

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF DELAWARE**

In the Matter of:

**THE APPLICATION OF TIDEWATER
UTILITIES, INC. FOR A GENERAL RATE
INCREASE (FILED NOVEMBER 25, 2013)**

**PSC DOCKET NO.
13-466**

**DIRECT TESTIMONY AND EXHIBITS OF
HOWARD J. WOODS, JR., P.E.
ON BEHALF OF THE
PUBLIC ADVOCATE OF THE STATE OF DELAWARE**

Dated: May 20, 2013

Tidewater Utilities, Inc.
PSC Docket Nos. 13-466
Direct Testimony of Howard J. Woods, Jr., P.E.

TABLE OF CONTENTS

	<u>Page</u>
1. STATEMENT OF QUALIFICATIONS.....	1
2. SCOPE AND PURPOSE OF TESTIMONY	2
3. SUMMARY OF FINDINGS AND CONCLUSIONS.....	3
4. OPERATING REVENUES	5
5. OPERATING & MAINTENANCE EXPENSES.....	8
6. RATE BASE.....	14
7. TAXES.....	15
8. RECOMMENDATION	16
APPENDIX A - Qualifications	18
APPENDIX B - Schedules.....	34

1 **1. STATEMENT OF QUALIFICATIONS**

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

3 A. My name is Howard J. Woods, Jr. and my address is 138 Liberty Drive,
4 Newtown, Pennsylvania 18940-1111.

5 **Q. BY WHOM ARE YOU EMPLOYED?**

6 A. I am an independent consultant; the Delaware Division of the Public Advocate
7 (“DPA”) has engaged me in this matter.

8 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND**
9 **PROFESSIONAL QUALIFICATIONS.**

10 A. I hold a Bachelor of Civil Engineering Degree from Villanova University (1977)
11 and a Master of Civil Engineering Degree with a concentration in water resources
12 engineering, also from Villanova University (1985). I am a registered professional
13 engineer in Delaware, New Jersey, New York, Maryland, Pennsylvania and New
14 Mexico. I am also licensed to perform RAM-WSM security assessments of public
15 water systems. I am an active member of the American Society of Civil Engineers,
16 the National Ground Water Association, the American Water Works Association,
17 the Water Environment Federation and the International Water Association.

18 **Q. HAVE YOU PROVIDED TESTIMONY IN UTILITY MATTERS ON**
19 **PRIOR OCCASIONS?**

20 A. Yes. I have testified in numerous rate setting proceedings and quality of service
21 evaluations in matters before the public utility commissions in New Jersey, New
22 York, Connecticut, Delaware, Pennsylvania and Kentucky.

1 **Q. PLEASE DESCRIBE YOUR PROFESSIONAL EXPERIENCE.**

2 A. A detailed description of my professional experience is provided in Appendix A
3 of this testimony. In summary, I have over 36 years experience in the planning,
4 design, construction and operation of water and wastewater utility systems. I
5 have worked for a Federal regulatory agency, a large investor-owned water and
6 wastewater utility, a firm engaged in contract operations of municipally owned
7 water and wastewater utilities, and in engineering and operational consulting for
8 the water and wastewater industry. During my career, I have been responsible for
9 all operations functions, including regulatory compliance, water production,
10 distribution and maintenance services as well as wastewater collection and
11 treatment.

12 **2. SCOPE AND PURPOSE OF TESTIMONY**

13 **Q. MR. WOODS, PLEASE DESCRIBE YOUR AREA OF RESPONSIBILITY**
14 **IN THIS MATTER.**

15 A. I have been engaged to review the proposal by Tidewater Utilities, Inc. (hereafter
16 “TUI” or “Company”) to increase existing rates to customers and to make other
17 tariff modifications. As originally filed, TUI requested a rate increase that would
18 produce an additional \$3.9 million (14.42%) in operating revenues. The focus of
19 my review and this testimony is on the Company’s proposed Test Period Revenue
20 Requirement .

1 **Q. WHAT MATERIALS HAVE YOU REVIEWED IN DISCHARGING THIS**
2 **ASSIGNMENT?**

3 A. I have reviewed the Company's filing and responses to discovery requests in this
4 matter.

5 **3. SUMMARY OF FINDINGS AND CONCLUSIONS**

6 **Q. HAVE YOU REVIEWED THE PETITIONER'S REQUEST TO**
7 **INCREASE RATES CHARGED FOR WATER SERVICE?**

8 A. Yes, I have.

9 **Q. WHAT HAS THE PETITIONER REQUESTED IN ITS PRE-FILED**
10 **TESTIMONY AND EXHIBITS?**

11 A. TUI has asked the Commission to increase its rates for service and to allow it to
12 collect charges it believes to be necessary to recover the cost of operations and
13 capital improvements to its systems. TUI is seeking an increase in revenues of
14 \$3,903,338, which would result in an overall increase in revenues of 14.42%. The
15 present TUI tariff rate has been in effect since June 19, 2012.

16 **Q. DO YOU BELIEVE THAT THE COMPANY'S REQUEST FOR RATE**
17 **RELIEF SHOULD BE GRANTED?**

18 A. No. TUI has underestimated present rate revenues and overestimated certain of
19 its Test Period operating expenses. Furthermore, it also projected the completion

1 of certain capital construction projects that will not be complete and in service by
2 the close of the Test Period. In addition, the Company has requested an
3 allowance for cash working capital (“CWC”) in rate base. While the requested
4 allowance for CWC is based on the results of a Lead/Lag Study, the calculation of
5 the CWC amount incorrectly includes Depreciation and Invested Capital. The
6 Company has requested a rate of return based on an equity cost rate of 10.95%.
7 DPA Witness Glenn Watkins has recommended an equity cost rate of 9.10%.

8 **Q. WHAT IS YOUR RECOMMENDATION IN THIS MATTER?**

9 A. The Company claims that it has a revenue deficiency of \$3,903,338 and requests a
10 rate increase of that amount. After adjusting present rate revenues to reflect
11 actual sales for the Test Period, removing projects that will not be complete and in
12 service by the end of the Test Period from rate base, reflecting a proper level for
13 the Company’s CWC requirement, adjusting certain operating expenses to reflect
14 Test Period levels of expense, and adjusting the cost of equity capital, it is my
15 opinion that the Company’s revenue deficiency cannot be supported. These
16 adjustments result in a revenue *surplus* of \$1,387,713 for the Test Period.
17 Therefore, a rate increase is not justified.

18 **Q. HAVE YOU REVIEWED THE PROPOSED TARIFF LANGUAGE**
19 **CHANGES PROPOSED BY THE COMPANY?**

20 A. Yes. The Company is proposing to expand the language in its tariff covering its
21 cross-connection control activities (Tariff Section 3.6). These changes will better

1 align the tariff and the cross-connection control program, and I fully support them
2 . In addition, the Company seeks to clarify its responsibilities with respect to fire
3 hydrants for which it has not accepted ownership (Tariff Section 6.2). These are
4 fire hydrants in systems under construction by developers. The proposed tariff
5 language clarifies the issue regarding maintenance of these fire hydrants and
6 makes it clear that Company maintenance only begins once the Company accepts
7 the fire hydrant. I also support this change.

8 **4. OPERATING REVENUES**

9 **Q. HAVE YOU DEVELOPED AN ESTIMATE OF REVENUES AT**
10 **PRESENT RATES?**

11 A. Yes. Schedule HJW-3 shows my summary of present rate revenues and
12 compares this to the Company's Test Period projections. Present rate revenues
13 for the Test Period amount to \$29,319,852. This amount is \$2,244,315 higher
14 than the Company's forecast.

15 **Q. EXPLAIN THE COMPONENTS OF THIS ADJUSTMENT.**

16 A. The Company's as-filed Test Period Revenues were based on three months of
17 actual data and nine months of projected data. The Company derived its
18 projected sales data from the monthly water production volumes budgeted for the
19 last quarter of 2013 and the first six months of 2014. It adjusted the monthly
20 pumpage values for the last quarter of 2013 and for 2014 by a three-year average
21 for the percentage of non-revenue water anticipated in each projected month.

1 The adjusted values represent total sales for the month. From these amounts, the
2 Company subtracted budgeted sales to contract customers to arrive at the
3 projected Test Period monthly General Metered Service volumes.

4 In responses to the DPA’s discovery requests, the Company provided the
5 actual sales volumes for the Test Period through March 2014 (Ref. DPA-A-37
6 and DPA-A-97.) I substituted these actual sales volumes for the budgeted Test
7 Period sales volumes and calculated the General Metered Service volumes by
8 subtracting contract sales. The Company’s data responses provided actual sales
9 volumes, as opposed to total pumpage volumes, so no adjustment to these data to
10 account for losses in the distribution system is necessary. Following the
11 Company’s method, I subtracted the actual contract sales for each month of the
12 Test Period through March 2014. Schedule HJW-3A shows the actual sales
13 volumes, summarized by customer category. I allocated the sales volumes to
14 “Apartments & Commercial” and to the three rate blocks using the same formula
15 the Company used to make these allocations. Schedule HJW-3A shows the
16 adjusted Test Period Volumes. I used these volumes to calculate Test Period
17 General Metered Service Revenues shown on Schedule HJW-3B. In this
18 calculation, I have used the same number of customers that the Company offered
19 in its filing schedules, so my adjustment is based solely on updating the sales
20 volume to the actual volume provided by the Company. This results in an
21 increase in Test Period General Metered Service Revenues of \$2,165,197. This
22 is the largest component of the revenue adjustment.

1 **Q. WHAT ADJUSTMENTS HAVE YOU MADE TO FIRE PROTECTION**
2 **REVENUES?**

3 A. I updated the number of public fire accounts to the actual number provided by
4 the Company for March 2014 and the projected number of additions through
5 June 30, 2014. (Ref. DPA-A-99 and PSC-GEN-1.) This update produces an
6 additional \$3,139 in Public Fire Revenues. I made a similar adjustment to
7 Private Fire Revenues based on the actual number of accounts provided by the
8 Company in its response to Staff's data request PSC-RR-38. This adds \$20,318
9 in present rate revenues.

10 **Q. WHAT CHANGES DID YOU MAKE TO CONTRACT SALES?**

11 A. I calculated the Contract Sales Revenues from the actual sales volumes for the
12 Test Period provided in the response to DPA-A-100. This results in a decrease in
13 Test Period revenues of \$26,898 because the actual Contract Sales volumes were
14 less than the Company's budgeted Contract Sales volumes presented in the
15 filing.

16 **Q. DID YOU MAKE ANY CHANGES TO OTHER OPERATING**
17 **REVENUES?**

18 A. Yes. I updated the Other Operating Revenues to reflect the actual revenues
19 through March 2014. I also included the rental revenues associated with the
20 antenna lease. This recognizes the annual revenues of \$25,092 received from
21 rental of space on one of its elevated storage tanks. TUI customers should
22 benefit from the revenues generated when utility plant assets are used to produce

1 income. In this case, the asset is a water storage tank that customers have paid
2 for through their rates.

3 **Q. WHAT CHANGES DID YOU MAKE TO CONNECTION FEE**
4 **REVENUES?**

5 A. None. I accepted the Company's projection.

6 **5. OPERATING & MAINTENANCE EXPENSES**

7 **Q. HAVE YOU REVIEWED THE COMPANY'S CLAIM FOR OPERATING**
8 **& MAINTENANCE ("O&M") EXPENSES IN THIS PROCEEDING?**

9 A. Yes. I have summarized the Company's claim for Test Period O&M Expenses
10 and my adjustments to those expenses on Schedule HJW-4. The Company's
11 claim amounts to \$14,865,330; I have reduced this amount by \$1,052,373, for a
12 revised total of \$13,812,957.

