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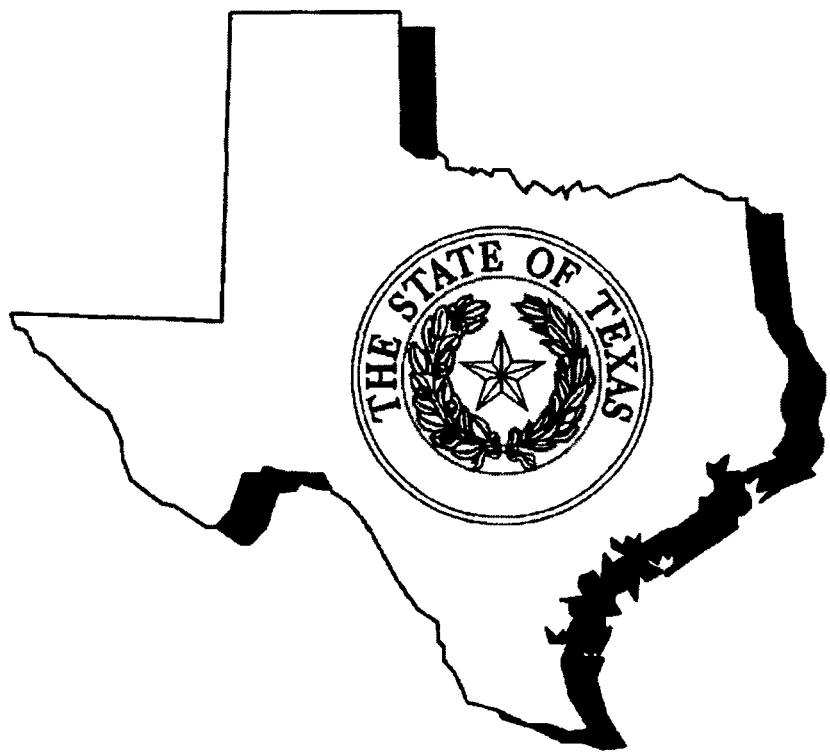
APPLICATION OF DOUBLE DIAMOND UTILITY COMPANY, INC. FOR A RATE/TARIFF CHANGE	**§**	**BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS**



DIRECT TESTIMONY OF
EMILY SEARS
WATER UTILITY REGULATION
PUBLIC UTILITY COMMISSION OF TEXAS
SEPTEMBER 22, 2017

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I. INTRODUCTION OF WITNESS

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. Emily Sears, Public Utility Commission of Texas, 1701 N. Congress Avenue, Austin, Texas 78711-3326.

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

A. I have been employed by the Public Utility Commission of Texas (Commission) since January 1, 2015 as a Financial Analyst in the Water Utility Regulation Division.

Q. WHAT ARE YOUR PRINCIPAL RESPONSIBILITIES AT THE COMMISSION?

A. I am responsible for reviewing certificate of convenience and necessity (CCN) applications and amendments, sale/transfer/merger applications, tariff/rate change applications, stock transfers, financial reviews, managerial reviews, and rate filings. I am also responsible for preparing testimony and exhibits for contested case matters involving investor-owned, non-profit and governmental water and sewer retail public utilities, wholesale matters, and assisting with settlement negotiations.

Q. PLEASE STATE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A. I have provided a summary of my educational background and professional experience in Attachment ES-1 to my direct testimony.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION OR THE STATE OFFICE OF ADMINISTRATIVE HEARINGS (SOAH)?

A. Yes. Attachment ES-2 provides a summary of the cases in which I have testified or submitted testimony.

II. PURPOSE AND SCOPE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my testimony is to present a recommendation for the revenue requirements for Double Diamond Utility Company, Inc., (DDU) White Bluff Subdivision (White Bluff). I will also present a recommendation for capital structure, cost of debt, cost of equity, and overall rate of return for both White Bluff and The Cliffs Subdivision (The Cliffs). Commission Staff Witness Jonathan Ramirez will present the revenue requirements for The Cliffs.

Q. WHAT IS THE SCOPE OF YOUR REVIEW?

A. I reviewed the application, testimonies, and replies to requests for information of DDU, with respect to expenses, taxes, capital structure, cost of debt, cost of equity, and overall revenue requirement and rate of return. These recommendations pertain to the following issues from the Commission's preliminary order for this case:

1. What is the appropriate methodology to determine just and reasonable rates in this docket?

3. What revenue requirement will give the utility a reasonable opportunity to earn a reasonable return on its invested capital used and useful in providing service to the public in excess of its reasonable and necessary operating expenses while preserving its financial integrity?

5. What is the reasonable and necessary cost of providing water service?

6. What adjustments, if any, should be made to the utility's proposed test-year data?

7. What is the appropriate debt-to-equity capital structure of the utility?

8. What is the appropriate overall rate of return, return on equity, and cost of debt for the utility?

10. What is the appropriate weighted average cost of capital?

13. Does the utility have any debt? If so, what is the cost of that debt?

14. What is the reasonable and necessary working capital allowance for the utility?

19. What are the utility's reasonable and necessary operations and maintenance expense?

20. What are the utility's reasonable and necessary administrative and general expenses?

27. What is the reasonable and necessary amount, if any, for assessment and taxes other than federal income tax?

28. What is the reasonable and necessary amount for the utility's federal income tax expense?

    a. Is the utility a member of an affiliated group that is eligible to file a consolidated income tax return?

b. If so, have income taxes been computed as though a consolidated return had been filed and the utility realized its fair share of the savings resulting from the consolidated return?

c. If not, has the utility demonstrated that I was reasonable not to consolidate returns?

34. Is the utility seeking rates for both water and sewer service? If so, is the revenue requirement properly allocated between water and sewer services?

III. REVENUE REQUIREMENT FOR WHITE BLUFF

Q. WHAT IS THE APPROPRIATE METHODOLOGY TO DETERMINE JUST AND REASONABLE RATES IN THIS DOCKET?

A. The revenue requirement formula used in base rate cases is as follows:

RR = E + D + T + (RB x ROR)

Where:

RR – Revenue Requirement

E = Operating Expense

D = Depreciation Expense

T = Taxes

RB = Rate Base

ROR = Overall Rate of Return

Q. WHAT IS THE STANDARD USED BY STAFF CONCERNING THE REASONABLENESS OF COSTS REQUESTED IN THIS PROCEEDING?

A. The standard set forth in Texas Water Code § 13.183(a)(TWC) states:

> In fixing the rates for water and sewer services, the regulatory authority shall fix its overall revenues at a level that will:
> (1) permit the utility a reasonable opportunity to earn a reasonable return on its invested capital used and useful in rendering service to the public over and above its reasonable and necessary operating expenses; and
> (2) preserve the financial integrity of the utility.

Also, 16 Tex. Admin. Code § 24.31 (TAC) states in relevant part:

> (a) **Components of cost of service.** Rates are based upon a utility's cost of rendering service. The two components of cost of service are allowable expenses and return on invested capital.
> (b) **Allowable Expenses.** Only those expenses that are reasonable and necessary to provide service to the ratepayers may be included in allowable expenses. In computing a utility's allowable expenses, only the utility's test year expenses as adjusted for known and measurable changes may be considered.
> (c) **Return on invested capital.** The return on invested capital is the rate of return times invested capital.

Q. WHAT REVENUE REQUIREMENT IS WHITE BLUFF REQUESTING IN THIS CASE?

A. Per DDU's amended application, submitted on April 26, 2017, DDU is requesting a revenue requirement of $573,924 = $294,823 + $110,077 + $82,549 + ($1,026,569 x 8.42%) for its public water system. White Bluff is also requesting a revenue requirement of $576,704 = $277,820 + $84,700 + $85,460 + ($1,527,949 x 8.42%) for its sewer system.

Q. WHAT REVENUE REQUIREMENT IS STAFF RECOMMENDING FOR WHITE BLUFF IN THIS CASE?

A. Staff recommends a revenue requirement for White Bluff of $437,933 = $203,353 + $111,209 + $73,966 + ($709,829 x 6.96%) for water, and $380,576 = $120,128 + $83,888 + $77,120 + ($1,428,731 x 6.96%) for sewer.[1]

Q. WHAT IS WHITE BLUFF'S CLAIM FOR OTHER REVENUES?

A. White Bluff claimed other revenues of $5,163 for water, and $4,574 for sewer.

Q. WHAT IS THE BASIS FOR WHITE BLUFF'S CLAIM?

A. White Bluff included late fees, reconnect fees, and other fees.[2]

Q. WHAT AMOUNT DOES STAFF RECOMMEND FOR OTHER REVENUES FOR WATER?

A. Staff recommends an addition of $3,600 for water, and no adjustment for sewer.

Q. WHAT IS THE BASIS FOR THIS ADDITION FOR WATER?

A. In White Bluff's general ledger, there were other revenues of $300 monthly from Nextlink.[3] Typically, income received from an internet/phone company is from allowing a company such as Nextlink to install cell phone antennaes on top of the water towers. Since this is an

[1] Attachment ES-3, Staff Schedule I.
[2] Workpapers of Emily Sears, page 1 and 2.
[3] Workpapers of Emily Sears, page 3.

additional source of revenues with no offsetting expense, Staff has added it to the water other revenues.

Q. WHAT ARE RESULTING REVENUE REQUIREMENTS USED TO SET RATES?

A. With the removal of the other revenues from the revenue requirement, the revenue requirement used to set rates is $429,170 for water, and $376,002 for sewer.

IV. EXPENSE ADJUSTMENT SUMMARY FOR WHITE BLUFF

Q. PLEASE SUMMARIZE STAFF'S RECOMMENDED ADJUSTMENTS TO OPERATION AND MAINTENANCE EXPENSES FOR WHITE BLUFF.

A. Staff recommends adjusting the following for water:[4]

Account Name	Company Request	Staff's Adjustment	Staff's Recommended Allowance
Other Volume Related Expenses	$8,289	($830)	$7,459
Total Employee Labor	$80,520	($3,380)	$77,140
Total Materials	$2,913	($600)	$2,313
Total Contract Work	$3,298	($723)	$2,575
Total Transportation	$13,313	($10,209)	$3,104
Total Other Plant Maintenance	$41,055	($19,211)	$21,844
Total Insurance	$9,668	($4,815)	$4,853
Total Regulatory Expense	$24,476	($23,291)	$1,185
Total Miscellaneous	$29,261	($28,400)	$861
Total O&M Adjustments		**($91,459)**	

[4] Attachment ES-3, Staff Schedule II.

