilities 1987 rate request.

Docket 8646
Assisted in the analysis of Central Power & Light's 1988 rate request.

Docket 7661
Assisted in the analysis of the City of Fredericksburg's proposed amendment to Certificate of Convenience.

Docket 7510
Assisted in the analysis of West Texas Utilities Company's 1987 rate request.

Federal Energy Regulatory Commission
Docket No. ER88-202-0000
Assisted in the analysis of the Maine Yankee Atomic Power Plant Decommissioning.

Docket No. ER88-224-0000
Assisted in the analysis of the Carolina Power & Light Company Atomic Power Plant Decommissioning.

City of Bryan

- Developed and programmed data management system for the city electric department.

City of Fredericksburg

- Organized and performed an electric rate survey of Central Texas.
- Assisted in a load and rate design study.

City of Austin

- Assisted in the analysis of the City Electric Utility Department's 1989 rate request.

Other Electric Related Engagements

Dynamic Energy Concepts Incorporated
Assisted with the review of electric contracts, tariffs, analyzed usage data and assessed procurement practices for a number of US Veteran Hospitals across the country

Other Electric Related Engagements-cont.

Northeast Texas Electrical Cooperative

- Ongoing review/analysis of Southwest Power Administration's annual Integrated Power Repayment Studies and resulting rates.

- Ongoing review/analysis of Southwest Electric Power Company's annual formulary wholesale rate adjustments.

Tex-La Electric Cooperative

- Ongoing review/analysis of Southwest Power Administration's annual Integrated Power Repayment Studies and resulting rates.

- Ongoing review/analysis of Southwest Electric Power Company's annual formulary wholesale rate adjustments

Sam Rayburn G&T Electrical Cooperative

- Ongoing review/analysis of Southwest Power Administration's annual Integrated Power Repayment Studies and resulting rates.

- Ongoing review/analysis of Southwest Power Administration's annual Robert D. Willis Power Repayment Studies and resulting rates.

East Texas Electrical Cooperative

- Ongoing review/analysis of Southwest Electric Power Company's annual formulary wholesale rate adjustments

- Ongoing review/analysis of Southwest Power Administration's annual Robert D. Willis Power Repayment Studies and resulting rates.

H.E. Butt Grocery Company
Electricity procurement assistance and analysis of supply alternatives

Martin Marietta Materials
Electricity procurement assistance and analysis of supply alternatives

C.H. Guenther & Son, Inc.
Electricity procurement assistance and analysis of supply alternatives

Van Tuyl, Inc.
Electricity procurement assistance and analysis of supply alternatives