13 **Q. EXPLAIN THE ADJUSTMENT YOU MADE TO THE COMPANY'S**
14 **LABOR EXPENSE.**

15 A. I made two adjustments to the Company's Labor Expense. First, the Company
16 has vacancies in its authorized workforce level. As with any large company,
17 vacancies will exist from time to time and remain open until a qualified
18 candidate has been hired. Schedule HJW-4B shows the Company's recent
19 history of vacancies. I calculated an average vacancy rate and the average cost
20 per month per employee. The average vacancy rate is 8.8 person-months per
21 year and the average cost per employee is \$5,585 per month. This represents an

1 average cost of \$49,115 that will not be paid as a result of periodic vacancies. I
2 have deducted this from the total labor amount. In addition, I have calculated the
3 average rate at which labor is capitalized and the average rate at which labor is
4 charged out to subsidiaries. These calculations are shown on Schedule HJW-4C.
5 The average rate at which labor is capitalized is 17.00% and the average rate at
6 which labor is transferred to subsidiaries is 17.96%. These rates are applied to
7 the Labor Before Allocation amount of \$6,316,786 on Schedule HJW-4A. The
8 resulting Annualized Labor amount is \$4,108,360, which is \$160,613 less than
9 the Company's claim.

10 **Q. EXPLAIN YOUR ADJUSTMENTS TO PURCHASED POWER,**
11 **CHEMICALS AND TREATMENT.**

12 A. These expense items all vary with the amount of water produced. Because I
13 increased the amount of water sold to reflect the actual Test Period sales through
14 March 2014, the amount of water produced also must be increased. The
15 adjustments I made on Schedules HJW-4D and HJW-4E show the impact of the
16 increase in the production volume. In the case of Power, I have increased the
17 Company's claim by \$57,196 and I have also increased the Chemicals amount by
18 \$48,817. The Treatment amount is also increased to reflect the higher amount of
19 production and this is a \$29,406 adjustment.

20 **Q. HAVE YOU MADE AN ADJUSTMENT TO THE COMPANY'S CLAIM**
21 **FOR TANK PAINTING EXPENSE?**

22 A. I have arrived at the same amount that the Company has in its filing. However,
23 the Company is using an amortization calculation to develop its tank painting

1 cost. Instead, this cost should be a normalized level of expense. The Company
2 has indicated that the expected life of a tank coating is 10 years. It is my
3 professional judgment that this is a reasonable life expectancy in a coastal
4 environment like that served by the Company. In Schedule HJW-4F, I have
5 indicated the actual costs incurred to complete tank paintings. I have calculated
6 the average annual cost over the ten-year painting cycle and this amounts to
7 \$76,871.

8 **Q. WHY IS A NORMALIZATION CALCULATION APPROPRIATE FOR**
9 **THIS ITEM?**

10 A. The Company has many tanks and the expense incurred to periodically repaint
11 these will vary significantly from tank to tank. For example, as shown in
12 Schedule HJW-4F, the Rehoboth Tank was painted in 2012 at a cost of \$446,485
13 while the Business Park Kent City Tank was painted at a cost of \$10,586 in 2008.
14 In some years, the annual cost actually incurred may be high while in other years
15 the cost may be low or nothing at all. For ratemaking purposes, neither extreme
16 should be relied on. Rather, rates should be set on an average level of expense
17 incurred over the normal life cycle of the painting. In addition, a normalization
18 calculation will be reviewed and adjusted each time the Company petitions the
19 Commission for a rate adjustment. This will periodically reset the value used to
20 set rates in a way that provides a consistent level of funding for this important
21 maintenance activity. To the extent that tank painting may last longer than ten
22 years, customers will benefit from the lower normalized value. Conversely, if
23 the paintings prove to have a shorter life, the Company can proceed to properly

1 maintain their tanks and know that the normalization calculation will adjust to
2 reflect the higher level of expense.

3 **Q. EXPLAIN THE ADJUSTMENT YOU MADE TO UNCOLLECTIBLES.**

4 A. As shown on Schedule HJW-4G, I calculated the average uncollectible rate for
5 the last three years at 1.5410%. I applied this rate to the Test Period GMS &
6 Public Fire Revenues of \$25,118,389 to arrive at an uncollectible amount of
7 \$387,082. This is \$29,577 higher than the Company's amount.

8 **Q. WHAT ADJUSTMENTS HAVE YOU MADE TO "OUTSIDE
9 SERVICES?"**

10 A. These adjustments are calculated on Schedule HJW-4H and reflect the removal
11 of supplemental executive retirement plan ("SERP") expenses and 100% of the
12 incentive compensation costs claimed by the Company. These items are
13 typically not allowed by commissions in rate setting and should be borne by the
14 Company's stockholders, not its ratepayers. I have been advised that in
15 Delmarva Power & Light Company's most recent rate case, the Commission
16 voted to exclude SERP executive and non-executive incentive compensation
17 from the revenue requirement, in part because they are not expenses that are
18 necessary for the utility to provide safe and adequate utility service. The
19 adjustments shown on Schedule HJW-4H show the reduced amounts paid out to
20 Middlesex Water Company for these items and I have also decreased the amount
21 passed through to TUI subsidiaries. In addition to removing the SERP and
22 incentive compensation costs, I also removed the general 3% inflation

1 adjustment included in the Company projection. The net impact of these
2 adjustments is a \$233,495 reduction in Outside Services.

3 **Q EXPLAIN YOUR ADJUSTMENT TO INSURANCE.**

4 A. The Company has projected an increase in cost for its various insurance
5 coverages, but at this point the amount of the increase is not fixed, known and
6 measureable. The Company's recent experience shows that insurance costs have
7 averaged \$355,866 and the expense for 2013 was \$367,654. I identify the
8 highest actual expense for insurance in the past five years (\$388,429 in 2009) on
9 Schedule HJW-4I and adopt this as a reasonable estimate of the likely expense to
10 be incurred by the Company while rates from this proceeding are in effect. This
11 results in a reduction of \$69,682 from the Company's claim.

12 **Q. WHAT ADJUSTMENTS HAVE YOU MADE TO EMPLOYEE**
13 **PENSIONS & BENEFITS?**

14 A. The Company provided an update to the actual level of expenses incurred for the
15 Test Period that represents 9 months of actual expenses and 3 months of
16 budgeted expenses (the "9+3 Amount"). I adopted this as the baseline for my
17 estimate of the Pension & Benefits Expense on Schedule HJW-4J. From this
18 baseline, I removed the SERP expenses and adjusted the capitalized benefit ratio
19 to 17%, consistent with the calculation I made on Schedule HJW-4C. These
20 changes result in a reduction of \$21,772 from the 9+3 Amount. The adjustment
21 from the as-filed Pension & Benefits Claim is reflected on Schedule HJW-4 and
22 this is \$595,827.

1 **Q. PLEASE EXPLAIN YOUR ADJUSTMENT TO REGULATORY**
2 **COMMISSION EXPENSE.**

3 A. Schedule HJW-4K shows my adjustment to this item. First, I calculated the
4 average cost of the Company's last rate case and the projected cost of this
5 proceeding. This amounts to \$406,000 and this amount should be normalized
6 over a two-year period. Thus, the cost to be used to determine rates should allow
7 for a normalized level of rate case expense of \$203,000 per year. The
8 Company's claim, which is also normalized over a two-year period, was
9 \$248,000. The difference represents a reduction of \$45,000. In addition to this
10 adjustment, I have also averaged the annual cost of ongoing Regulatory
11 Commission expenses incurred for the last three years. The data for this
12 calculation were provided in the Company's response to PSC-RR-47. The
13 average amount is \$1,100, resulting in a reduction of \$565.

14 **Q. EXPLAIN THE TEST PERIOD LEVEL OF "OTHER EXPENSE" THAT**
15 **YOU HAVE RECOMMENDED.**

16 A. In Schedule HJW-4L, I adopted the Company's "9+3" level of expenses
17 provided in DPA-A-105 as my baseline. I removed 100% of the incentive
18 compensation cost on Line 23 to arrive at a total Other Expense of \$2,204,358.
19 This amount is carried over to Schedule HJW-4 where I have compared my
20 recommendation for Other Expense to the amount contained in the Company's
21 filing. This represents an increase in Other Expense of \$36,596.

22 **Q. WHAT ADJUSTMENTS DID YOU MAKE TO THE ENTERPRISE**
23 **RESOURE PLANNING SYSTEM EXPENSE?**

1 A. I adjusted the cost of capital in the lease cost calculation to reflect the
2 recommendations of DPA Witness Glenn Watkins. This results in a revised total
3 cost of \$722,554, which is \$66,872 lower than the Company's claim.

4 **Q. HAVE YOU CALCULATED THE COST OF CAPITAL TO BE USED TO**
5 **DETERMINE A REVENUE REQUIREMENT IN THIS CASE?**

6 A. On Schedule HJW-5, I show a comparison of the Company's cost of capital
7 calculation and Mr. Watkins' recommendation. I have relied on Mr. Watkins'
8 testimony for the recommended capital structure and cost of capital.

9 **6. RATE BASE**

10 **Q. WHAT IS YOUR RECOMMENDATION REGARDING RATE BASE?**

11 A. I have calculated Rate Base on Schedule HJW-6 at \$97,448,356. This is
12 \$2,146,498 lower than the Company's claim.

13 **Q. WHAT MAKES UP YOUR ADJUSTMENT TO RATE BASE?**

14 A. First, I have removed the cost of three projects that the Company initially
15 projected would be completed and in service by the close of the Test Period.
16 Updates to the construction schedules provided in PSC-GEN-76 show that these
17 plant items will not be completed by the close of the Test Period, and I have
18 removed these from the Utility Plant in Service Balances on Schedule HJW-6A.
19 Also, on Schedule HJW-6A, I have made corresponding adjustments to the
20 annual depreciation amounts. This adjustment is also reflected in the changes I
21 made to the Accumulated Depreciation balances on Schedule HJW-6B. The

1 reduction in Utility Plant in Service of \$796,630 and the reduction in
2 Accumulated Depreciation of \$10,612 are reflected on Lines 1 and 2 of Schedule
3 HJW-6.

4 The average monthly balance for Materials and Supplies for 2013 is
5 \$124,540. I calculated this on Schedule HJW-6C and reflected this amount in
6 my calculation of Rate Base. This results in a \$6,218 reduction.

7 The Company based its claimed CWC allowance in this proceeding on the
8 results of a Lead/Lag Study. Its calculation of CWC included Depreciation and
9 Invested Capital. These are non-cash items that I have removed from the
10 calculation on Schedule HJW-6D. The resulting CWC amount is \$1,744,212,
11 which is \$1,255,168 less than the Company's claim. As a point of reference, the
12 Company used the "1/8th Method" to estimate CWC in its last base rate
13 proceeding. If the same method were used in this current rate proceeding, the
14 CWC allowance would be \$1,726,620 or \$17,598 less than what results from the
15 use of the Lead/Lag Study after my adjustments.

16 **7. TAXES**

17 **Q. HAVE YOU MADE AN ADJUSTMENT TO OTHER TAXES?**

18 A. Yes. I increased the PSC Assessment by \$6,733 to reflect the impact of the
19 higher amount of Test Period Revenues. This adjustment is reflected on
20 Schedule HJW-7.

1 **Q. HAVE YOU MADE ADJUSTMENTS TO THE QUALIFIED**
2 **PRODUCTION ACTIVITIES DEDUCTION AND TO STATE AND**
3 **FEDERAL INCOME TAXES?**

4 A. Yes. I have flowed through the impacts of my recommended changes to
5 revenues and expenses on Schedules HJW-8 and HJW-8A to reflect the tax
6 impact of my recommendations. The results of these changes are summarized in
7 the Income Statement on Schedule HJW-2.