Staff recommends adjusting the following for sewer:[5]

Account Name	Company Request	Staff's Adjustment	Staff's Recommended Allowance
Other Volume Related Expenses	$2,409	($530)	$1,879
Employee Labor	$91,440	($40,300)	$51,140
Total Materials	$2,581	($370)	$2,211
Total Contract Work	$2,922	($212)	$2,710
Total Transportation	$11,795	($6,300)	$5,495
Total Other Plant Maintenance	$100,955	($76,630)	$24,325
Professional Services	$3,937	($2,907)	$1,030
Total Insurance	$8,566	($1,500)	$7,066
Regulatory Expense	$7,049	($2,519)	$4,530
Total Miscellaneous	$26,424	($26,424)	$0
Total O&M Adjustments		**($157,692)**	

V. EXPENSE ADJUSTMENTS

A. OTHER VOLUME RELATED EXPENSES

Q. WHAT IS WHITE BLUFF'S OTHER VOLUME RELATED EXPENSES CLAIM?

A. White Bluff is claiming volume related expenses of $8,289 for water, and $2,409 for sewer.

[5] Attachment ES-4, Staff Schedule II.

Q. WHAT IS WHITE BLUFF'S BASIS FOR THE OTHER VOLUME RELATED EXPENSES CLAIM?

A. White Bluff includes in its other volume related expenses claim repair and maintenance chemicals, and repair and maintenance equipment.[6]

Q. WHAT DOES STAFF RECOMMEND FOR OTHER VOLUME RELATED EXPENSES?

A. Staff recommends removing $830 from water, and $530 from sewer.

Q. WHAT IS STAFF'S BASIS FOR REMOVING THESE AMOUNTS?

A. Staff recommends removing these amounts as they are not related to volumes treated. Rather, they belong in the Other Plant Maintenance account, as they are related to vehicles, and other plant maintenance.[7] Therefore, Staff reclassified these amounts from the Other Volume Related Expense account to Other Plant Maintenance Account.

B. EMPLOYEE LABOR

Q. WHAT IS WHITE BLUFF'S EMPLOYEE LABOR CLAIM?

A. White Bluff is claiming employee labor of $80,520 for water, and $91,440 for sewer.

[6] Workpapers of Emily Sears, pages 1 and 2.
[7] Workpapers of Emily Sears, page 4.

Q. WHAT IS WHITE BLUFF'S BASIS FOR THE EMPLOYEE LABOR CLAIM?

A. White Bluff provided documentation of the employee's salaries.[8]

Q. WHAT DOES STAFF RECOMMEND FOR EMPLOYEE LABOR?

A. Staff recommends removing $3,380 from the water cost of service, and $40,300 from the sewer cost of service.

Q. WHAT IS THE BASIS FOR REMOVING THESE AMOUNTS?

A. First, both Jerry Whitworth ($10,400) and Danny Keeton ($11,440) are backhoe operators. White Bluff's response to Staff RFI 1-1 stated that Mr. Whitworth and Mr. Keeton's tasks include installing water and sewer taps, excavation for installing taps, and clean-up of work site after the installations.[9] In DDU witness Randy Gracy's Exhibit DDU-3E, the water tap fee includes labor for two men and an expense for a backhoe. Therefore, since Mr. Whitworth and Mr. Keeton's labor is paid for through the tap fees, it should be removed from the cost of service. To include it in the cost of service would allow White Bluff to double collect for these two employees' labor costs.

Second, Staff has adjusted the allocation of labor between the water and sewer utilities.[10] For example, Clovis C. Wilhelm only has a wastewater operator license. In response to Staff RFI 1-3, White Bluff lists job duties for Mr. Wilhelm only related to the wastewater treatment

[8] Workpapers of Emily Sears, page 5.
[9] Workpapers of Emily Sears, page 6.
[10] Attachment ES-5, page 1.

plant. However, White Bluff allocated his time to water and wastewater.[11] Staff removed $5,460 from water and allocated it to the wastewater treatment plant, for a total salary in the sewer cost of service of $21,840. Staff has allocated 100% of Jody Bledsoe's time to water, as he only has a water operator license, as well as Dwayne Cota, as he only has an expired water operator license. Staff removed $13,000 from the sewer cost of service, and allocated it to water, for a total salary of $26,000 for Mr. Bledsoe. Staff removed $10,920 from the sewer cost of service, and allocated it to water, for a total salary of $21,840 for Mr. Cota.

Third, in response to Staff RFI 1-6, and RFI 1-8, White Bluff states it is not requesting overtime labor costs in its application.[12] Therefore, no overtime hours were included in Staff's analysis.

C. MATERIALS

Q. WHAT IS WHITE BLUFF'S MATERIALS EXPENSE CLAIM?

A. White Bluff is claiming $2,913 for water and $2,581 for sewer.

Q. WHAT IS THE BASIS FOR WHITE BLUFF'S MATERIALS EXPENSE CLAIM?

A. White Bluff includes Cleaning Supplies, Smallwares/Tools, Uniforms, Safety Supplies, Other Supplies, and Equipment Fuel in its Materials Expense claim.[13]

[11] Workpapers of Emily Sears, page 7.
[12] Workpapers of Emily Sears, page 8.
[13] Workpapers of Emily Sears, page 1 and 2.

Q. WHAT DOES STAFF RECOMMEND FOR MATERIALS EXPENSE?

A. Staff recommends removing $600 from water, and $370 from sewer.

Q. WHAT IS THE BASIS FOR STAFF'S REMOVAL OF THESE AMOUNTS?

A. This amount includes a normalization of the expense for jackets included in the uniform expense. The purchase of uniform jackets is not a yearly expense, and was therefore normalized to better reflect the annual cost. Staff recommends removing $135 from water, and $119 from sewer.

Staff also removed amounts for radios that were purchased by the golf course, which were included in the smallware/tools expense. Staff reviewed invoices for the radios, which showed they were shipped to the golf course superintendent. Also included was an email from the shipper which states the radios were requested by Danny Holt, who is not listed on the list of employees at the utility.[14] Therefore, Staff removed the radio expense. Staff recommends removing $465 from water, and $251 from sewer.

D. CONTRACT WORK

Q. WHAT IS WHITE BLUFF'S CONTRACT WORK CLAIM?

A. White Bluff is claiming contract work of $3,298 for water, and $2,922 for sewer.

[14] Workpapers of Emily Sears, pages 12-14.

Q. WHAT IS WHITE BLUFF'S BASIS FOR THE CONTRACT WORK CLAIM?

A. White Bluff included customer service labor, mobile phones/pagers, meals and entertainment, and other contract service expenses in the contract work claim.[15]

Q. WHAT DOES STAFF RECOMMEND FOR CONTRACT WORK?

A. Staff recommends removing $723 from the water cost of service, and $212 from the sewer cost of service.

Q. WHAT IS THE BASIS FOR REMOVING THESE AMOUNTS?

A. In response to Staff RFI 1-13, White Bluff indicated that it allows certain employees a phone allowance. However, White Bluff does not know the amount of personal use of the phone.[16] Therefore, Staff reduced the amount by 50% ($450 for 12 months), and allocated it between water and sewer ($239 and $212 for sewer). Staff also has removed the Trans-Turf crew amount included in other contract services in the amount of $484. In response to Staff RFI 1-22, White Bluff did not provide an invoice or contract for the Trans-Turf Crew's services.[17] Additionally, White Bluff claims it is for mowing; however, they only allocated it to the water system.[18] If this expense was for mowing, it would follow that it would be allocated to sewer as well. Therefore, Staff removed this amount from the cost of service.

[15] Workpapers of Emily Sears, page 1 and 2.
[16] Workpapers of Emily Sears, page 15.
[17] Workpapers of Emily Sears, page 16.
[18] Workpapers of Emily Sears, Page 2.

E. TRANSPORTATION

Q. WHAT IS WHITE BLUFF'S TRANSPORTATION CLAIM?

A. White Bluff is claiming $13,313 for water, and $11,795 for sewer.

Q. WHAT IS WHITE BLUFF'S BASIS FOR ITS TRANSPORTATION CLAIM?

A. White Bluff includes vehicle expense, vehicle fuel expense, and vehicle lease in its transportation claim.[19]

Q. WHAT DOES STAFF RECOMMEND FOR TRANSPORTATION EXPENSE?

A. Staff recommends removing $10,209 from water, and $6,300 from sewer.

Q. WHAT IS THE BASIS FOR STAFF'S REMOVAL OF THESE AMOUNTS?

A. In response to Staff RFI 1-14, White Bluff provided invoices for its vehicle fuel expense.[20] There were several vehicle fuel expense journal entries that were not supported by vehicle logs and receipts/invoices. Therefore, Staff removed these amounts from the cost of service, totaling $6,447 for water, and 3,388 for sewer.

Staff also removed the costs of purchased tool boxes included in the vehicle expenses, as it is not a recurring expense. The amount of the toolbox, including delivery and side mount is $850. This amount was only removed from water, as it was not allocated to sewer.[21] Expenses included in the cost of service must be annually recurring expenses, as this is the

[19] Workpapers of Emily Sears, page 1 and 2.
[20] Workpapers of Emily Sears, pages 17-20. Items highlighted/checked have receipts/invoices.
[21] Workpapers of Emily Sears, pages 21 and 22.

amount the utility will collect annually from rates.