8 **8. RECOMMENDATION**

9 **Q. WHAT IS THE PRESENT-RATE TEST PERIOD RATE OF RETURN**
10 **CLAIMED BY THE COMPANY AND HOW DOES THIS VALUE**
11 **COMPARE TO THE RATE OF RETURN YOU HAVE CALCULATED?**

12 A. The Company calculated the present-rate rate of return to be 6.18%. By
13 comparison, I have calculated a rate of return of 8.44% after reflecting the
14 impact of the adjustments I am recommending in this matter.

15 **Q. IS THE COMPANY'S REQUEST FOR A RATE INCREASE JUSTIFIED?**

16 A. No it is not. The proposed fair rate of return recommended by Mr. Watkins is
17 7.58%. The adjusted Test Period rate of return exceeds this amount. I calculated
18 \$1,387,713 of surplus revenue amount resulting from present rates on Schedule
19 HJW-1. By contrast, the Company has calculated a revenue deficiency amount
20 of \$3,903,388 and requested a corresponding increase in rates to recover this
21 additional amount. The requested rate adjustment should be rejected.

22

1 **Q. DOES THIS COMPLETE YOUR TESTIMONY AT THIS TIME?**

2 **A.** Yes it does.

1

2

APPENDIX A - Qualifications

3

Of

4

Howard J. Woods, Jr., P.E.

KEY EXPERIENCE

Mr. Woods has over 36 years experience in water and wastewater utility engineering and operations. In his career he has worked for US EPA, engineering consultants and in numerous senior engineering and operational roles at a large investor-owned utility. His experience is well rounded, covering all aspects of public water and wastewater operations and management including outsourcing, acquisitions, maintenance, water production, filtration, distribution, water quality, wastewater collection and treatment, regulatory compliance and safety.

Mr. Woods managed numerous water and wastewater management contracts. He has assisted clients in outsourcing management activities and transferring ownership of complete utility systems. He has advised clients on alternative contracting approaches and reduced operating costs by renegotiating plant operations contracts. He has helped clients reduce operating expenses and he has provided expert testimony in construction arbitrations, contamination incidents and utility rate and service proceedings.

EDUCATION

Masters of Civil Engineering, Water Resources – Villanova University
Bachelor of Civil Engineering (cum laude) – Villanova University

ACCOMPLISHMENTS

- Directed and managed the procurement process leading to the sale of a municipal wastewater system in Southeastern Pennsylvania. The sale of the Upper Dublin Township Sanitary Sewer System will yield \$20,000,000 for a system serving approximately 8,000 connections and having annual revenues of \$3,000,000. Advised the Township on alternative outsourcing and contracting approaches, reduced interim operating expenses by 30% prior to the sale by renegotiating the plant operations contract.
- Prepared an analysis of ownership alternatives for Lower Makefield Township's sanitary sewer collection system. Managed a procurement process that led to the receipt of a \$17 million bid for the potential sale of a system serving 10,700 residential and commercial customers.
- Assessed an existing public private partnership contract and future contracting alternatives for the Jersey City Municipal Utilities Authority (JCMUA). Recommended alternative contract terms and assisted JCMUA in negotiating a new ten-year operations agreement saving approximately \$3,000,000 per year.
- Assisted Greater Ouachita Water Company, a non-profit Louisiana water and sewer utility, in evaluating operating contract alternatives. Provided assistance in identifying qualified operators to be invited to bid a multi-year full-service operating contract. Assisted in evaluating bids and in contract negotiations.

ACCOMPLISHMENTS (CONTINUED)

- Completed an independent assessment of ownership and operating alternatives for the Township of Sparta water utility. The study evaluated current operating and financial conditions of the utility and considered two alternative service delivery approaches: contract operation and a sale of the system to an investor-owned utility.
- Completed an assessment of the financial and operating impacts of a proposal by a Pennsylvania municipality to dissolve its municipal water and sewer authority. The authority served multiple political subdivisions and dissolution would have resulted in regulation by the Pennsylvania Public Utility Commission. The additional regulatory burdens identified and limitations on municipal financing capacity resulted in a recommendation to retain authority ownership and operations.
- Completed an analysis of ownership alternatives for the Bristol Township Sewer Department. Reviewed capital needs and financing arrangements, rate structure and system revenues, operational costs and regulatory compliance issues. Assessed potential interest in the acquisition of the system by other municipal and investor-owned entities and assessed the possible impact of a sale on rates and service quality. The study recommended retention of the system by the Township and offered recommendations to reduce costs and improve staffing levels.
- Completed the assessment of a potential water utility acquisition by a Pennsylvania Municipal Authority. Assisted the Authority in developing a bid proposal for the acquisition and assessing the impact on revenue requirement and consumer rates resulting from the acquisition.
- Completed an evaluation of the revenue requirement associated with the decommissioning of a wastewater treatment plant and the diversion of wastewater to a regional treatment works for the North Wales Water Authority. Assessed the rate impact to customers of potentially retaining and improving an existing wastewater treatment plant and the rate impact of joining a regional treatment system. The evaluation supported the decision to regionalize the sewage treatment function.
- Assisted the Banco Gubernamental de Fomento para Puerto Rico, Autoridad para el Financiamiento de la Infraestructura de Puerto Rico and PricewaterhouseCoopers in developing a new operating contract for the Puerto Rico Aqueduct and Sewer Authority (PRASA). The contract was developed, bid and awarded in less than six months, cutting the normal procurement time by nearly two-thirds. The value of the contract was \$300 million per year.
- Completed an independent assessment of the planning and engineering decision making for a major water treatment plant renovation project undertaken by Aquarion Water Company of Connecticut in Stamford Connecticut. Evaluated process selection decisions, project sizing and regulatory compliance issues and testified before the Connecticut Department of Public Utility Control on the findings of the evaluation.

ACCOMPLISHMENTS (CONTINUED)

- Completed audits of water production operations and water quality management functions at Aquarion Water Company of Connecticut, Aquarion Water Company of Massachusetts and Aquarion Water Company of New Hampshire. Assessed operational procedures and staffing levels, reviewed risk management plans including emergency response plans and dam safety programs, evaluated programmed and preventative maintenance systems and developed recommendations to assist the Company in lowering the cost of service while reducing risk and improving reliability.
- Completed an audit of the watershed and environmental management functions at Aquarion Water Company of Connecticut. Assessed watershed management, monitoring and operational procedures, reviewed compliance tracking systems, reviewed risk management strategies and developed recommendations to assist the Company in reducing risk and improving reliability and watershed protection efforts.
- Completed a management audit of the water distribution function at Aquarion Water Company of Connecticut. Evaluated system monitoring and maintenance practices, assessed the impact of the use of contract maintenance and construction services to reduce Company workforce levels. Developed recommendations to improve the Company's programmed and preventative maintenance systems, corrosion control procedures and non-revenue water control programs.
- Assisted Greater Ouachita Water Company, a Louisiana non-profit water and sewer utility, in identifying the cause of water quality complaints resulting from poor color removal filtration processes. Recommended improvements to minimize capital modifications of the chemical feed, filter backwash and spent wash water treatment systems.
- Completed a Vulnerability Assessment for a municipally-owned public water system in northern New Jersey. Organized, planned and conducted the assessment using the RAM-WSM methodology. Evaluated existing physical protection systems at utility facilities, developed threat assessments and adversary sequence analyses, prepared recommendations to reduce risk.
- Completed an energy management evaluation for the Elmira (NY) Water Board and provided operator training on energy management strategies. Recommendations from the study allowed the client to reduce energy expenses by 30% through a series of operational modifications.
- Completed an energy management audit of the Pittsburgh Water and Sewer Authority and identified strategies for reducing power consumption. The results of this investigation provided the foundation for the Authority and its contract manager (U.S. Water L.L.C.) to develop and implement more effective maintenance and operations procedures to reduce energy costs.
- Served as an expert witness in a matter involving the diversion of service by a large commercial customer of Atlantic City Municipal Utilities Authority (ACMUA). Statistically analyzed customer water use and billing records by relating water use variables (e.g. weather, occupancy rates, and restaurant output) to recorded consumption. Identified periods of service diversion and assisted ACMUA in the collection of revenues and penalties due.

ACCOMPLISHMENTS (CONTINUED)

- Served as an expert witness in a matter involving excess billing of a large commercial customer of a New Jersey public utility. Statistically analyzed usage patterns over a ten-year period and identified periods of excess billing. Assisted the customer in negotiating a \$50,000 settlement of the dispute.
- Developed a model of the major water resources facilities in the Passaic, Pompton, Ramapo and Hackensack River Basins that allows the calculation of the safe and dependable yield of the Wanaque/Monksville, Point View and Oradell Reservoir systems under varying drought conditions. The model is being used by Passaic Valley Water Commission to evaluate long-term water supply management strategies and to plan for future water supply needs.
- Assisted New York City Department of Environmental Protection in compiling a report on the estimated safe yield of the City water supply reservoir system. A current assessment of safe yield was required by agreement of the Parties to the 1954 US Supreme Court Decree governing the use and export of water from the Delaware River Basin. Provided additional consulting assistance on plans to assure system reliability during planned repairs to the Roundout-West Branch Tunnel, an aqueduct that transports up to 800 million gallons of water per day to the City from the Delaware Basin reservoir system.
- Developed an analysis of the costs of the Hickory Log Creek Reservoir and the yield sharing arrangements between the City of Canton and the Cobb County-Marietta Water Authority. Developed recommended methods to assess the impact of US Army Corps of Engineers operating policies on future operating and capital cost allocations.
- Prepared a long-range water supply needs forecast for the Passaic Valley Water Commission. Analyzed water use patterns within the Commission's retail service area and for over two-dozen large contract customers. Produced population forecasts for the service area and individual water demand forecasts for each contract sale-for-resale customer using statistical and numeric forecasting techniques. The forecast projects total annual demand, average day, maximum month and maximum day demands and forms the basis for other ongoing facility and operations planning efforts.
- Prepared a long-range water supply needs forecast for the North Wales Water Authority. Analyzed water use patterns within the Authority's retail service and identified the water supply requirement for the Authority's share in a regional water supply system. Produced customer forecasts for the service area and individual water demand forecasts for large industrial customers and existing and potential wholesale water customers. Applied statistical and numeric forecasting techniques to assess trends in unit water use for each customer class. The forecast projects total annual demand, average day, maximum month and maximum day demands and forms the basis for other ongoing facility and operations planning efforts.
- Developed a Water Allocation Permit renewal and extension application for the Passaic Valley Water Commission. Secured a new 25-year permit for the diversion of surface water from the Pompton and Passaic Rivers. The new water diversion permit for the Commission supports more flexible operations and more efficient source utilization. The Commission serves a retail service population of 325,000 and effectively serves an additional 260,000 people through sale-for-resale connections.