Finally, Staff removed the vehicle lease expense ($2,912 each for water and sewer), as White Bluff included the vehicle in its depreciation schedule, thereby double counting the vehicle cost.[22]

F. OTHER PLANT MAINTENANCE

Q. WHAT IS WHITE BLUFF'S CLAIM FOR OTHER PLANT MAINTENANCE?

A. White Bluff is claiming $41,055 for water and $100,955 for sewer.

Q. WHAT IS WHITE BLUFF'S BASIS FOR ITS OTHER PLANT MAINTENANCE CLAIM?

A. White Bluff is including in its other plant maintenance claim R&M Building, R&M Water Plant, R&M Sewer Plant, R&M Distribution Lines, and R&M Collection Lines.[23]

Q. WHAT IS STAFF'S RECOMMENDATION FOR OTHER PLANT MAINTENANCE?

A. Staff recommends reclassifying $19,211 from other plant maintenance to the depreciation schedule for water and $76,630 for sewer. Staff reclassified items not included in the depreciation schedule, and removed items already included in the depreciation schedule.

[22] Workpapers of Emily Sears, pages 23-24.
[23] Workpapers of Emily Sears, page 1 and 2.

Q. WHAT IS THE BASIS FOR STAFF'S MOVING THESE AMOUNTS?

A. Staff reviewed the invoices submitted by the DDU.[24] The amounts moved included items such as booster pumps, well meters, electric panels, grinder pumps, etc. Since these items have lives longer than one year, Staff recommends they be reclassified to the depreciation schedule. For water, staff also removed the chlorine gas cylinder, as the gas cylinder expenses were included in the Chemical Expense.[25]

G. PROFESSIONAL SERVICES

Q. WHAT IS WHITE BLUFF'S CLAIM FOR PROFESSIONAL SERVICES?

A. White Bluff is claiming a professional services expense of $3,937 for sewer.

Q. WHAT IS WHITE BLUFF'S BASIS FOR ITS PROFESSIONAL SERVICES CLAIM?

A. White Bluff is including in its professional services claim the amounts related CCN map revisions for application and permit renewal with the Texas Commission on Environmental Quality.[26]

Q. WHAT IS STAFF'S RECOMMENDATION FOR PROFESSIONAL SERVICES?

A. Staff recommends removing $2,907 for sewer.

[24] Workpapers of Emily Sears, pages 25-79.
[25] Workpapers of Emily Sears, page 27.
[26] Workpapers of Emily Sears, page 80.

Q. WHAT IS STAFF'S BASIS FOR REMOVING THIS AMOUNT?

A. Staff is removing $2,907, described as an amount for a CCN map amendment, which is not a recurring expense. A wastewater permit is required to be renewed only every three years; therefore, this cost should be normalized over three years. The total amount shown on Consulting Environmental Engineers, Inc.'s proposal for the wastewater permit renewal was $3,090.[27] Therefore, Staff allowed $1,030 per year in the cost of service as a normalized amount over three years for the wastewater permit renewal.

H. INSURANCE

Q. WHAT IS WHITE BLUFF'S INSURANCE CLAIM?

A. White Bluff is claiming an insurance expense of $9,668 for water, and $8,566 for sewer.

Q. WHAT IS WHITE BLUFF'S BASIS FOR THE DDU'S INSURANCE CLAIM?

A. White Bluff provided the general ledger for insurance expense including TX Non-Subscriber, Blanket coverage property, Corporate General Liability, Corporate Business Auto, Workers Comp Insurance, and an Umbrella, Auto, Crime, Spa & Ski insurance.[28]

Q. WHAT DOES STAFF RECOMMEND FOR INSURANCE?

A. Staff recommends removing $4,815 from the water cost of service, and $1,500 from the sewer cost of service.

[27] Workpapers of Emily Sears, page 82.
[28] Workpapers of Emily Sears, page 1 and 2.

Q. WHAT IS THE BASIS FOR REMOVING THESE AMOUNTS?

A. First, in response to Staff RFI 1-12, DDU described the Texas Non-subscriber insurance as Worker's Compensation.[29] Also, in DDU's submission of the insurance coverages the only other workers Compensation (other than Texas Non-subscriber insurance) is for PA & NY Workers Compensation.[30] Since Texas employees are covered under the Texas Non-subscriber insurance, the Workers Comp Insurance based on Head Count would be double coverage for employees in Texas.[31] This would not be a benefit to utility customers, and therefore, Staff has removed the amounts related to Workers Comp Insurance based on Head Count. These amounts are $1,444 for water and $373 for sewer.

Second, Staff removed the Umbrella Auto, Crime, and Spa & Ski insurance.[32] An umbrella policy is coverage in addition to your current policy coverage, and therefore, goes over and above the associated individual policy limits. Also, one umbrella policy can cover more than one underlying policy (Auto and Crime and Spa & Ski). White Bluff has Auto and Crime Insurance policies included in the cost of service. Since the umbrella policy includes Spa & Ski Insurance, which cannot be separated out, Staff has removed the umbrella policy amount. These amounts are $3,371 for water, and $1,127 for sewer.

[29] Workpapers of Emily Sears, page 83.
[30] Workpapers of Emily Sears, pages 84-96.
[31] Workpapers of Emily Sears, pages 97-99.
[32] Workpapers of Emily Sears, page 96-99.

I. REGULATORY EXPENSE

Q. WHAT IS WHITE BLUFF'S CLAIM FOR REGULATORY EXPENSE?

A. White Bluff is claiming regulatory expenses of $24,476 for water, and $7,049 for sewer.

Q. WHAT IS WHITE BLUFF'S BASIS FOR ITS REGULATORY EXPENSE CLAIM?

A. White Bluff's claim includes regulatory water fees, water tests, and sewer tests.[33]

Q. WHAT IS STAFF'S RECOMMENDATION FOR REGULATORY EXPENSES?

A. Staff recommends removing $23,291 for water, and $2,519 for sewer.

Q. WHAT IS STAFF'S BASIS FOR REMOVING THESE AMOUNTS?

A. Staff's recommendation removes the regulatory water fees for groundwater conservation, as these amounts should be included in the tariff as a pass-through. Staff recommends removing $22,047 from water, and $0 from sewer, as sewer is not assessed a fee.

Staff's recommendation also normalizes water test expenses for those water tests that are only required every 3 years.[34] The amount Staff recommends removing is $1,244 for water, and $2,519 for sewer.

[33] Workpapers of Emily Sears, page 1 and 2.
[34] Workpapers of Emily Sears, pages 100-105.

J. MISCELLANEOUS

Q. WHAT IS WHITE BLUFF'S CLAIM FOR MISCELLANEOUS EXPENSES?

A. White Bluff is claiming miscellaneous expenses of $29,261 for water and $26,424 for sewer.

Q. WHAT IS WHITE BLUFF'S BASIS FOR MISCELLANEOUS EXPENSES?

A. White Bluff's miscellaneous expenses included equipment leases, training and education, sewer tap expense, allocated resort overhead, and "allocated resort G&A."[35]

Q. WHAT IS STAFF'S RECOMMENDATION FOR MISCELLANEOUS EXPENSE?

A. Staff recommends removing the allocation for both resort overhead and resort G&A, sewer tap expense, and equipment lease.

Q. WHAT IS THE BASIS FOR REMOVING THESE AMOUNTS?

A. In response to Staff RFI 1-31, DDU claims that the utility uses resort resources.[36] Documents produced to support this claim include expenses such as an allocation for the general manager and an office manager. DDU further allocated resources such as commission/bonuses, employee compensation, payroll burden, electricity, water and sewer, uniforms, small tools, cleaning supplies, etc. [37] DDU, however, has already included these exact expenses in its own cost of service. This means that DDU is allocating resort expenses, which the utility does not use, to the utility. One such expense that is clearly not utilized by the utility to

[35] Workpapers of Emily Sears, page 1 and 2.
[36] Workpapers of Emily Sears, page 106.
[37] Workpapers of Emily Sears, pages 107-109.

provide water and sewer service is commissions/bonuses for resort employees. Furthermore, those expenses that are related to the utility service are already included in the cost of service as specific to the utility. Therefore, Staff has removed the allocated resort overhead and G&A expenses. The amounts removed for allocated overhead are $7,410 for water, and $5,366 for sewer. The amounts removed for allocated G&A expenses are $970 for water and $702 for sewer.

The sewer tap expense was removed as the cost of the sewer taps are paid for through the sewer tap fee, in the amount of $500.

Finally, in response to Staff RFI 1-17, White Bluff stated that there are no lease agreements for either the "Automatic meter reading" or the "50,000 gallon WW plant" included in the equipment lease expense.[38] Because no lease agreements were provided, Staff has removed these amounts from the expenses. If these items are shown to be owned by the utility, Staff would recommend including them in rate base. These amounts are $19,728 for water, and $20,148 for sewer.[39]

[38] Workpapers of Emily Sears, page 110.
[39] Workpapers of Emily Sears, page 111-112.

K. CASH WORKING CAPITAL

Q. DOES STAFF AGREE WITH THE METHODOLOGY WHITE BLUFF USES TO CALCULATE CASH WORKING CAPITAL (CWC)?

A. Yes, Staff agrees with the use of 1/12 of the operation and maintenance expense.

Q. DO STAFF'S RECOMMENDED ADJUSTMENTS TO THE EXPENSES CHANGE THE AMOUNT OF CWC?

A. Yes. Staff's total expense adjustments reduce CWC by $7,622 ($24,568 – ((1/12)*203,353)) for water, and $13,141 ($23,152 – ((1/12)*120,128)) for sewer.

L. TAXES

Q. DO STAFF'S RECOMMENDATIONS CHANGE THE AMOUNT OF TAXES IN THIS CASE?

A. Yes. Both other taxes and federal income taxes are adjusted based on the flow-through calculations due to Staff's recommended changes to the cost of service.

Q. WHAT IS THE REDUCTION TO OTHER TAXES?

A. Other taxes were reduced by $2,148 for water, and $5,025 for sewer. Staff also adjusted other taxes for the removal of the sales tax and title tax for the 2014 Ford, as it is included in the depreciation schedule.[40]

[40] Workpapers of Emily Sears, page 113.

Q. WHAT IS THE REDUCTION TO FEDERAL INCOME TAXES?

A. Federal income taxes were reduced by $6,435 for water, and reduced by $3,315 for sewer.

VI. RATE OF RETURN FOR DDU (WHITE BLUFF AND THE CLIFFS)

Q. PLEASE DEFINE THE TERM "RATE OF RETURN."

A. Rate of return generally is the amount of revenue an investment generates (in the form of net income), usually expressed as a percentage of the amount of capital invested, over a given period of time. Rate of return is one of the components of the revenue requirement formula.