ACCOMPLISHMENTS (CONTINUED)

- Prepared a cost of service allocation study for Passaic Valley Water Commission, a regional water system that serves a large urban retail service population and a significant outlying area through direct retail and wholesale water sales. Allocated costs based on standard methodologies to Owner Cities, External Cities Retail and Wholesale classes of service. The Commission has annual revenues in excess of \$71 million.
- Prepared a cost of service allocation study for three Pennsylvania Municipal Utilities Authorities considering a joint water supply expansion project. Evaluated and allocated anticipated construction and operating costs for the plant expansion and assigned costs of existing facilities using a commodity-demand allocation method. Developed a recommended tariff design to allow for the fair recovery of prospective costs associated with the expanded facilities.
- Developed a five-year comprehensive business plan for Passaic Valley Water Commission. This plan moved the Commission from an annual operating budget to a five-year budget that links operating costs, capital construction and debt service requirements to customer growth and revenue requirements and rates. The plan was instrumental in obtaining an improved bond rating and positioning the Commission to undertake a major capital improvement program.
- Developed a five-year comprehensive business plan for the North Wales Water Authority. This plan established a rolling five-year operating and capital budget that links operating costs, capital construction and debt service requirements to customer growth and revenue requirements and rates. The plan was instrumental in maintaining current rates while simultaneously maintaining the Authority's AA bond rating.
- Served as an expert witness in an arbitration involving a dispute between a New Jersey municipal water department and A.C. Schultes, Inc., a well contractor. Assisted A.C. Schultes in supporting its claim for a contract modification and the recovery of unanticipated expenses. The arbitrator awarded the contractor 100% of its cost claim.
- Served as an expert witness in a matter involving the alleged contamination of a New Jersey municipal water system with heavy metals and organic chemicals. Reviewed over 38,000 discrete water quality sample results, analyzed the operational records of the system and developed a computer model (EPANET2) depicting water flow and water quality changes over a period spanning two decades. Assisted the client in successfully defeating a threatened class action lawsuit at the certification level.
- Served as a mediator involving a dispute between the Long Beach Township Water Department and Don Siegel Construction Co., Inc., a pipeline installation contractor. Assisted the parties in resolving various construction cost claims and in interpreting the contract construction documents. Litigation over the disputes was avoided.
- Reviewed engineering plans and operational practices in numerous water and wastewater rate adjustment proceedings and quality of service proceedings for the New Jersey Division of Rate Counsel. Assessed utility engineering design and construction plans, developed alternatives to utility proposed projects, and evaluated the utility companies' ability to render safe, adequate and proper water or wastewater

ACCOMPLISHMENTS (CONTINUED)

service. Provides expert testimony in the following utility rate, franchise expansion and service quality proceedings:

- Acacia Lumberton Manor Fire Service Complaint
BPU Docket No. WC01080495
- Applied Waste Water Management Rates
BPU Docket No. WR03030222
- Applied Waste Water Management Base Rates
BPU Docket No. WR08080550
- Applied Waste Water Management Franchise
BPU Docket No. WE03070530
- Applied Waste Water Management Andover Franchise
BPU Docket No. WE04111466
- Applied Waste Water Management Hillsborough Franchise
BPU Docket No. WE04101349
- Applied Waste Water Management Oakland Franchise
BPU Docket No. WE04111467
- Applied Waste Water Management Union Twp Franchise
BPU Docket No. WE050414
- Applied Waste Water Management Tewksbury Franchise
BPU Docket No. WR08100908
- Aqua NJ Freehold Franchise Extension Review
BPU Docket WE09120965
- Aqua NJ Pine Hill Franchise
BPU Docket No. WE05070581
- Aqua NJ Upper Freehold Franchise
BPU Docket No. WE05100822
- Aqua NJ Readington Wastewater Franchise
BPU Docket No. WE07030224
- Aqua New Jersey Base Rate Case
BPU Docket No. WR07120955
- Aqua New Jersey Acquisition of Bloomsbury Water
BPU Docket WE09050360
- Aqua New Jersey Acquisition of Harkers Hollow Water
BPU Docket WM09020119
- Aqua New Jersey Base Rate Adjustment
BPU Docket No. WR09121005
- Aqua New Jersey Base Rate Adjustment
BPU Docket No. WR11120859
- Aqua New Jersey DSIC Foundational Filing
BPU Docket No. WR12070685
- Atlantic City Sewerage Company Base Rate Adjustment
BPU Docket No. WR09110940
- Atlantic City Sewerage Company Base Rate Adjustment
BPU Docket WR11040247
- Bayonne MUA – United Water NJ/ Kohlberg, Kravis,
Roberts Joint Venture Operations & Financing Agreement
BPU Docket No. WM12080777

ACCOMPLISHMENTS (CONTINUED)

- Bayview Water Company Rates
BPU Docket No. WR01120818
- Camden and United Water Environmental Services,
Inc. Management Services Agreement Modifications
BPU Docket No. WM12050457
- Borough of Haledon Rates
BPU Docket No. WR01080532
- City of Orange Privatization Review
BPU Docket No. WO03080614
- Crestwood Village Loan Approval
BPU Docket No. WF04091042
- Crestwood Village Water Co Base Rates
BPU Docket No. WR07090706
- Elizabethtown Water Co. v. Clinton Board of Adjustment
BPU Docket No. WE02050289
- Elizabethtown Water Company Rates
BPU Docket No. WR03070510
- Elizabethtown Water Company Franklin Franchise
BPU Docket No. WE05020125
- Elizabethtown Water Company Purchased Water Adjustment Clause
BPU Docket No. WR04070683
- Environmental Disposal Corporation Main Extension Agreement
BPU Docket No. WO04091030
- Environmental Disposal Corporation Rates
BPU Docket No. WR04080760
- Environmental Disposal Corporation Rates
BPU Docket No. WR07090715
- Fayson Lake Water Company Rates
BPU Docket No. WR03040278
- Fayson Lake Water Company Base Rates
BPU Docket No. WR07010027
- Gordon's Corner Water Company Rates
BPU Docket No. WR03090714
- Gordons Corner Water Co Base Rate Adjustment
BPU Docket No. WR10060430
- Gordons Corner Water Co Base Rate Adjustment
BPU Docket No. WR12090807
- Jensens Deep Run Franchise Transfer
BPU Docket No. WE10070453
- Lake Valley Water Company Rates
BPU Docket No. WR04070722
- Middlesex Water Company Rates
BPU Docket No. WR03110900
- Middlesex Water Company Rates
BPU Docket No. WR05050451
- Middlesex Water Company Base Rates
BPU Docket No. WR07040275

ACCOMPLISHMENTS (CONTINUED)

- Middlesex Water Co Transmission Main Prudency Review
BPU Docket No. WO08020098
- Middlesex Water Company Base Rates
BPU Docket No. WR09080666
- Middlesex Water Company DSIC Foundational Filing
BPU Docket No. WR12111021
- Middlesex Water Company Base Rates
BPU Docket No. WR12010027
- Montague Water Company Rates
BPU Docket No. WR03121034
- Montague Sewer Company Rates
BPU Docket No. WR03121035
- Montague Sewer Company Rates
BPU Docket No. WR05121056
- Montague Water Company Acquisition
BPU Docket No. WM10060432
- Montague Water & Sewer Company Rates
BPU Docket No. WR12110983
- Mount Holly Water Company Rates
BPU Docket No. WR03070509
- Mount Olive Villages Water & Sewer Franchise
BPU Docket No. WE03120970
- New Jersey American Water Company Rates
BPU Docket No. WR03070511
- New Jersey American Water Company Rates
BPU Docket No. WR06030257
- New Jersey American Water Acquisition of Mt.
Ephraim and Approval of Municipal Consent
BPU Docket No. WE06060431
- New Jersey American Water Purchased Water Adjustment Clause
BPU Docket No. WR05110976
- New Jersey American Water Company – Mantua Franchise
BPU Docket No. WE07060372
- New Jersey American Water Co – Rocky Hill Franchise
BPU Docket No. WE07020103
- New Jersey American Water Company Rates
BPU Docket No. WR08010020
- New Jersey American Hopewell Township Franchise
BPU Docket No. WE07120981
- New Jersey American Water Co/City of Trenton
Joint Petition for Approval of the Sale of Water System
BPU Docket No. WE08010063
- New Jersey American Water Company Petition for Approval of a
Distribution System Improvement Charge (DSIC)
BPU Docket No. WO08050358
- New Jersey American Water Co Management Audit
BPU Docket No. WA09070510

ACCOMPLISHMENTS (CONTINUED)

- New Jersey American Water Base Rate Adjustment
BPU Docket No. WR10040260
- New Jersey American Water Company Franklin Franchise Review
BPU Docket No. WE11070403
- New Jersey American Water Company Base Rate Adjustment
BPU Docket No. WR11070460
- New Jersey Natural Gas Rates
BPU Docket No. GR07110889
- Oakwood Village Sewer Change in Control
BPU Docket No. WM07070535
- Parkway Water Company Rates
BPU Docket No. WR05070634
- Pinelands Water Company Rates
BPU Docket No. WR03121016
- Pinelands Wastewater Company Rates
BPU Docket No. WR03121017
- Pinelands Water Company Rates
BPU Docket No. WR08040282
- Pinelands Wastewater Company Rates
BPU Docket No. WR08040283
- Pinelands Water Company Rates
BPU Docket No. WR120807342
- Pinelands Wastewater Company Rates
BPU Docket No. WR12080735
- Rock GW, LLC Determination of Applicability of Board Regulation
BPU Docket No. WO08030188
- Rock GW, LLC Determination of Applicability of Board Regulation
BPU Docket No. WO10100739
- Roxbury Water Company Rates
BPU Docket No. WR09010090
- Seabrook Water Company Franchise
BPU Docket No. WC02060340
- Shorelands Water Company Rates
BPU Docket No. WR04040295
- Shorelands Water Company Base Rates
BPU Docket No. WR10060394
- Shore Water Company Rates
BPU Docket No. WR09070575
- South Jersey Water Supply Change in Control
BPU Docket No. WM07020076
- United Water Acquisitions Evaluation
BPU Docket No. WM02060354
- United Water Arlington Hills Franchise
BPU Docket No. WE07020084
- United Water Arlington Hills Sewerage Base Rates
BPU Docket No. WR08100929

ACCOMPLISHMENTS (CONTINUED)

- United Water New Jersey Base Rates
BPU Docket No. WR07020135
 - United Water New Jersey Base Rates
BPU Docket No. WR08090710
 - United Water New Jersey Base Rates
BPU Docket No. WR11070428
 - United Water New Jersey DSIC Foundational Filing
BPU Docket No. WR12080724
 - United Water New Jersey Management Audit
BPU Docket: WA05060550
 - United Water New Jersey Affiliate Transaction
Review – JPI Painting
BPU Docket No. WO10060410
 - United Water New Jersey Affiliate Transaction
Review – Utility Service Contract
BPU Docket No. WO10060409
 - United Water New Jersey Mt Arlington Franchise
Extension Review
BPU Docket No. WE09121006
 - United Water New Jersey Vernon Township Franchise
Extension Review
BPU Docket WE10110870
 - United Water New Jersey Vernon Township Franchise
Extension Review
BPU Docket WE11030155
 - United Water Great Gorge/Vernon Sewer Base Rates
BPU Docket No. WR10100785
 - United Water Toms River Base Rates
BPU Docket No. WR080830139
 - United Water Toms River Base Rates
BPU Docket No. WR12090830
 - United Water West Milford Sewerage Base Rates
BPU Docket No. WR08100928
- Assisted the New Jersey Division of Rate Counsel in assessing drought conditions effecting water utilities in New Jersey during the 2002 drought. Analyzed proposals for water supply interconnections to mitigate drought impacts, developed position statements regarding pricing alternatives, and provided a critique of State water supply management initiatives prior to and during drought conditions.
 - Assisted the New Jersey Division of Rate Counsel in assessing the need for a Distribution System Improvement Charge (DSIC) to allow regulated water utilities to accelerate the recovery of capital investments in water distribution assets (BPU Docket WO10090655). Provided financial analyses of current and prospective distribution renovation programs. Reviewed and commented on draft language for a generic rule making.
 - Assisted the Delaware Public Advocate in assessing drought conditions effecting water utilities in northern New Castle County during the 2002 drought (PSC Docket No. 323-02). Reviewed water utility operations prior to and during the drought

ACCOMPLISHMENTS (CONTINUED)

emergency, assessed the effectiveness of use curtailments, developed recommendations to assure proper, cost-effective resources management for future drought conditions.

- Assisted the Delaware Public Service Commission in a determination of rate base for Artesian Water Company in PSC Docket 08-96. Evaluated selected plant facilities and proposed projects to determine the need to impute revenues for under-utilized facilities in establishing new base rates.
- Assisted the Delaware Public Service Commission in an evaluation of the Initial Tariff filing submitted by Tidewater Environmental Services, Inc. (PSC Docket No. 11-274WW) for wastewater service in a development known as “The Ridings.” Evaluated projected operating expenses and rate base claims and developed recommendations that avoided a potential 17.5% rate increase.
- Prepared an assessment of the water supply capacity certification and water conservation plan submitted by United Water Delaware in PSC Docket 09-282 on behalf of the Delaware Public Service Commission. Evaluated the capacity of the sources of supply available to the Company with respect to projected demands and the requirements of the Delaware Water Supply Self-Sufficiency Act of 2003. Assessed the effectiveness of water conservation activities and developed recommendations to improve the efficiency and effectiveness of Company conservation programs.
- Provided expert testimony on behalf of the Delaware Public Advocate in the matter of Inland Bays Preservation Company’s request for an increase in wastewater rates before the Delaware Public Service Commission (PSC Docket No. 09-327-WW). Evaluated plant facilities, proposed projects and the allocation of developer contributions in aid of construction to determine rate base. Assessed the level of operating expenses claimed in the filing and recommended adjustments to substantially lower the requested rate increase.
- Provided expert testimony on behalf of the Delaware Public Advocate in the matter of Tidewater Environmental Services, Inc.’s request for a base rate adjustment for seven of its regulated wastewater utility systems (PSC Docket No. 11-329WW). Established independent revenue requirements for each system to assure that costs and rates were properly matched for each independent group of customers served by the Company. Recommended an overall rate adjustment that was equivalent to 60% of the initial rate request and was within 12% of the final Ordered rates in this matter.
- Provided expert testimony on behalf of the Township of Newtown before the Pennsylvania Public Utility Commission (PUC Dkt. No. P-2012-2327738) in regard to a dispute between the Township and Newtown Artesian Water Company regarding the siting of a proposed new well. Evaluated current and future water supply needs, water quality and treatment needs and the revenue requirement of the proposed project relative to other alternatives.

ACCOMPLISHMENTS (CONTINUED)

- Managed 175 municipal and commercial water and wastewater contracts located in seven states for American Water Services/AmericanAnglian Environmental Technologies. Through these contracts, cost effective water and wastewater service was provided to over one million people. Contracts included the 160 MGD City of Buffalo, NY water system and the 30 MGD Scranton Sewer Authority wastewater operations. Directed an operations staff of 700 employees. Eliminated financial losses while improving safety and quality.
- Directed a marketing and business development staff for AmericanAnglian Environmental Technologies that secured the largest operations and maintenance contract awarded in the US in 1999 and the second best overall performance in the US market. Increased revenues by 28%. Evaluated potential contract operations and design/build projects to identify operating and capital savings on hundreds of potential contracts throughout the United States. Evaluations included Atlanta, Georgia, Scranton, Pennsylvania and Springfield, Massachusetts.
- Managed the operations of 16 water systems for New Jersey-American Water Company, a regulated investor-owned utility serving one million people throughout NJ. Coordinated the activities of a decentralized operations staff of 440 to provide reliable water service, ensure environmental compliance, control costs, manage and maintain system assets, reduce liability, provide site security and maintain a safe work place, and meet financial objectives. Responsible for the maintenance and operation of all source of supply, treatment, filtration and storage facilities, producing and distributing between 100 MGD and 220 MGD, as well as over 4,000 miles of water transmission and distribution facilities.
- Directed a team of engineering, legal, public relations and financial professionals that planned, designed, permitted and constructed a \$192,000,000 water treatment plant and pipeline system for New Jersey-American Water Company. The intake, constructed in environmentally sensitive areas and the state of the art water filtration plant can be expanded to produce 100 MGD. The project is the principal source of surface water for nearly one million people in southern New Jersey and it was built to allow new regulatory controls on ground water use to go into effect. The project was completed within budget and on schedule.
- Developed the financial model and contract language that allowed water lines to be extended to over 3,000 homes with contaminated private wells in Atlantic County, New Jersey. This program provided the financial assurances needed to construct several miles of water mains, eliminate federal tax liability and reduce costs by 34%.
- Initiated and directed the first study of desalination for public water supply purposes in NJ for the City of Cape May. This project evaluated two desalination technologies and demonstrated that reverse osmosis could be used effectively to treat brackish water at a competitive cost. A full-scale plant has since been placed in service.
- Developed long-range regional water supply plan for Monmouth County, New Jersey, a county that was adding as many as 1,000 water utility customers per year and seriously stressing the water supply. The plan evaluated alternative sources of water, conservation and regional reservoir development. The recommendations avoided \$30,000,000 in capital construction while ensuring a safe supply of water for a 15-year planning period. Negotiated supply sharing operating agreements with the New Jersey Water Supply Authority to implement the plan.

ACCOMPLISHMENTS (CONTINUED)

- Directed a staff of engineers and consultants in preparing comprehensive plans for 60 water systems located throughout the United States. Communities served by these systems include: Pittsburgh, Pennsylvania and its surrounding suburbs; Charleston, West Virginia; Richmond, Indiana; E. Saint Louis, Illinois and Monterey, California. Evaluated alternatives and identified the least costly means of providing safe water service for each system. Assessed operations strategies to identify external threats to the reliability and efficiency of these systems. Identified specific capital facility needs and operations strategies for five, ten and fifteen year planning horizons, defined the long term role of each system in prompting regional water supply development, and assessed the impact of future State and Federal water quality regulations on system operations and needs.
- Developed a formula for allocating ground water to 30 water suppliers in southern New Jersey for the New Jersey Department of Environmental Protection and negotiated an implementation agreement with effected suppliers. The New Jersey Legislature adopted the formula in the Water Supply Management Act Amendments of 1992. The allocation formula protects a regional aquifer from over-pumping.
- Developed a plan to convey storm water through a sixty-foot high railroad embankment in Prince Georges County, Maryland. Evaluated alternative methods and selected one that allowed an existing culvert to be modified to carry higher flow rates. Saved over \$500,000 in construction costs. The Washington Suburban Sanitary Commission and Prince Georges County adopted the design as a standard in their storm water design manual.
- Negotiated Lakewood, New Jersey's first three-year water and wastewater labor agreement in the face of an impending strike, departing from prior history of year-to-year contract agreements.
- Provided expert testimony in judicial proceedings involving utility rate adjustments before the New Jersey Board of Public Utilities, the Connecticut Department of Public Utility Control and the New York Public Service Commission. Testified on environmental and operations topics including: rate setting strategies, source of supply improvements, water resources management, treatment to mitigate contamination, staffing levels and operating practices. Evaluated alternative operating practices and testified as to the least costly means of operating and maintaining water and wastewater facilities in these jurisdictions.
- Served as a gubernatorial appointee to the New Jersey Water Supply Advisory Council under Governors Florio and Whitman. Advised the NJ Department of Environmental Protection on a variety of water resources management issues.
- Coordinated the response to an outbreak of giardiasis for the US Environmental Protection Agency. The outbreak affected 20% of the people served by a municipal water system in north-central Pennsylvania. Specified immediate control measures, short-term treatment techniques and long-term treatment improvements to resolve the immediate problem and prevent a recurrence.

REPRESENTATIVE CLIENTS

- A.C. Schultes, Inc.
- Aquarion Water Company of Connecticut
- Aquarion Water Company of Massachusetts
- Atlantic City Municipal Utilities Authority
- Bethlehem Water Authority
- BOC Gases
- Bucks County Water & Sewer Authority
- Camco Management
- Cedar Grove Township
- Consumers New Jersey Water Company
- Delaware Public Advocate
- Delaware Public Service Commission
- D. R. Horton – New Jersey
- Elmira Water Board
- Greater Ouachita Water Company
- Harris Defense Group
- Jersey City Municipal Utilities Authority
- Lower Makefield Township
- New Jersey-American Water Company
- New Jersey Division of Rate Counsel
- New Jersey Water Supply Authority
- New York City Department of Environmental Protection
- North Penn Water Authority
- North Wales Water Authority
- Passaic Valley Water Commission
- Perkasio Borough
- Perkasio Borough Authority
- Pricewaterhouse Coopers, LLP
- Sussex Shores Water Company
- Township of Sparta (NJ)
- U.S. Water, LLC
- Upper Dublin Township

PROFESSIONAL QUALIFICATIONS

Registered Professional Engineer in Delaware (2004), Maryland (1982), New Jersey (1984), New Mexico (1987), New York (1984) and Pennsylvania (1983).

Licensed to complete RAM-W vulnerability assessments (2002).

PROFESSIONAL ASSOCIATIONS

American Society of Civil Engineers, American Water Works Association (Trustee of New Jersey Section), American Water Resource Management Association, International Water Association, National Ground Water Association, National Fire Protection Association, Water Environment Federation, Tau Beta Pi.

PROFESSIONAL HISTORY

HOWARD J. WOODS, JR. & ASSOCIATES, LLC	2000 - Present
General Manager	
AMERICAN WATER WORKS COMPANY	1983 - 2000
American Water Services, Inc.	
Senior Vice President - Operations	1999 - 2000
American Anglian Environmental Tech., L.P.	
Senior Vice President - Business Development	1998 - 1999
American Water Works Service Co.	
Vice President - Special Projects	1997 - 1998
New Jersey-American Water Co., Inc.	
Vice President - Operations	1989 - 1997
American Water Works Service Co.	
Engineering Manager	1988 - 1989
System Director of Planning	1986 - 1988
Division Manager of Operations	1984 - 1986
Division Director of Engineering	1983 - 1984
JOHNSON, MIRMIRAN & THOMPSON	1981 - 1983
Project Engineer	
U.S. ENVIRONMENTAL PROTECTION AGENCY	1977 - 1981
Environmental Engineer	

APPENDIX B - Schedules

Schedule HJW-1: Financial Summary

Line No.	Description	Test Period As-		DPA	Reference
		Filed	DPA Adjustments	Recommendation	
1	Rate Base	\$ 99,594,854	\$ (2,146,498)	\$ 97,448,356	HJW-6
2	Net Operating Income (present rates)	\$ 6,150,425	\$ 2,074,418	\$ 8,224,843	HJW-2
3	Earned Rate of Return	6.18%	2.26%	8.44%	
4	Proposed Fair Rate of Return	8.53%	-0.95%	7.58%	HJW-5
5	Required Operating Income (proposed rates)	\$ 8,495,441	\$ (1,104,297)	\$ 7,391,144	
6	Operating Income Deficiency	\$ 2,345,016	\$ (3,178,715)	\$ (833,699)	
7	Gross Revenue Conversion Factor	1.664525	-	1.664525	
8	Revenue Deficiency (Surplus)	\$ 3,903,338	\$ (5,291,050)	\$ (1,387,713)	

Notes:

(1) Test Period As-Filed data from MFR Schedule 1.