Q. WHAT IS THE STANDARD USED CONCERNING THE REASONABLENESS OF RETURN REQUESTED IN THIS PROCEEDING?

A. The standard set forth in 16 Tex. Admin. Code § 24.31(c)(1) states:

> The Commission shall allow each utility a reasonable opportunity to earn a reasonable rate of return...and shall fix the rate of return in accordance with the following principles. The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties.

Q. WHAT CONSTITUTES A FAIR AND REASONABLE OVERALL RATE OF RETURN?

A. A fair and reasonable overall rate of return is one which will allow the utility the opportunity to recover those costs prudently incurred by all classes of capital used to finance the rate base during the prospective period in which its rates will be in effect. The *Bluefield Water Works & Improvements Co. v. Public Service Comm'n of West Virginia*, 292 U.S. 679, 692-93

(1923), and the *FPC v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944) cases set forth the principles that are generally accepted by regulators throughout the country as the appropriate criteria for measuring a fair rate of return:

1) A utility is entitled to a return similar to that being earned by other enterprises with corresponding risks and uncertainties, but not as high as those earned by highly profitable or speculative ventures;
2) A utility is entitled to a return level reasonably sufficient to assure financial soundness;
3) A utility is entitled to a return sufficient to maintain and support its credit and raise necessary capital;
4) A fair return can change (increase or decrease) along with economic conditions and capital markets.

Q. HOW IS THE RATE OF RETURN CALCULATED?

A. The overall rate of return in this rate proceeding is calculated using the weighted average cost of capital method. To calculate the weighted average cost of capital, the utility's capital structure must first be determined by calculating the percentage of each capitalization component which has financed the rate base to total capital. The capital components consist of long-term debt and common equity. Next, the effective cost rate of each capital structure component must be determined. The cost rate of debt is typically fixed, and can be computed accurately. The cost rate of common equity is not fixed, and it is more difficult to measure. Next, each capital structure component percentage is multiplied by its corresponding effective cost rate to determine the weighted capital component cost rate.

Lastly, the sum of the weighted cost rates produces the overall rate of return. This overall rate of return is multiplied by the rate base to determine the return portion of a utility's revenue requirement.

A. DDU POSITION

Q. PLEASE SUMMARIZE DDU RATE OF RETURN REQUEST IN THIS CASE.

A. Based on the rate/tariff change application, DDU requested the following rate of return:[41]

Type of Capital	Ratios	Cost Rate	Weighted Cost Rate
Long-Term Debt	55.84 %	6.00 %	3.35 %
Common Equity	44.16 %	11.49 %	5.07 %
Total	100.00 %		8.42 %

B. STAFF POSITION

Q. PLEASE SUMMARIZE STAFF'S RECOMMENDATION IN THIS PROCEEDING.

A. Staff recommends the following rate of return for DDU:[42]

Type of Capital	Ratios	Cost Rate	Weighted Cost Rate
Long-Term Debt	47.27 %	4.91 %	2.32 %
Common Equity	52.73 %	8.79 %	4.64 %
Total	100.00 %		6.96 %

[41] Application, Schedule III-1.
[42] Attachment ES-6, page 1 of 2.

C. BAROMETER (PROXY) GROUP

Q. WHAT IS A BAROMETER GROUP, AS USED IN BASE RATE CASES?

A. A barometer group, also called a proxy group, is a group of companies which act as a benchmark for determining the subject utility's rate of return in a base rate case.

Q. WHAT ARE THE REASONS FOR USING A BAROMETER GROUP?

A. Many public utility companies are not publicly traded, and therefore lack specific market data. A barometer group provides that industry specific market data. Furthermore, water utilities in a barometer group have shared common characteristics of regulated water distribution utilities, and are well suited to comparison among utility companies. This comparative method is a standard approach in utility rate cases.

Q. ARE THERE ADDITIONAL REASONS FOR USING A BAROMETER GROUP?

A. Yes. A barometer group is typically utilized since the use of data exclusively from one company may be less reliable than using a barometer group. The lower reliability occurs because the data for one company may be subject to events which can cause short-term anomalies in the marketplace. The rate of return on common equity for a single company could become distorted in these particular circumstances, and would therefore not be representative of similarly situated companies. The use of a barometer group has the effect of smoothing out potential anomalies associated with a single company.

A barometer group cost of equity is also used as a benchmark to satisfy the long established guideline of utility regulation that seeks to provide the subject utility with the opportunity to earn a return equal to that of enterprises with similar risk profiles.

Q. WHAT CRITERIA DID YOU USE IN SELECTING YOUR BAROMETER GROUP COMPANIES?

A. As in this docket, I generally use the following criteria when selecting a barometer group: 1) 50% or more of the company's revenues must be generated from the water utility distribution industry; 2) the company's stock must be publicly traded; 3) investment information for the company must be available from more than one source; and 4) the company must not be currently involved/targeted in an announced merger or acquisition.

Q. DID DDU USE A BAROMETER GROUP IN ITS ANALYSIS?

A. No.

Q. WHAT BAROMETER GROUP DID YOU USE IN YOUR ANALYSIS?

A. I selected American States Water Company, American Water Works, Aqua America, California Water Service Group, Connecticut Water Service, Middlesex Water Company, SJW Corporation, and York Water.

D. CAPITAL STRUCTURE

Q. WHAT DOES CAPITAL STRUCTURE REPRESENT IN A RATE CASE?

A. Capital structure represents the forms of financing of long-term assets (rate base). The primary forms of financing employed by public utilities include debt and common equity.

Q. WHAT IS DDU'S CLAIMED CAPITAL STRUCTURE?

A. DDU is claiming its parent company, Double Diamond Delaware's (DDD), capital structure of 55.84% debt and 44.16% equity should be used.

Q. WHAT IS THE BASIS FOR DDU'S CLAIMED CAPITAL STRUCTURE?

A. According to DDU witness Jay Joyce, "DDU depends completely on its parent company for its capital financing needs."[43] Therefore, DDU is requesting its parent company's actual capital structure of 55.84% debt, and 44.16% equity.

Q. WHAT IS YOUR RECOMMENDATION REGARDING DDU'S CAPITAL STRUCTURE?

A. I recommend using a hypothetical capital structure of 47.27% debt and 52.73% equity.

Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION TO USE A HYPOTHETICAL CAPITAL STRUCTURE?

A. A capital structure should be representative of the industry norm, and be an efficient use of

[43] Direct Testimony of Jay Joyce, page 12, line 21 Page 13, line 1.

capital. The use of a capital structure that is outside the range of the industry's capital structure may result in an overstated overall rate of return.

The current five-year average capital structure of the barometer group (the industry norm) is 47.27% debt and 52.73% equity.[44] In this case, DDD's actual capital structure is 55.84% debt and 44.16% equity. This is not representative of current capital structures among water utility distribution systems and is an inefficient use of capital. The "optimal" capital structure is the one which minimizes the overall cost of capital, which DDU's claimed capital structure does not.

Therefore, a hypothetical capital structure based upon an industry average should be used for ratemaking purposes.

Q. WHY DO YOU USE A FIVE-YEAR AVERAGE?

A. I used a five-year average because capital structures tend to fluctuate over time. Using a five-year average can give a better idea of the central tendency of a capital structure. In theory there is an "optimal" capital structure. This "optimal" capital structure is one which minimizes the cost of capital for the utility. In the case of regulated utilities, the historic capital structures have included debt of approximately 45-55%, with an average of 50%. This could be considered a utility's "optimal" capital structure, and also the central tendency of a utility's capital structure over time.

[44] Attachment ES-6, page 2 of 2.

E. COST RATE OF LONG-TERM DEBT

Q. WHAT IS DDU'S CLAIMED COST RATE OF LONG-TERM DEBT?

A. DDU claims a cost rate of long-term debt of 6.00%.

Q. WHAT IS THE BASIS FOR DDU'S CLAIMED COST RATE OF LONG-TERM DEBT?

A. DDU's claim of 6.00% is "based on the portion of DDD's debt that is collateralized with utility assets based on a 2013 loan from First Financial Bank."[45]

Q. WHAT IS YOUR RECOMMENDATION REGARDING DDU'S COST RATE OF LONG-TERM DEBT?

A. Staff recommends using the actual weighted cost of debt of 4.91%.[46]

Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?

A. DDU included in its application a five-year note, which matured in April of 2017. First, shorter term loans have higher cost rates than longer term loans. Also, these systems were built in 1991. The loan taken out in 2013 could not have financed the assets in this case. Therefore, Staff recommends using the overall weighted average cost of debt of DDD as of December 31, 2015.

[45] Direct Testimony of Jay Joyce, page 14, lines 7-9.

[46] Attachment ES-7.

F. EQUITY ANALYSIS

Q. WHAT IS YOUR RECOMMENDATION FOR THE APPROPRIATE COST OF COMMON EQUITY IN THIS PROCEEDING?

A. Based upon my analysis, I recommend a cost of common equity of 8.79%.

Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?

A. I arrived at this equity return using the Discounted Cash Flow (DCF) method. My DCF analysis employed a spot dividend yield, a 52-week dividend yield, and earnings growth forecasts. I also used the Capital Asset Pricing Model (CAPM) method as a comparison to my DCF results.

1. DISCOUNTED CASH FLOW (DCF)

Q. WHAT IS THE THEORETICAL BASIS FOR THE DCF METHOD?

A. The theoretical basis for the DCF model is the "dividend discount model" of financial theory, which maintains that the value (price) of any security or commodity is the discounted present value of all future cash flows. The DCF model assumes that investors evaluate stocks using the classical economic framework, which maintains that the value of a financial asset is determined by its earning power, or its ability to generate future cash flows.

Q. PLEASE EXPLAIN YOUR DCF ANALYSIS.

A. My analysis employs the standard discrete DCF model as portrayed in the following formula:

$k = D_1/P_0 + g$

Where:

k = Cost of equity

D_1 = Dividend expected during the year

P_0 = Current price of the stock

g = Expected growth rate of dividends

When a forecast of D_1 is not available, D_0 (the current dividend) must be adjusted by ½ the expected growth rate[47] in order to account for changes in the dividend paid in period 1. In this case I have used a forecast of D_1.