Schedule HJW-2: Income Statement

Line No.	Description	Under Present Rates			Reference
		Test Period As-Filed	DPA Adjustments	DPA Recommendation	
1	Operating Revenues	\$ 27,075,536	\$ 2,244,316	\$ 29,319,852	HJW-3
	Operating Expenses				
2	Operation and Maintenance Expenses	14,864,696	\$ (1,051,738)	\$ 13,812,957	HJW-4
3	Depreciation and Amortization Expenses	3,472,813	\$ (14,150)	\$ 3,458,663	HJW-6A
4	Taxes Other than Income	742,997	\$ 6,733	\$ 749,730	HJW-7
5	Total Operating Expenses Before Income Taxes	19,080,506	\$ (1,059,155)	18,021,351	
6	Utility Operating Income Before Income Taxes	7,995,030	\$ 3,303,471	11,298,501	
7	State Income Taxes	403,806	\$ 269,055	\$ 672,861	HJW-8
8	Federal Income Taxes	1,440,799	\$ 959,998	\$ 2,400,797	HJW-8
9	Utility Operating Income	6,150,425	\$ 2,074,418	8,224,843	
10	Original Cost Rate Base	\$ 99,594,854	\$ (2,146,498)	\$ 97,448,356	HJW-6
11	Rate of Return	6.18%		8.44%	

SCHEDULE HJW-3: REVENUE SUMMARY

Line	Item	Reference Schedule	Company Test		DPA Test Period Revenues
			Period Revenues	DPA Adjustments	
1	General Metered Service	HJW-3B	\$ 21,086,326	\$ 2,165,197	\$ 23,251,523
2	Public Fire Protection	HJW-3C	\$ 1,863,736	\$ 3,139	\$ 1,866,874
3	Private Fire Protection	HJW-3C	\$ 976,304	\$ 20,318	\$ 996,622
4	Contract Sales	HJW-3D	\$ 1,261,117	\$ (26,898)	\$ 1,234,220
5	Connection Fees	HJW-3E	\$ 1,541,077	\$ -	\$ 1,541,077
6	Other Operating Revenues	HJW-3E	\$ 346,976	\$ 82,559	\$ 429,535
7	TOTAL REVENUES		\$ 27,075,537	\$ 2,244,315	\$ 29,319,852

Schedule HJW-3A: Calculation of Test Period Sales Volume

Line	Month	Consumption by Class in Gallons			
		Test Period Consumption	Apartments & Commercial	Contract Sales	Residential Consumption
1	July 2013 Actual	151,523,000	11,767,080	13,521,000	126,234,920
2	August 2013 Actual	203,166,000	32,499,360	7,359,000	163,307,640
3	September 2013 Actual	220,497,000	17,319,450	11,693,000	191,484,550
4	October 2013 Actual	159,073,000	7,953,920	17,683,000	133,436,080
5	November 2013 Actual	172,346,000	25,147,470	8,648,000	138,550,530
6	December 2013 Actual	121,538,000	9,516,210	7,137,000	104,884,790
7	January 2014 Actual	120,323,000	5,574,410	13,562,000	101,186,590
8	February 2014 Actual	136,916,000	16,413,300	8,960,000	111,542,700
9	March 2014 Actual	107,866,000	8,216,300	7,500,000	92,149,700
10	April 2014 Projected	173,031,863	5,291,320	14,604,000	153,136,543
11	May 2014 Projected	224,060,717	16,808,817	9,750,000	197,501,900
12	June 2014 Projected	194,840,882	12,414,854	8,500,000	173,926,028
13	Total	1,985,181,462	168,922,491	128,917,000	1,687,341,971
14	Test Year Sales in Thousand Gallons				
15	Apartments & Commercial	164,917			
16	GMS 0-5,000	524,009			
17	GMS 5,001-20,000	637,689			
18	GMS Over 20,000	268,814			
19	Total	1,595,429			
20	Test Period Sales Volumes in Thousand Gallons				
		Company Test	DPA		
21		Period	Adjustments	DPA Test Period	
22	Apartments & Commercial	164,917	4,005	168,922	
23	GMS 0-5,000	520,819	97,269	618,088	
24	GMS 5,001-20,000	633,807	118,371	752,178	
25	GMS Over 20,000	267,178	49,898	317,076	
26	Total	1,586,721	269,543	1,856,264	

Notes:

- (1) Actual Test Period Consumption from DPA-A-37 and DPA-A-97.
- (2) Projected Consumption for April through June 2014 from PSC-GEN-1.
- (3) Apartments & Commercial Consumption from DPA-A-98.
- (4) Contract Sales volumes from DPA-A-100.
- (5) Test Year Sales volumes from MFR Schedule 3A, Sheet 2 of 3.

Schedule HJW-3B: General Metered Service Revenues

FACILITIES CHARGES

Line No.	Meter Size	Number of Test Period Customers	Number of Test Period Bills	Tariff Rate	DPA Test Period Revenues
1	5/8	32,140	128,560	\$ 52.86	\$ 6,795,682
2	3/4	90	360	52.86	\$ 19,030
3	1	2,921	11,684	88.11	\$ 1,029,477
4	1 1/2	95	380	158.64	\$ 60,283
5	2	309	1,236	246.75	\$ 304,983
6	3	32	128	475.89	\$ 60,914
7	4	4	16	740.28	\$ 11,844
8	6	4	16	1,445.28	\$ 23,124
9	8	2	8	2,256.06	\$ 18,048
10	10	-	-	-	\$ -
11	TOTAL	35,597	142,388		\$ 8,323,386

VOLUMETRIC SALES (Thousand Gallons)

	Category	Volume	Rate (\$/ThGal)	DPA Test Period Revenues
12	Apartments & Commercial	168,922	\$ 8.1519	\$ 1,377,039
13	GMS 0-5,000	618,088	\$ 7.9469	\$ 4,911,881
14	GMS 5,001-20,000	752,178	\$ 8.0493	\$ 6,054,506
15	GMS Over 20,000	317,076	\$ 8.1517	\$ 2,584,710
16	Total	1,856,264		\$ 14,928,137
17	TOTAL GENERAL METERED SERVICE			\$ 23,251,523
18	Company General Metered Service			\$ 21,086,326
19	DPA Adjustment			\$ 2,165,197
20				

Notes:

- (1) Number of meters by size from MFR Schedule 3A, Page 2 of 3.
- (2) Volume of sales by category from Schedule HJW-3A.

Schedule HJW-3C: Public and Private Fire Revenues

PUBLIC FIRE PROTECTION

Line	Item	Amount
1	Number of Customers at March 31, 2014	30,577
2	Projected Additions Through June 30, 2014	352
3	Total Test Year Customers	30,929
4	Number of Bills	123,716
5	Rate (\$/Quarter)	\$ 15.09
6	DPA Annual Public Fire Revenues	\$ 1,866,874
7	Company Public Fire Revenues	\$ 1,863,736
8	DPA Adjustment	\$ 3,139

PRIVATE FIRE PROTECTION FACILITIES CHARGE

9	Meter Size	Number of Customers	Number of Bills	Tariff Rate	Revenues
10	1-inch	1	4	\$ 28.67	\$ 115
11	2-inch	54	216	100.35	\$ 21,676
12	4-inch	135	540	425.28	\$ 229,651
13	6-inch	155	620	950.90	\$ 589,558
14	8-inch	23	92	1,691.55	\$ 155,623
15	DPA Private Fire Facilities Charge	368	1,472		\$ 996,622
16	Company Private Fire Facilities Charge				\$ 976,304
17	DPA Adjustment				\$ 20,318

Notes:

- (1) Number of Public Fire Customers at March 31 from DPA-A-99.
- (2) Public Fire customer additions from PSC-GEN-1.
- (3) Private Fire Customer Count from PSC-RR-38.

Schedule HJW-3D: Contract Sales Revenues

Line	Month	Southern			TOTAL
		DAFB Housing	Shores	Oceanview	
1	July 2013 Actual	7,847,000	0	5,674,000	13,521,000
2	August 2013 Actual	7,359,000	0	0	7,359,000
3	September 2013 Actual	8,155,000	3,538,000	0	11,693,000
4	October 2013 Actual	6,928,000	3,357,000	7,398,000	17,683,000
5	November 2013 Actual	6,989,000	1,659,000	0	8,648,000
6	December 2013 Actual	6,147,000	990,000	0	7,137,000
7	January 2014 Actual	6,779,000	1,771,000	5,012,000	13,562,000
8	February 2014 Actual	7,069,000	1,891,000	0	8,960,000
9	March 2014 Actual	6,223,000	1,277,000	0	7,500,000
10	April 2014 Projected	6,966,000	2,633,000	5,005,000	14,604,000
11	May 2014 Projected	6,750,000	3,000,000	0	9,750,000
12	June 2014 Projected	8,500,000	0	0	8,500,000
13	TOTAL (Gallons)	85,712,000	20,116,000	23,089,000	128,917,000
14	TOTAL (Thousand Gallons)	85,712	20,116	23,089	128,917
15	Rate (\$/Thousand Gallons)	\$ 11.8718	\$ 5.4335	\$ 4.6500	
16	DPA Annual Revenues	\$ 1,017,556	\$ 109,300	\$ 107,364	\$ 1,234,220
17	Company Contract Sales Revenues				\$ 1,261,117
18	DPA Adjustment				\$ (26,898)

Notes:

(1) Contract Sales data from DPA-A-100.

(2) Company Total Contract Sales Revenues from Schedule 3A, Page 2 of 3.

Schedule HJW-3E: Other Operating Revenues

Line	Item	Company As- Filed Test Period	DPA Adjustments	DPA Test Period
1	Turn On/Turn Off	\$ 268,845	\$ 43,232	\$ 312,077
2	Penalty	\$ 53,307	\$ 12,447	\$ 65,754
3	Return Check	\$ 24,821	\$ 1,218	\$ 26,039
4	Frozen/Broken Meter	\$ -	\$ 155	\$ 155
5	Service Fees	\$ 3	\$ 175	\$ 178
6	Meter Testing	\$ -	\$ 240	\$ 240
7	Rental Revenues	\$ -	\$ 25,092	\$ 25,092
8	Total Other Operating Revenues	\$ 346,976	\$ 82,559	\$ 429,535

Notes:

(1) Company Test Period Other Revenues from Schedule 3A, Page 1 of 3.

(2) DPA Test Period Other Operating Revenues, except for Rental Revenues, from DPA-A-101.

(3) Rental Revenues from Antenna Lease. DPA-A-93 and PSC-RR-12.

Schedule HJW-3F: Calculation of Connection Fee Revenues

Line	Size	Number	Rate	Revenues
1	5/8 & 3/4	1,043	\$ 956.45	\$ 997,577
2	1"	375	1,350.98	\$ 506,618
3	1-1/2"	2	2,379.19	\$ 4,758
4	2"	1	2,690.03	\$ 2,690
5	3"	-	8,608.10	\$ -
6	4"	-	10,126.47	\$ -
7	6"	2	14,716.93	\$ 29,434
8	8"	-	22,335.03	\$ -
9	DPA Total	1,423		\$ 1,541,077
10	Company Test Period Connection Fees			\$ 1,541,077
11	DPA Adjustment			\$ -

Notes:

(1) Number of customers and rates from MFR Schedule 3A, Page 3 of 3.

Schedule HJW-4: Operation & Maintenance Expense Summary

Line	Item	HJW	TUI Test Period		DPA	
		Reference Schedule	As-Filed	Adjustments	DPA Test Period	
1	Labor	HJW-4A	\$ 4,268,973	\$ (160,613)	\$ 4,108,360	
2	Power Purchased for Pumping	HJW-4D	\$ 506,631	\$ 57,196	\$ 563,827	
3	Chemicals	HJW-4D	\$ 432,410	\$ 48,817	\$ 481,227	
4	Treatment & Laboratory Services	HJW-4E	\$ 260,468	\$ 29,406	\$ 289,874	
5	Tank Painting	HJW-4F	\$ 76,871	\$ -	\$ 76,871	
6	Customer Record & Collection		\$ 666,825	\$ -	\$ 666,825	
7	Uncollectibles	HJW-4G	\$ 357,505	\$ 29,577	\$ 387,082	
8	Outside Services	HJW-4H	\$ 1,899,204	\$ (233,496)	\$ 1,665,708	
9	Property & Liability Insurance	HJW-4I	\$ 458,111	\$ (69,682)	\$ 388,429	
10	Employee Pension & Benefits	HJW-4J	\$ 2,563,917	\$ (595,827)	\$ 1,968,090	
11	Regulatory Commission	HJW-4K	\$ 326,129	\$ (45,564)	\$ 280,565	
12	Other	HJW-4L	\$ 2,249,673	\$ (45,315)	\$ 2,204,358	
13	Interest on Customer Deposits		\$ 9,187	\$ -	\$ 9,187	
14	Enterprise Resource Planning System	HJW-4M	\$ 789,426	\$ (66,872)	\$ 722,554	
TOTAL OPERATION & MAINTENANCE			\$ 14,865,330	\$ (1,052,373)	\$ 13,812,957	

Schedule HJW-4A: Test Period Labor

Line	Category	Allocation	TUI Test Period Wages	DPA Adjustments	DPA Allocation	DPA Test Period
	Employees Subject to April 2014					
1	Annual Wage Increase		\$ 5,964,445	\$ -		\$ 5,964,445
2	Adjustment for Vacancies		\$ -	\$ (49,115)		\$ (49,115)
	Employees Subject to Wage					
3	Progression Increase		\$ 126,131	\$ -		\$ 126,131
4	Total Base Wages		\$ 6,090,576	\$ (49,115)		\$ 6,041,461
5	Overtime		\$ 275,325	\$ -		\$ 275,325
6	Labor prior to Allocations		\$ 6,365,901	\$ (49,115)		\$ 6,316,786
7	Capitalized	-15.63%	\$ (994,990)	\$ (78,900)	-17.00%	\$ (1,073,891)
8	Subsidiaries	-17.31%	\$ (1,101,937)	\$ (32,598)	-17.96%	\$ (1,134,536)
9	Annualized Labor		\$ 4,268,973	\$ (160,613)		\$ 4,108,360

Notes:

- (1) TUI Test Period Data From Schedule 3B-1.
- (2) Adjustment for Vacancies from Schedule HJW-4B.
- (3) Allocations to Subsidiaries and Capitalized Labor from Schedule HJW-4C.

Schedule HJW-4B: Calculation of Vacancy Adjustment

Vacancies	Open	Filled	2011	2012	2013	2014
Position A	12/5/13	Open			0.9	3.5
Position B	8/15/13	Open			4.5	3.5
Position C	4/20/12	9/24/12		5.2		
Position D	7/6/12	12/15/12		5.3		
Position E	7/8/13	8/5/13			0.9	
Position F	11/15/13	2/10/14			1.5	1.3
Position G	12/18/12	3/5/13			0.4	2.1
Position H	8/26/11	2/27/12	4.2	1.9		
Total Person Months Vacant			4.2	12.4	8.3	10.4
Average Person-Month Vacancies						8.8
Base Wages (Schedule 3B-1, Line 1)					\$	5,964,445
Employees (DPA-A-32)						89
Average Wages Per Person-Month					\$	5,585
Adjustment for Average Vacancy Rate					\$	49,115

Notes:

(1) Position open and fill dates from PSC-RR-16.

(2) Positions "A" and "B" where shown as vacant on 4/15/2014 in PSC-RR-16.

Schedule HJW-4C: Calculation of Labor Allocation Ratios

	2009		2010		2011		2012		2013	
Base Payroll	\$	5,907,207	\$	6,180,326	\$	6,411,899	\$	5,841,009	\$	5,863,489
Overtime	\$	332,933	\$	400,899	\$	341,274	\$	260,876	\$	272,302
Total Payroll	\$	6,240,140	\$	6,581,225	\$	6,753,173	\$	6,101,885	\$	6,135,791
Allocations to:										
Subsidiaries/Transportation	\$	(1,031,663)	\$	(1,084,074)	\$	(1,263,377)	\$	(1,039,332)	\$	(1,113,099)
Capital	\$	(1,436,100)	\$	(1,348,989)	\$	(1,243,853)	\$	(940,221)	\$	(1,053,777)
Total Allocated	\$	(2,467,763)	\$	(2,433,063)	\$	(2,507,230)	\$	(1,979,553)	\$	(2,166,876)
Net Payroll	\$	3,772,377	\$	4,148,162	\$	4,245,943	\$	4,122,332	\$	3,968,915
Percentage Allocated										
Subsidiaries/Transportation		-16.53%		-16.47%		-18.71%		-17.03%		-18.14%
Capital		-23.01%		-20.50%		-18.42%		-15.41%		-17.17%
Three Year Average Allocated										
Subsidiaries/Transportation		-17.96%								
Capital		-17.00%								

Notes:

(1) Labor expense data from DPA-A-36.

Schedule HJW-4D: Calculation of Power and Chemical Adjustments

Line	Month	Test Period Consumption	Non-Revenue Water Allowance	Total Production	Purchased Water	Net Production
1	July 2013 Actual	151,523,000	85,172,469	236,695,469	4,750,000	231,945,469
2	August 2013 Actual	203,166,000	(15,085,173)	188,080,827	5,596,000	182,484,827
3	September 2013 Actual	220,497,000	(28,959,164)	191,537,836	2,454,000	189,083,836
4	October 2013 Actual	159,073,000	(4,947,019)	154,125,981	1,483,000	152,642,981
5	November 2013 Actual	172,346,000	(53,219,131)	119,126,869	1,691,999	117,434,870
6	December 2013 Actual	121,538,000	15,241,908	136,779,908	1,576,000	135,203,908
7	January 2014 Actual	120,323,000	24,756,732	145,079,732	1,707,000	143,372,732
8	February 2014 Actual	136,916,000	(12,600,871)	124,315,129	1,555,000	122,760,129
9	March 2014 Actual	107,866,000	17,782,255	125,648,255	1,399,000	124,249,255
10	April 2014 Projected	173,031,863	13,666,306	186,698,169	1,640,000	185,058,169
11	May 2014 Projected	224,060,717	17,696,638	241,757,355	2,590,000	239,167,355
12	June 2014 Projected	194,840,882	15,388,814	210,229,696	3,630,000	206,599,696
13	TOTAL	1,985,181,462	74,893,764	2,060,075,226	30,071,999	2,030,003,227

PURCHASED POWER ADJUSTMENT

14	Cost Per Gallon for Water Pumped	0.00027775
15	DPA Test Period Purchased Power	\$ 563,827
16	Company Test Period Purchased Power	\$ 506,631
17	DPA Adjustment	\$ 57,196

CHEMICAL ADJUSTMENT

18	Cost Per Gallon of Water Treated	0.0002371
19	DPA Test Period Chemicals	\$ 481,227
20	Company Test Period Chemicals	\$ 432,410
21	DPA Adjustment	\$ 48,817

Notes:

- (1) Test Period Consumption from Schedule HJW-3A. (GMS Sales Volume)
- (2) Non-Revenue Water Allowance represents 7.32% of Production per MFR Schedule 3B-2 for April through June 2014.
- (3) Actual Total Production Volumes from DPA-A-95.
- (3) Actual Purchased Water volumes from DPA-A-37 and DPA-A-97.
- (4) April through June 2014 Purchased Water from PSC-GEN-1.
- (5) Power cost per gallon pumped from MFR Schedule 3B-2, Line 4.
- (6) Company Test Period Purchased Power from MFR Schedule 3B-2, Line 5.
- (7) Chemical cost per gallon treated from MFR Schedule 3B-3, Line 8.
- (8) Company Test Period Chemical Cost from MFR Schedule 3B-3, Line 10.

Schedule HJW-4E: Treatment & Residuals Adjustment

Line	Item	Amount
1	Net Production (Gallons)	2,030,003,227
2	Cost Per Gallon	\$ 0.000142795
	DPA Test Period Treatment	
3	& Residuals	\$ 289,874
	Company Test Period	
4	Treatment & Residuals	\$ 260,468
5	DPA Adjustment	\$ 29,406

Notes:

- (1) Net Production volume from Schedule HJW-4D.
- (2) Cost Per Gallon from MFR Schedule 3B-4, Line 8.
- (2) Company Test Period Treatment & Residuals from MFR Schedule 3B-4, Line 10.

Schedule HJW-4F: Normalized Tank Painting Expense

Tank	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Cycle Total
Bethany Bay	\$ 281,297	\$ 1,791									\$ 283,088
Dickerson Farms			\$ 11,250								\$ 11,250
Nautical Cove				\$ 17,300							\$ 17,300
Business Park Kent City					\$ 10,586						\$ 10,586
Rehoboth									\$ 446,485		\$ 446,485
TOTAL	\$ 281,297	\$ 1,791	\$ 11,250	\$ 17,300	\$ 10,586	\$ -	\$ -	\$ -	\$ 446,485	\$ -	\$ 768,709

Normalized Annual Tank Painting Expense \$ 76,871

Notes:

(1) Tank painting history from DPA-A-86

Schedule HJW-4G: Uncollectibles

Line	Item	2009	2010	2011	2012	2013
1	GMS and Public Fire	\$ 17,447,125	\$ 19,502,174	\$ 19,943,308	\$ 22,439,370	\$ 22,942,485
2	Uncollectibles	\$ 368,000	\$ 325,000	\$ 305,000	\$ 383,192	\$ 318,000
3	Percent Uncollectible	2.1092%	1.6665%	1.5293%	1.7077%	1.3861%
4	Three-Year Average		1.5410%			
5	DPA Test Period GMS & Public Fire Revenues	\$	25,118,398			
6	DPA Uncollectibles	\$	387,082			
7	Company Test Period Uncollectibles	\$	357,505			
8	DPA Adjustment	\$	29,577			

Schedule HJW-4H: Adjustments to Test Period Outside Services

Line No.	Description of Expense	Company Test Period	DPA Adjustments	DPA Recommendation
1	Temporary Work Force	\$ 21,441	\$ -	\$ 21,441
2	Middlesex Water Company General Overhead Allocation	\$ 941,782	\$ (232,838)	\$ 708,944
3	Legal Fees	\$ 17,221	\$ -	\$ 17,221
4	Middlesex Water Company Shared Service	\$ 366,376	\$ -	\$ 366,376
5	Audit	\$ 43,643	\$ -	\$ 43,643
6	Tidewater General Overhead Allocation to Affiliates	\$ (221,987)	\$ 13,548	\$ (208,439)
7	Systems Support Allocation	\$ 717,941	\$ (14,205)	\$ 703,736
8	Consulting / Other	\$ 12,786	\$ -	\$ 12,786
	Total	\$ 1,899,203	\$ (233,495)	\$ 1,665,708

Notes:

(1) Adjustments to Middlesex Water Company General Overhead Allocation include the removal of SERP and Incentive Compensation costs from DPA-A-85. In addition, the 3% inflation adjustment identified in PSC-RR-62 has also been removed.

Test Period Amount	\$ 941,782
SERP Adjustment	\$ (153,000)
Executive Incentive Compensation - Removal of 100%	\$ (27,586)
Non-Executive Incentive Compensation - Removal of 100%	\$ (24,821)
Total SERP and Incentive Compensation Adjustments	\$ (205,407)
Net Amount including Inflation Adjustment	\$ 736,375
3% Inflation Adjustment from PSC-RR-62	\$ (27,431)
Net Amount	\$ 708,944

(2) Tidewater General Overhead Allocation to Affiliates adjusted to reflect adjustments to SERP and Incentive Compensation made on Line 2.

Test Period Amount	\$ (221,987)
SERP Adjustment	\$ 9,539
Executive Incentive Compensation - Removal of 30%	\$ 1,126
Non-Executive Incentive Compensation - Removal of 30%	\$ 2,883
Total SERP and Incentive Compensation Adjustments	\$ 13,548
Net Amount	\$ (208,439)

(3) Systems Support Allocation adjusted to remove SEP and Incentive Compensation Costs from DPA-A-85.