Q. PLEASE EXPLAIN HOW YOU DEVELOPED THE DIVIDEND YIELDS USED IN YOUR DCF ANALYSIS.

A. A representative dividend yield must be calculated over a time frame that avoids the problems of short-term anomalies and "stale" data series. For purposes of my DCF analysis, the dividend yield calculation places equal emphasis on the most recent spot and 52-week-average dividend yield. The following table summarizes my dividend yield computations for the barometer group[48]:

[47] The adjustment of ½ the growth rate is used when the timing of the dividend increase is not known for certain. It could occur next month, or in the twelfth month. On average, it is safe to assume that the increase will occur half way through the prospective year. Therefore, an adjustment by ½ the expected growth rate is appropriate.

[48] Attachment ES-8.

Eight Company Barometer Group	Dividend Yield
Spot	2.16%
52-week average	2.26%
Average	2.21%

Q. WHAT INFORMATION DID YOU RELY UPON TO DETERMINE YOUR EXPECTED GROWTH RATE?

A. I have examined the five-year projected growth rate estimates from established forecasting entities including Value Line, Yahoo! Finance (Reuters), Zacks, and Morningstar.

Q. WHAT WERE THE RESULTS OF YOUR FORECASTED EARNINGS GROWTH RATES?

A. The expected growth rates for the eight-company barometer group are 5.32%, 7.41%, 6.27%, 8.07%, 5.50%, 5.60%, 8.50%, and 5.95%. The average of the eight companies' growth rate forecasts is 6.58%.[49]

Q. WHAT ARE THE RESULTS OF YOUR DCF ANALYSIS BASED ON YOUR RECOMMENDED DIVIDEND YIELDS AND GROWTH RATES?

A. Using a dividend yield of 2.21% and a growth rate of 6.58%, the DCF result is 8.79%.[50]

[49] Attachment ES-9.

[50] Attachment ES-10.

2. CAPITAL ASSET PRICING MODEL (CAPM)

Q. WHAT IS THE THEORETICAL BASIS FOR THE CAPM?

A. The CAPM describes the relationship between a stock's investment risk and its market rate of return. It identifies the rate of return investors expect so that it is comparable with returns of other stocks of similar risk. The method hypothesizes that the investor required return on a company's stock is equal to the return on a "risk-free" asset plus an equity premium reflecting that company's investment risk. In the CAPM, two types of risk are associated with a stock: (1) firm-specific risk (unsystematic risk) and (2) market risk (systematic risk), which is measured by a firm's beta. The CAPM only allows for investors to receive a return for bearing systematic risk. Unsystematic risk is assumed to be diversified away, and does not earn a return.

Q. EXPLAIN YOUR LIMITED USE OF THE CAPM MODEL.

A. I have included a CAPM analysis as a second method to confirm the results of the DCF analysis in this case.

Q. PLEASE EXPLAIN YOUR CAPM ANALYSIS.

A. My analysis employs the standard CAPM as portrayed in the following formula:

$$k = R_f + \beta(R_m - R_f)$$

Where:

k – Cost of equity

R_f – Risk-free Rate of Return (ROR)

R_m= Expected ROR on the overall stock

β – Beta measures the systematic risk of an asset

The CAPM formula above is actually a form of the more general risk premium approach and is based on modern portfolio theory.

Q. WHAT IS BETA, AS EMPLOYED IN YOUR USE OF THE STANDARD CAPM MODEL?

A. Beta is a measure of the systematic risk of a stock in relation to the rest of the stock market. A stock's beta is estimated by running a linear regression of a stock's return against the return of the overall stock market. The beta of a stock with an identical price pattern as the overall stock market will have a beta of 1. A stock with a price movement that is greater than the overall stock market will have a beta that is greater than 1, and would be described as having more investment risk than the market. Conversely, a stock with a price movement that is less than the overall stock market will have a beta of less than 1, and would be described as having less investment risk than the market.

Q. WHAT BETA DID YOU CHOOSE FOR YOUR CAPM ANALYSIS?

A. In estimating an equity cost rate for the barometer group, I used the average of the betas for the water utility companies as provided in the Value Line Investment Survey. The average beta for the barometer group is 0.71.[51]

[51] Attachment ES-11.

Q. WHAT RISK-FREE ROR HAVE YOU CHOSEN FOR YOUR CAPM ANALYSIS?

A. For my CAPM analysis, I have chosen to use the risk-free rate of return (R_f) from the historic yield on 10-year Treasury Bonds. While the yield on the short-term T-Bill is a more theoretically correct parameter to represent a risk-free yield, this yield can be extremely volatile. The volatility of short-term T-Bills is directly influenced by Federal Reserve policy. At the other extreme, the 30-year Treasury bond yield exhibits more stability, but is not risk-free. Long-term Treasury Bonds have substantial maturity risk associated with the market risk and the risk of unexpected inflation. Long-term treasuries normally offer higher yields to compensate investors for these risks. As a result, I chose to use the yield on the 10-year Treasury bond because it balances the shortcomings of the other two alternatives. For my historic analysis, I chose 4.26%, which is the average of the 10-year Treasury yield over time periods matching the historic market return. For my future analysis, I chose 2.81%, which is the average of the 10-year Treasury yields over 7 quarters and the 5-year projection.[52]

Q. PLEASE EXPLAIN HOW YOU DETERMINED THE RETURN ON THE OVERALL STOCK MARKET, AS EMPLOYED IN YOUR CAPM ANALYSIS.

A. To arrive at a representative expected return on the overall stock market, I surveyed three sources. Value Line expects its universe of 1,500 stocks to have an average yearly return of 9.99% over the next 3 to 5 years, based on a forecasted dividend yield of 2.20% and a

[52] Attachment ES-12.

yearly index appreciation of 35%. The Standard & Poors (S&P) 500 Index is expected to have an average yearly return of 12.13% over the next five years, based upon a forecasted dividend yield of 2.13% and an expected increase in the index of 10.00%. A historical return for the S&P Composite Index is routinely used as a benchmark for the expected return on the overall stock market. This component can vary widely depending on the historic period used.

Q. EXPLAIN THE RANGE OF EXPECTED RETURN ON THE OVERALL STOCK MARKET YOU CALCULATED USING THE HISTORIC RETURN FOR THE S&P COMPOSITE INDEX.

A. Using the geometric mean of historic returns, I calculated the following results[53]:

Time Period	Return
5 Years	14.66%
10 Years	6.94%
20 Years	7.68%
40 Years	11.06%
91 Years	10.04%
Average	10.08%

[53] Attachment ES-13.

Q. WHY HAVE YOU SELECTED THESE TIME PERIODS?

A. I have selected the above time periods to represent a variety of investor experiences and time horizons. The 91-year time period represents the longest measurable time period available for the S&P Composite Index. The 40 and 20-year time periods coincide with the average useful lives of a utility's assets. The ten-year time period corresponds with the Treasury Bond that I have employed. The five-year time period corresponds with time period for which the DCF growth rates are projected.

Q. WHAT ARE THE COST OF EQUITY RESULTS FROM YOUR FORECASTED AND HISTORIC CAPM ANALYSES?

A. The results of these two analyses are as follows[54]:

	CAPM cost of equity
Forecasted	8.69%
Historic	8.40%

Q. HOW DID YOU INCORPORATE THESE RESULTS INTO YOUR OVERALL COST OF EQUITY?

A. I have included the results of my CAPM analysis in my overall cost of equity calculation only as a comparison to my DCF result. The DCF model measures the cost of equity

[54] Attachment ES-14.

directly by measuring the discounted present value of future cash flows of the company. It is these cash flows that are actually being paid as dividends to shareholders.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes. I reserve the right to supplement this testimony during the course of the proceeding as new evidence is presented.

Emily Sears

Professional Experience

- **Public Utility Commission of Texas**
  Utility Rates Analyst
  Water Utilities Division
  January 2015 - Present
- **Commonwealth of Pennsylvania, Public Utility Commission**
  Fixed Utility Financial Analyst
  Bureau of Investigation and Enforcement
  May 2009 – December 2014
- **Commonwealth of Pennsylvania, Public Utility Commission**
  Fixed Utility Financial Analyst
  Bureau of Fixed Utility Services
  April 2008 – May 2009
- **Nationwide Insurance Company**
  Personal Lines Underwriting Screener
  October 2004 - May 2007

Education

- **University of Pittsburgh, College of Business Administration**
  Bachelors of Science in Business Administration
  Major – Finance
  August 2004
- **Annual Regulatory Studies Program: Camp NARUC**
  Week 1-Introduction to Regulation
  August 2008
- **Pennsylvania Public Utility Commission Rate Case Training**
  December 2008
- **Society of Utility and Regulatory Financial Analysts**
  Certified Rate of Return Analyst
  June 2010

Presentations

- **Pennsylvania Public Utility Commission Rate Case Training**
  Presented on Rate of Return/Return on Equity
  October 2012, September 2014
- **Public Utility Commission of Texas – Rate of Return Training**
  Presented on Rate of Return/Return on Equity
  August 2017 - Present

TESTIMONY SUBMITTED:

I have testified and/or submitted testimony in the following proceedings before the Pennsylvania Public Utility Commission:

- Duquesne Light Company, Docket No. M-2009-2093217
- West Penn Power Company d/b/a Allegheny Power, Docket No. M-2009-2093218
- Duquesne Light Company, Docket No. M-2009-2123948
- West Penn Power Company d/b/a Allegheny Power, Docket No. M-2009-2123951
- Utilities, Inc. – Westgate, Docket No. R-2009-2117389
- Utilities, Inc. of Pennsylvania, Docket No. R-2009-2117402
- PECO Energy Company - Electric Division, Docket No. P-2009-2143607
- PECO Energy Company – Gas Division, Docket No. P-2009-2143588
- Philadelphia Gas Works, Docket No. R-2009 2139884
- York Water Company, Docket No. R-2010-2157140
- City of Lancaster, Docket No. R-2010-2179103
- Columbia Gas of Pennsylvania, Inc., Docket No. R-2010-2215623
- CMV Sewage, Inc., Docket No. R 2011-2218562
- Pennsylvania American Water Company, Docket No. R-2011-2232243
- UGI Penn Natural Gas, Docket No. R-2011-2238943
- Aqua Pennsylvania, Inc., Docket No. R-2011-2267958
- Equitable Gas Company, LLC, Docket No. R-2012-2287044
- Peoples Natural Gas Company, LLC, Docket No. R-2012-2285985
- PPL Electric Utilities Corporation, Docket No. R-2012-2290597
- Columbia Gas of Pennsylvania, Inc., Docket No. R- 2012-2321748
- The City of Lancaster – Sewer Fund, Docket No. R-2012-2310366
- Columbia Gas of Pennsylvania, Inc., Docket No. R-2012-2321748 and M-2012-2323645
- UGI Penn Natural Gas, Docket No. R-2013-2361763
- City of DuBois – Bureau of Water, Docket No. R-2013-2350509
- Pennsylvania-American Water Company, Docket No. R-2013-2355276
- Duquesne Light Company, Docket No. R-2013-2372129
- Pike County Light and Power Company, Gas Division, Docket No. R-2013-2397353
- Pike County Light and Power Company, Electric Division, Docket No. R-2013-2397237
- UGI Penn Natural Gas, Docket No. R-2014-2420273
- Emporium Water Company, Docket No. R-2014-2402324
- City of Lancaster – Water Fund, Docket No. R-2014-2418872
- Peoples TWP, LLC, R-2014-2429613
- Peoples Natural Gas Company, LLC, R-2014-2429606

I have testified and/or submitted testimony in the following proceedings before the Public Utility Commission of Texas and the Texas State Office of Administrative Hearings:

- Custom Water Company, LLC., Docket No. 44236
- City of Austin water rate appeal, Docket No. 42857
- City of Austin wastewater rate appeal, Docket No. 42867 (consolidated with Dkt No. 42857)
- Consumers Water, Inc., Docket No. 43076
- Laguna Vista, LTD. and Laguna Tres, Inc., Docket No. 44046
- Quadvest, L.P., Docket No. 44809
- Monarch Utilities I, L.P., Docket No. 45570
- Corix Utilities (Texas), Inc., Docket No. 45418
- Double Diamond Properties Construction Co. dba Rock Creek, Docket No. 46247
- Liberty Utilities Corp., Docket No. 46256

SOAH DOCKET NO. 473-17-0117.WS
PUC DOCKET NO. 46245
COMPANY NAME Double Diamond Utility Company, Inc. - White Bluff Subdivision - Water
TEST YEAR END 31-Dec-15

Attachment ES-3 Staff Schedule I
Revenue Requirement

REVENUE REQUIREMENT	Test Year Total (a)	Company Adjustments To Test Year (b)	Company Requested Test Year Total (c)=(a)+(b)	Staff Adjustments To Company Request (d)	Staff Adjusted Total (e)=(c)+(d)
Operations and Maintenance	$ 294,397	$ 415	$ 294,812	$ (91,459)	$ 203,353
Depreciation and Amortization Expense	$ 78,805	$ 31,272	$ 110,077	$ 1,132	$ 111,209
Taxes Other Than Income	$ 70,146	$ (5,975)	$ 64,171	$ (2,148)	$ 62,023
Federal Income Taxes	$ -	$ 18,378	$ 18,378	$ (6,435)	$ 11,943
Return on Invested Capital	$ 30,106	$ 56,379	$ 86,485	$ (37,081)	$ 49,404
TOTAL	$ 473,454	$ 100,469	$ 573,924	$ (135,991)	$ 437,933
Other Revenues - Taps, Recon, late fee, Etc.			$ (5,163)	$ (3,600)	$ (8,763)
Revenue Requirement Used to Set Rates	$ 473,454	$ -	$ 568,761	$ (139,591)	$ 429,170

SOAH DOCKET NO. 473-17-0117.WS
PUC DOCKET NO. 46245
COMPANY NAME Double Diamond Utility Company, Inc. - White Bluff Subdivision - Water
TEST YEAR END 31-Dec-15

Attachment ES-3 Staff Schedule II
O&M Expense

OPERATIONS AND MAINTENANCE EXPENSE

Acct. No.	ACCOUNT	Test Year Total (a)	Company Adjustments To Test Year (b)	Company Requested Test Year Total (c)=(a)+(b)	Staff Adjustments To Company Request (d)	Staff Adjusted Total (e)=(c)+(d)
610	PURCHASED WATER	$ -		$ -		$ -
615	POWER EXPENSE-PRODUCTION ONLY	$ 73,303		$ 73,303		$ 73,303
618	OTHER VOLUME RELATED EXPENSES	$ 8,289		$ 8,289	$ (830)	$ 7,459
601-1	EMPLOYEE LABOR	$ 80,105	$ 415	$ 80,520	$ (3,380)	$ 77,140
620	MATERIALS	$ 2,913		$ 2,913	$ (600)	$ 2,313
631-636	CONTRACT WORK	$ 3,298		$ 3,298	$ (723)	$ 2,575
650	TRANSPORTATION EXPENSES	$ 13,313		$ 13,313	$ (10,209)	$ 3,104
664	OTHER PLANT MAINTENANCE	$ 41,055		$ 41,055	$ (19,211)	$ 21,844
601-2	OFFICE SALARIES	$ -		$ -		$ -
601-3	MANAGEMENT SALARIES	$ -		$ -		$ -
604	EMPLOYEE PENSIONS & BENEFITS	$ -		$ -		$ -
615	PURCHASED POWER-OFFICE ONLY	$ -		$ -		$ -
670	BAD DEBT EXPENSE	$ -		$ -		$ -
676	OFFICE SERVICES & RENTALS	$ -		$ -		$ -
677	OFFICE SUPPLIES & EXPENSES	$ 8,716		$ 8,716		$ 8,716
678	PROFESSIONAL SERVICES	$ -		$ -		$ -
684	INSURANCE	$ 9,668		$ 9,668	$ (4,815)	$ 4,853
666	REGULATORY EXPENSE (RATE CASE)	$ -		$ -		$ -
667	REGULATORY EXPENSE (OTHER)	$ 24,476		$ 24,476	$ (23,291)	$ 1,185
675	MISCELLANEOUS	$ 29,261		$ 29,261	$ (28,400)	$ 861
	TOTAL	$ 294,397	$ 415	$ 294,812	$ (91,459)	$ 203,353

SOAH DOCKET NO. 473-17-0117.WS
PUC DOCKET NO. 46245
COMPANY NAME Double Diamond Utility Company, Inc. - White Bluff Subdivision - Water
TEST YEAR END 31-Dec-15

Attachment ES-3 Staff Schedule III
Invested Capital

INVESTED CAPITAL	Test Year Total (a)	Company Adjustments To Test Year (b)	Company Requested Test Year Total (c)=(a)+(b)	Staff Adjustments To Company Request (d)	Staff Adjusted Total (e)=(c)+(d)
Plant in Service	$ 3,791,956		$ 3,791,956	$ 17,165	$ 3,809,121
Accumulated Depreciation	$ (1,603,728)		$ (1,603,728)	$ 1,676	$ (1,602,052)
			$ -		
Net Plant in Service	$ 2,188,228	$ -	$ 2,188,228	$ 18,841	$ 2,207,069
			$ -		
Working Cash Allowance	$ 24,568		$ 24,568	$ (7,622)	$ 16,946
Materials and Supplies			$ -		
Prepayments			$ -		
Customer Advances Construction			$ -		
Developer Contribution in Aid of Construction	$ (1,186,227)		$ (1,186,227)	$ 23	$ (1,186,204)
Customer Deposits			$ -		
Regulatory Assets			$ -		
Accumulated DFIT			$ -		$ (327,979)
Regulatory Liabilities			$ -		
			$ -		
TOTAL INVESTED CAPITAL (RATE BASE)	$ 1,026,569	$ -	$ 1,026,569	$ 11,242	$ 709,832
RATE OF RETURN			8.42%		6.96%
RETURN ON INVESTED CAPITAL	$ 30,106	$ 56,379	$ 86,485	$ (37,081)	$ 49,404

SOAH DOCKET NO. 473-17-0117.WS — Attachment ES-3 Staff Schedule IV
PUC DOCKET NO. 46245 — Taxes Other Than FIT
COMPANY NAME Double Diamond Utility Company, Inc. - White Bluff Subdivision - Water
TEST YEAR END 31-Dec-15

TAXES OTHER THAN FIT	Test Year Total (a)	Company Adjustments To Test Year (b)	Company Requested Test Year Total (c)=(a)+(b)	Staff Adjustments To Company Request (d)	Staff Adjusted Total (e)=(c)+(d)
Non-Revenue Related					
Ad Valorem Taxes	$ 54,977	$ 483	$ 55,460		$ 55,460
Total Property	$ 54,977	$ 483	$ 55,460		$ 55,460
Payroll Taxes					
FICA			$ 4,992	$ (209)	$ 4,783
MEDICARE			$ 1,168	$ (49)	$ 1,119
MEDICARE-Affordable Care Act				$ -	$ -
FUTA			$ 138	$ (28)	$ 110
SUTA			$ 442	$ (88)	$ 354
Total Payroll	$ 13,198	$ (6,458)	$ 6,740	$ (374)	$ 6,366
Other Taxes					
Other taxes and Licenses	$ 1,971		$ 1,971	$ (1,774)	$ 197
Total Other Taxes	$ 1,971		$ 1,971	$ (1,774)	$ 197
TOTAL TAXES OTHER THAN INCOME	$ 70,146	$ (5,975)	$ 64,171	$ (2,148)	$ 62,023

SOAH DOCKET NO. 473-17-0117.WS
PUC DOCKET NO. 46245
COMPANY NAME Double Diamond Utility Company, Inc. - White Bluff Subdivision - Water
TEST YEAR END 31-Dec-15

Attachment ES- 3 Staff Schedule V
Federal Income Taxes

FEDERAL INCOME TAXES		Test Year Total (a)	Company Requested Test Year Total (c)=(a)+(b)	Staff Adjustments To Company Request (d)	Staff Adjusted Total (e)=(c)+(d)
Return	Total		$ 215,209		$ 148,844
Less					
Interest Included in Return			$ 85,579		$ 49,615
Plus					
Other Adjustments					
TAXABLE COMPONENT OF RETURN			$ 129,630		$ 99,229
TAX RATE			26%		39%
TAX FACTOR	(1/(1-TR))*(TR)		0.351351351		0.639344262
FEDERAL INCOME TAX BEFORE ADJUSTMENTS			$ 45,545.68	$ -	$ 63,441.69
LESS					
Surtax Exemption			$ -		$ (27,459)
TOTAL FEDERAL INCOME TAXES			$ 45,546		$ 35,983
Allocation Factor	(White Bluff Water NI/Total White Bluff NI)		40.35%		33.19%
Allocated to White Bluff - Water			$ 18,378		$ 11,943

SOAH DOCKET NO. 473-17-0117.WS
PUC DOCKET NO. 46245
COMPANY NAME Double Diamond Utility Company, Inc. - White Bluff Subdivision - Sewer
TEST YEAR END 31-Dec-15

Attachment ES- 4 Staff Schedule I
Revenue Requirement

	Test Year Total	Company Adjustments To Test Year	Company Requested Test Year Total	Staff Adjustments To Company Request	Staff Adjusted Total
REVENUE REQUIREMENT	(a)	(b)	(c)=(a)+(b)	(d)	(e)=(c)+(d)
Operations and Maintenance	$ 257,348	$ 20,472	$ 277,820	$ (157,692)	$ 120,128
Depreciation and Amortization Expense	$ 69,816	$ 14,884	$ 84,700	$ (812)	$ 83,888
Taxes Other Than Income	$ 62,144	$ (4,038)	$ 58,106	$ (5,025)	$ 53,081
Federal Income Taxes	$ -	$ 27,354	$ 27,354	$ (3,315)	$ 24,039
Return on Invested Capital	$ 721	$ 128,003	$ 128,724	$ (29,284)	$ 99,440
TOTAL	$ 390,029	$ -	$ 576,704	$ (196,128)	$ 380,576
Other Revenues - Taps, Recon, late fee, Etc.			$ (4,574)	$ -	(4574)
Revenue Requirement Used to Set Rates	$ 390,029	$ 186,675	$ 572,130	$ (196,128)	$ 376,002

SOAH DOCKET NO. 473-17-0117.WS
PUC DOCKET NO. 46245
COMPANY NAME Double Diamond Utility Company, Inc. - White Bluff Subdivision - Sewer
TEST YEAR END 31-Dec-15

Attachment ES- 4 Staff Schedule II
O&M Expense

OPERATIONS AND MAINTENANCE EXPENSE		Test Year Total	Company Adjustments To Test Year	Company Requested Test Year Total	Staff Adjustments To Company Request	Staff Adjusted Total
Acct. No.	ACCOUNT	(a)	(b)	(c)=(a)+(b)	(d)	(e)=(c)+(d)
610	PURCHASED WATER	$0.00		$0.00		$0.00
615	POWER EXPENSE-PRODUCTION ONLY	$12,020.00		$12,020.00		$12,020.00
618	OTHER VOLUME RELATED EXPENSES	$2,409.00		$2,409.00	($530.00)	$1,879.00
601-1	EMPLOYEE LABOR	$70,968.00	$20,472.00	$91,440.00	($40,300.00)	$51,140.00
620	MATERIALS	$2,581.00		$2,581.00	($370.00)	$2,211.00
631-636	CONTRACT WORK	$2,922.00		$2,922.00	($212.00)	$2,710.00
650	TRANSPORTATION EXPENSES	$11,795.00		$11,795.00	($6,300.00)	$5,495.00
664	OTHER PLANT MAINTENANCE	$100,955.00		$100,955.00	($76,630.00)	$24,325.00
601-2	OFFICE SALARIES	$0.00		$0.00		$0.00
601-3	MANAGEMENT SALARIES	$0.00		$0.00		$0.00
604	EMPLOYEE PENSIONS & BENEFITS	$0.00		$0.00		$0.00
615	PURCHASED POWER-OFFICE ONLY	$0.00		$0.00		$0.00
670	BAD DEBT EXPENSE	$0.00		$0.00		$0.00
676	OFFICE SERVICES & RENTALS	$0.00		$0.00		$0.00
677	OFFICE SUPPLIES & EXPENSES	$7,722.00		$7,722.00		$7,722.00
678	PROFESSIONAL SERVICES	$3,937.00		$3,937.00	($2,907.00)	$1,030.00
684	INSURANCE	$8,566.00		$8,566.00	($1,500.00)	$7,066.00
666	REGULATORY EXPENSE (RATE CASE)	$0.00		$0.00		$0.00
667	REGULATORY EXPENSE (OTHER)	$7,049.00		$7,049.00	($2,519.00)	$4,530.00
675	MISCELLANEOUS	$26,424.00		$26,424.00	($26,424.00)	$0.00
	TOTAL	$257,348	$20,472	$277,820	($157,692)	$120,128

SOAH DOCKET NO. 473-17-0117.WS
PUC DOCKET NO. 46245
COMPANY NAME Double Diamond Utility Company, Inc. - White Bluff Subdivision - Sewer
TEST YEAR END 31-Dec-15

Attachment ES-4 Staff Schedule III
Invested Capital

	Test Year Total	Company Adjustments To Test Year	Company Requested Test Year Total	Staff Adjustments To Company Request	Staff Adjusted Total
INVESTED CAPITAL	(a)	(b)	(c)=(a)+(b)	(d)	(e)=(c)+(d)
Plant in Service	$ 2,847,336		$ 2,847,336	$ (6,290)	$ 2,841,046
Accumulated Depreciation	$ (1,205,081)		$ (1,205,081)	$ 5,585	$ (1,199,496)
Net Plant in Service	$ 1,642,255	$ -	$ 1,642,255	$ (705)	$ 1,641,550
Working Cash Allowance	$ 23,152		$ 23,152	$ (13,141)	$ 10,011
Materials and Supplies					
Prepayments					
Customer Advances Construction					
Developer Contribution in Aid of Construction	$ (137,457)		$ (137,457)	$ (53,998)	$ (191,455)
Customer Deposits					
Regulatory Assets					
Accumulated DFIT					$ (31,375)
Regulatory Liabilities					
TOTAL INVESTED CAPITAL (RATE BASE)	$ 1,527,950	$ -	$ 1,527,950	$ (67,844)	$ 1,428,731
RATE OF RETURN			8.42%		6.96%
RETURN ON INVESTED CAPITAL	$ 721	$ 128,003	$ 128,724	$ (29,284)	$ 99,440

SOAH DOCKET NO. 473-17-0117.WS
PUC DOCKET NO. 46245
COMPANY NAME Double Diamond Utility Company, Inc. - White Bluff Subdivision - Sewer
TEST YEAR END 31-Dec-15

Attachment ES- 4 Staff Schedule IV
Taxes Other Than FIT

TAXES OTHER THAN FIT	Test Year Total (a)	Company Adjustments To Test Year (b)	Company Requested Test Year Total (c)=(a)+(b)	Staff Adjustments To Company Request (d)	Staff Adjusted Total (e)=(c)+(d)
Non-Revenue Related					
Ad Valorem Taxes	$ 48,706.00		$ 48,706.00		$ 48,706.00
Total Property	$ 48,706.00	$ -	$ 48,706.00		$ 48,706.00
Payroll Taxes					
FICA			$ 5,669.00	$ (2,498.32)	$ 3,170.68
MEDICARE			$ 1,326.00	$ (584.47)	$ 741.53
MEDICARE-Affordable Care Act			$ -	$ -	$ -
FUTA			$ 156.00	$ (87.75)	$ 68.25
SUTA			$ 503.00	$ (283.63)	$ 219.38
Total Payroll	$ 11,692.00	$ (4,038.00)	$ 7,654.00	$ (3,454.17)	$ 4,199.84
Other Taxes					
Other taxes and Licenses	$ 1,746.00		$ 1,746.00	$ (1,571.00)	$ 175.00
Total Other Taxes	$ 1,746.00		$ 1,746.00	$ (1,571.00)	$ 175.00
TOTAL TAXES OTHER THAN INCOME	$ 62,144.00	$ (4,038.00)	$ 58,106.00	$ (5,025.17)	$ 53,080.84

SOAH DOCKET NO. 473-17-0117.WS
PUC DOCKET NO. 46245
COMPANY NAME Double Diamond Utility Company, Inc. - White Bluff Subdivision - Sewer
TEST YEAR END 31-Dec-15

Attachment ES-4 Staff Schedule V
Federal Income Taxes

FEDERAL INCOME TAXES		Test Year Total (a)	Company Requested Test Year Total (c)=(a)+(b)	Staff Adjustments To Company Request (d)	Staff Adjusted Total (e)=(c)+(d)
Return	Total		$ 215,209.00		$ 148,843.97
Less					
Interest Included in Return			$ 85,579.00		$ 49,614.66
Plus					
Other Adjustments					
TAXABLE COMPONENT OF RETURN			$ 129,630.00		$ 99,229.31
TAX RATE			26%		39%
TAX FACTOR	(1/(1-TR))*(TR)		0.351351351		0.639344262
FEDERAL INCOME TAX BEFORE ADJUSTMENTS			$ 45,545.68		$ 63,441.69
LESS					
Surtax Exemption			$ -		$ (27,459.00)
TOTAL FEDERAL INCOME TAXES			$ 45,545.68		$ 35,982.69
Allocation Factor	(White Bluff Sewer NI/Total White Bluff NI)		60.06%		66.81%
Allocated to White Bluff - Sewer			$ 27,354.00		$ 24,039.31

Allocation of Payroll

Company Claim

Name	Title	Water	WW	License Status
Jody Bledsoe	Utilities Operator	50.0%	50.0%	Water license current; wastewater license expired
Clovis C Willhelm	Wastewater Operator	25.0%	75.0%	Wastewater license current
Jerry Whitworth	Utilities Back Hoe Operator	50.0%	50.0%	
Dwayne Cota	Utilities Operator	50.0%	50.0%	Class D water license expired
Todd Dilworth	Utilities Manager	50.0%	50.0%	Class C water and wastewater, and CSI
Buck W Nunley	Regulatory Director of Utilities	12.5%	12.5%	Class C Surface license
Danny Keeton	Equipment Operator	50.0%	50.0%	

Staff Adjust

Name	Title	Water	WW	License Status
Jody Bledsoe	Utilities Operator	100.0%	0.0%	Water license current; wastewater license expired
Clovis C Willhelm	Wastewater Operator	0.0%	100.0%	Wastewater license current
Jerry Whitworth	Utilities Back Hoe Operator	0.0%	0.0%	
Dwayne Cota	Utilities Operator	100.0%	0.0%	Class D water license expired
Todd Dilworth	Utilities Manager	50.0%	50.0%	Class C water and wastewater, and CSI
Buck W Nunley	Regulatory Director of Utilities	12.5%	12.5%	Class C Surface license
Danny Keeton	Equipment Operator	0.0%	0.0%	

		Tax Rate		Taxable Wages		Staff Adjusted Total
PAYROLL TAXES - WHITE BLUFF WATER						(e)=(c)*(d)
FICA	All Wages	6.20%	$	77,140.00	$	4,782.68
MEDICARE	All Wages	1.45%	$	77,140.00	$	1,118.53
MEDICARE-Affordable Care Act		0.00%	$	77,140.00	$	-
FUTA	Wages to $7000	0.60%	$	18,375.00	$	110.25
SUTA	Wages to $9000	1.50%	$	23,625.00	$	354.38
TOTAL PAYROLL					$	6,365.84

	Tax Rate		Taxable Wages		Staff Adjusted Total
PAYROLL TAXES - WHITE BLUFF SEWER					(e)=(c)*(d)
FICA	6.20%	$	51,140.00	$	3,170.68
MEDICARE	1.45%	$	51,140.00	$	741.53
MEDICARE-Affordable Care Act	0.00%	$	51,140.00	$	-
FUTA	0.60%	$	11,375.00	$	68.25
SUTA	1.50%	$	14,625.00	$	219.38
TOTAL PAYROLL				$	4,199.84

Summary of Cost of Capital

Type of Capital	Ratio	Cost Rate	Weighted Cost
Long term Debt	47.27%	4.91%	2.32%
Common Equity	52.73%	8.79%	4.64%
Total	100.00%		6.96%

Summary of Cost of Capital

Type of Capital	2016 Ratio	2015 Ratio	2014 Ratio	2013 Ratio	2012 Ratio
American States Water Co					
Long term Debt	40.50%	39.10%	39.80%	42.20%	45.40%
Common Equity	59.50%	60.90%	60.20%	57.80%	54.60%
	100.00%	100.00%	100.00%	100.00%	100.00%
American Water Works					
Long term Debt	53.50%	52.60%	52.40%	53.90%	55.80%
Common Equity	46.50%	47.40%	47.60%	46.10%	44.20%
	100.00%	100.00%	100.00%	100.00%	100.00%
Aqua America					
Long term Debt	49.50%	48.50%	48.90%	52.70%	52.70%
Common Equity	50.50%	51.50%	51.10%	47.30%	47.30%
	100.00%	100.00%	100.00%	100.00%	100.00%
California Water Service Group					
Long term Debt	40.00%	40.10%	41.60%	47.80%	51.70%
Common Equity	60.00%	59.90%	58.40%	52.20%	48.30%
	100.00%	100.00%	100.00%	100.00%	100.00%
Connecticut Water Service					
Long term Debt	44.00%	45.90%	47.10%	49.20%	53.50%
Common Equity	56.00%	54.10%	52.90%	50.80%	46.50%
	100.00%	100.00%	100.00%	100.00%	100.00%
Middlesex Water					
Long term Debt	40.50%	41.20%	41.30%	42.60%	43.40%
Common Equity	59.50%	58.80%	58.70%	57.40%	56.60%
	100.00%	100.00%	100.00%	100.00%	100.00%
SJW Corp.					
Long term Debt	51.00%	51.60%	51.10%	55.00%	56.60%
Common Equity	49.00%	48.40%	48.90%	45.00%	43.40%
	100.00%	100.00%	100.00%	100.00%	100.00%
York Water					
Long term Debt	45.00%	44.80%	45.10%	46.00%	47.10%
Common Equity	55.00%	55.20%	54.90%	54.00%	52.90%
	100.00%	100.00%	100.00%	100.00%	100.00%
5 Year Average					
Long term Debt	47.27%				
Common Equity	52.73%				

Source: Value Line

July 14, 2017

Attachment ES – 7 has been filed confidentially

Dividend Yields of Eight Company Peer Group

	Average	American States Water Co	American Water Works	Aqua America	California Water Service Group	Connecticut Water Service	Middlesex Water	SJW Corp.	York Water
Symbol		AWR	AWK	WTR	CWT	CTWS	MSEX	SJW	YORW
Div		1.05	1.76	0.85	0.75	1.24	0.87	0.93	0.70
52 wk low		37.47	69.41	28.03	29.25	45.51	32.23	41.03	27.69
52 wk high		51.75	82.89	34.41	39.65	62.15	44.48	56.93	39.86
Spot Price		48.79	80.85	33.43	37.00	54.04	37.63	55.17	32.90
Spot Div Yield	2.16%	2.15	2.18	2.54	2.03	2.29	2.31	1.69	2.13
52 wk Div Yield	2.26%	2.35	2.31	2.72	2.18	2.30	2.27	1.90	2.07
Average	2.21%	2.25%	2.24%	2.63%	2.10%	2.30%	2.29%	1.79%	2.10%

Source: Barron's August 31, 2017
Value Line July 14, 2017

Attachment ES - 9

Five Year Growth Estimate Forecast for Eight Company Barometer Group

Company	Symbol	Yahoo! Finance	Zacks	Morning star	Value Line	Average
		Source				
American States Water Co	AWR	4.45%	5.00%	n/a	6.50%	5.32%
American Water Works	AWK	7.03%	7.40%	6.70%	8.50%	7.41%
Aqua America	WTR	5.50%	6.30%	n/a	7.00%	6.27%
California Water Service Group	CWT	9.70%	5.50%	n/a	9.00%	8.07%
Connecticut Water Service	CTWS	6.00%	6.00%	N/A	4.50%	5.50%
Middlesex Water	MSEX	2.70%	N/A	N/A	8.50%	5.60%
SJW Corp.	SJW	14.00%	N/A	n/a	3.00%	8.50%
York Water	YORW	4.90%	N/A	N/A	7.00%	5.95%
						6.58%

Source:
Internet

April 10, 2017

Expected Market Cost Rate of Equity
Using Data for the Barometer Group of Eight Water Companies
5 Year Forecasted Growth Rates

	Time Period	Adjusted Dividend Yield(1) (1)	Growth Rate (2)	Expected Rate of Return (3=1+2)
(1)	52 Week Average Ending:	2.26%	6.58%	8.84%
(2)	Spot Price Ending:	2.16%	6.58%	8.74%
(3)	Average:	2.21%	6.58%	8.79%

Sources: Value Line April 14, 2017
Barron's April 10, 2017

Attachment ES - 11

Company	Beta
American States Water Co	0.75
American Water Works	0.60
Aqua America	0.70
California Water Service Group	0.75
Connecticut Water Service	0.65
Middlesex Water	0.75
SJW Corp.	0.70
York Water	0.80
Average beta for CAPM	0.71

Source:
Value Line

July 14, 2017

Future
Risk Free Rate

Treasury note 10-yr Note	Yield
2Q 2017	2.27
3Q 2017	2.34
4Q 2017	2.52
1Q 2018	2.69
2Q 2018	2.83
3Q 2018	2.98
4Q 2018	3.08
2018-2022	3.80
Average	2.81

Source:
Blue Chip
September 1, 2017

Historic
Risk Free Rate

Treasury note 10-yr Note	Yield
62 Years	5.91
40 Years	6.48
20 Years	3.93
10 Years	2.83
5Years	2.14
Average	4.26

Source:
Federal Reserve Board H.15 Release
https://www.federalreserve.gov/releases/h15/data.htm

Required Rate of Return on Market as a Whole Forecasted

	Dividend Yield		Growth Rate		Expected Market Return
		+		=	
Value Line Estimate	2.20%		7.79%	(a)	9.99%
S&P 500	2.13%	(b)	10.00%		12.13%
Average Expected Market Return				=	11.06%

(a) ((1+0.35)^.25) -1) Value Line forecast for the 3 to 5 year index appreciation is 35%
(b) S&P 500 dividend yield multiplied by half the growth rate

Source:

Yahoo!Finance	August 31, 2017
Barron's	August 31, 2017
Value Line	################

Required Rate of Return on Market as a Whole Historic

	Expected Market Return
5 yr S&P Composite Index Historical Return	14.66%
10 yr S&P Composite Index Historical Return	6.94%
20 yr S&P Composite Index Historical Return	7.68%
40 yr S&P Composite Index Historical Return	11.06%
91 yr S&P Composite Index Historical Return	10.04%
Average Expected Market Return =	10.08%

CAPM with forecasted return

Re		Required return on individual equity security
Rf		Risk-free rate
Rm		Required return on the market as a whole
Be		Beta on individual equity security
Re	=	Rf+Be(Rm-Rf)
Rf	=	2.8138
Rm	=	11.0614
Be	=	0.7125
Re	=	8.69

Sources: Value Line September 1, 2017
Blue Chip July 1, 2017
Attachment ES - 9 page 1

CAPM with historical return

Re		Required return on individual equity security
Rf		Risk-free rate
Rm		Required return on the market as a whole
Be		Beta on individual equity security
Re	=	Rf+Be(Rm-Rf)
Rf	=	4.2559
Rm	=	10.0765
Be	=	0.7125
Re	=	8.40

Sources:

Attachment ES - 12, page 2
Attachment ES -13, page 2
Attachment ES - 11