Test Period Amount	\$ 717,941
SERP Adjustment	\$ (11,069)
Executive Incentive Compensation - Removal of 100%	\$ (1,864)
Non-Executive Incentive Compensation - Removal of 100%	\$ (1,272)
Total SERP and Incentive Compensation Adjustments	\$ (14,205)
Net Amount	\$ 703,736

Schedule HJW-4I: Insurance Cost

Line No.	Description	Test Period As Filed	
1	Property	\$	60,927
2	General Liability	\$	90,592
3	General Liability - Umbrella	\$	56,281
4	Punitive Damages	\$	11,191
5	Workers Compensation	\$	157,651
6	Directors and Officers	\$	47,937
7	Pollution (A)	\$	13,562
8	Employment Practices	\$	19,968
9	Miscellaneous Claims	\$	-
10	Total	\$	458,111

Premium History

Year	Amount	
2009	\$	388,429
2010	\$	309,600
2011	\$	342,866
2012	\$	370,780
2013	\$	367,654
Average	\$	355,866
5-Year Maximum	\$	388,429
DPA Adjustment	\$	(69,682)

Notes:

- (1) Test Period as-Filed from MFR Schedule 3B-9.
- (2) Premium history from DPA-A-28.

Schedule HJW-4J: Pension and Benefits

Line No.	Description	Company 9+3 Test Period	DPA Adjustments	DPA Recommendation
1	Medical and Prescription	\$ 1,360,650		\$ 1,360,650
2	Dental	\$ 64,047		\$ 64,047
3	Long Term Disability	\$ 63,444		\$ 63,444
4	401 K Plan	\$ 175,658		\$ 175,658
5	Postretirement Benefits	\$ 215,378		\$ 215,378
6	Pensions	\$ 463,437	\$ (41,879)	\$ 421,558
7	Capitalized Benefits (Line Items 1, 2, 3, 5 & 6)	\$ (381,384)	\$ 20,108	\$ (361,276)
8	Employment Expenses	\$ 28,632	\$ -	\$ 28,632
9	Total Employee Benefits	\$ 1,989,861	\$ (21,772)	\$ 1,968,090

Notes:

- (1) Company Test Period Values from DPA-A-103.
- (2) Pension adjustment amount from DPA-A-103 removes SERP expense.
- (3) Capitalized Benefits allocation at 17% per Schedule HJW-4C.

Schedule HJW-4K: Regulatory Commission Expense

Line No.	Description	Company Test Period	DPA Adjustments	DPA Test Period
1	2013 Rate Case Expense	\$ 248,000	\$ (45,000)	\$ 203,000
2	2011 Rate Case (11-397)	\$ -	\$ -	\$ -
3	Management Audit Expense (4 Year 11-397)	36,521	\$ 0	\$ 36,521
4	Severance Costs (5 Year 11-397)	39,944	\$ 0	\$ 39,944
5	Regulatory Commission Expense	1,665	\$ (565)	\$ 1,100
		<u>\$ 326,129</u>	<u>\$ (45,564)</u>	<u>\$ 280,565</u>

Notes:

- (1) DPA Test Period 2013 Rate Case Expense represents the average of the as-filled rate case expense and the actual expense for the previous case. A two-year normalization period is used.
- (2) Regulatory Commission Expense is the average of the three years shown in PSC-RR-47.

Schedule HJW-4L: Other Expenses

Line No.	PSC Acc. No.	Description of Expense	Company Test Period at 9+3	DPA Adjustments	DPA Test Period
1	600	Operation Super. & Eng.	\$ -	\$ -	\$ -
2	601	Operation Expenses	\$ -	\$ -	\$ -
3	602	Purchased Water	\$ 138,533	\$ -	\$ 138,533
4	603	Miscellaneous Expenses	\$ -	\$ -	\$ -
5	610-616	Maintenance of Source of Supply	\$ 8,754	\$ -	\$ 8,754
6	620	Operation Super. & Eng.	\$ -	\$ -	\$ -
7	622	Power Production	\$ -	\$ -	\$ -
8	624	Pumping Expense	\$ 191,176	\$ -	\$ 191,176
9	626	Miscellaneous Expenses	\$ 230,619	\$ -	\$ 230,619
10	630-633	Maintenance of Power Prod. And Pumping Plant	\$ 118,473	\$ -	\$ 118,473
11	640	Operation Super. & Eng.	\$ -	\$ -	\$ -
12	642	Water Treatment	\$ 51,070	\$ -	\$ 51,070
13	643	Miscellaneous Expenses	\$ 16,664	\$ -	\$ 16,664
14	650	Maintenance Super. and Eng.	\$ -	\$ -	\$ -
15	651	Maintenance of Structures	\$ 1,550	\$ -	\$ 1,550
16	652	Maint. of Water Treatment Equipment	\$ 30,628	\$ -	\$ 30,628
17	660	Operation Sup. & Eng.	\$ 5,704	\$ -	\$ 5,704
18	661	Storage Facilities	\$ -	\$ -	\$ -
19	662	Transmission & Distribution Expenses	\$ 65,541	\$ -	\$ 65,541
20	663	Meter Expenses	\$ 11,682	\$ -	\$ 11,682
21	665	Miscellaneous Expenses	\$ 5,880	\$ -	\$ 5,880
22	670-678	Maintenance of Plant	\$ 172,825	\$ -	\$ 172,825
23	920	Administrative and General Salaries	\$ 157,700	\$ (117,016)	\$ 40,684
24	921	Administrative and General Other	\$ 189,396	\$ -	\$ 189,396
25	921	Office and Computer Supplies	\$ 38,126	\$ -	\$ 38,126
26	921	Telephone	\$ 262,096	\$ -	\$ 262,096
27	921	Utilities (Non-Telephone)	\$ 38,393	\$ -	\$ 38,393
28	921	Travel & Lodging	\$ 47,129	\$ -	\$ 47,129
29	930	Miscellaneous General Expenses	\$ 91,999	\$ -	\$ 91,999
30	931	Rent	\$ 357,504	\$ -	\$ 357,504
31	932	Maintenance of General Plant	\$ 89,932	\$ -	\$ 89,932
Total Operation and Maintenance - Other			\$ 2,321,374	\$ (117,016)	\$ 2,204,358

(1) Company Test Period expenses at 9+3 from DPA-A-105.

(2) Adjustment to Line 23 removes 100% of incentive compensation from DPA-A-85.

Schedule HJW-4M: ERP Lease Expense

Line No.	Item	Cost Rate	Expense
1	Income Taxes on Equity Portion		
2	Allocated ERP Cost as of June 30, 2014		4,273,837
3	Weighted Cost of Equity	<u>4.64%</u>	
4		\$	198,195
5	Factor for Income Taxes		<u>65.95%</u>
6	Income Taxes on Weighted Cost of Equity		<u>\$ 130,716</u>
			<u>Annual Recovery @ 6/30/2014</u>
7	Lease Cost		
8	Depreciation (Monthly Deprecation x 12)		\$ 296,484
9	Return (Allocated ERP Cost x ROR)	7.58%	324,157
10	Income Taxes on Equity Portion (above)		<u>130,716</u>
11			\$ 751,357
12	Affiliates Avoided Cost From Utilizing CCB System		<u>\$ (28,802)</u>
13	Net TUI ERP Lease Cost		\$ 722,554

Notes:

- (1) Allocated ERP Cost at June 30,2014 from MFR Schedule 3B-14.
- (2) Equity cost rate from Schedule HJW-5.
- (3) Income Tax Factor from MFR Schedule 3B-14.
- (4) Depreciation from MFR Schedule 3B-14.
- (5) ROR rate from Schedule HJW-5.
- (6) Affiliate Avoided Cost from MFR Schedule 3B-14.

Schedule HJW-5: Rate of Return

COMPANY PROPOSED TEST PERIOD - 06/30/14

	Ratio	Cost Rate	Weighted Cost
LONG TERM DEBT	49.04%	6.01%	2.95%
COMMON EQUITY	50.96%	10.95%	5.58%
	<u>100.0%</u>		<u>8.53%</u>

DPA RECOMMENDATION

	Ratio	Cost Rate	Weighted Cost
LONG TERM DEBT	49.04%	6.01%	2.95%
COMMON EQUITY	50.96%	9.10%	4.64%
	<u>100.0%</u>		<u>7.58%</u>

Notes:

- (1) Company proposed cost of capital from MFR Schedule 4.
- (2) DPA Recommendation from Testimony of Glenn Watkins.

Schedule HJW-6: Rate Base

Line No.	Item	Test Period As- Filed	DPA Adjustments	DPA Recommendation	Reference
1	Utility Plant	\$ 173,533,696	\$ (796,630)	\$ 172,737,066	HJW-6A
2	Accumulated Depreciation	\$ 23,928,171	\$ (10,612)	\$ 23,917,559	HJW-6B
3	Net Utility Plant	\$ 149,605,524	\$ (786,018)	\$ 148,819,507	
4	Materials and Supplies	\$ 130,758	\$ (6,218)	\$ 124,540	HJW-6C
5	Cash Working Capital	\$ 3,098,480	\$ (1,354,262)	\$ 1,744,218	HJW-6D
6	Deferred Income Taxes (property-related)	\$ (7,907,296)	\$ -	\$ (7,907,296)	
7	Subtotal	\$ 144,927,466	\$ (2,146,498)	\$ 142,780,968	
	Deductions:				
8	Customer Advances for Construction	\$ 15,562,398	\$ -	\$ 15,562,398	
9	Contributions in Aid of Construction	\$ 29,475,433	\$ -	\$ 29,475,433	
10	Customer Deposits	\$ 294,781	\$ -	\$ 294,781	
11	Total Deductions	\$ 45,332,612	\$ -	\$ 45,332,612	
12	Total Rate Base	\$ 99,594,854	\$ (2,146,498)	\$ 97,448,356	

Schedule HJW-6A: UPIS and Depreciation

Line No.	Acct. No.	Description	Test Period Depreciable Plant As-Filed	Depr. Rate	Test Period Depreciation	DPA Adjustments to UPIS	DPA Recommended UPIS Balance	DPA Test Period Depreciation
Intangible Plant								
1	301	Organization	\$ 9,079				\$ 9,079	\$ -
2	302	Franchise and Consents	\$ 695,322				\$ 695,322	\$ -
3	303	Misc Intangible Plant	\$ 6,958				\$ 6,958	\$ -
4		Total Intangible Plant	\$ 711,359			\$ -	\$ 711,359	\$ -
Source of Supply Plant								
5	310	Land & Land Rights	\$ 365,228				\$ 365,228	\$ -
6	314	Wells and Springs	\$ 3,953,467	2.37%	\$ 93,697		\$ 3,953,467	\$ 93,697
7	316	Supply Mains	\$ 25,383	1.39%	\$ 353		\$ 25,383	\$ 353
		Total Source of Supply Plant	\$ 4,344,078		\$ 94,050	\$ -	\$ 4,344,078	\$ 94,050
Pumping Plant								
9	320	Land & Land Rights	\$ 70,485				\$ 70,485	\$ -
10	321	Structures and Improvements	\$ 8,744,026	3.12%	\$ 272,814		\$ 8,744,026	\$ 272,814
11	323	Other Power Prod Equipment	\$ 639,656	3.36%	\$ 21,492		\$ 639,656	\$ 21,492
12	325	Electric Pumping Equipment	\$ 17,969,705	3.17%	\$ 569,640	\$ (150,000)	\$ 17,819,705	\$ 564,885
13	326	Diesel Pumping Equipment	\$ 2,999	5.39%	\$ 162		\$ 2,999	\$ 162
14		Total Pumping Plant	\$ 27,426,873		\$ 864,107	\$ (150,000)	\$ 27,276,873	\$ 859,352
Water Treatment Plant								
15	331	Structures & Improvements	\$ 268,070	2.89%	\$ 7,747		\$ 268,070	\$ 7,747
16	332	Water Treatment Equipment	\$ 7,528,057	2.89%	\$ 217,561		\$ 7,528,057	\$ 217,561
17		Total Water Treatment Plant	\$ 7,796,127		\$ 225,308	\$ -	\$ 7,796,127	\$ 225,308
Transmission & Dist Plant								
18	340	Land & Land Rights	\$ 2,119				\$ 2,119	\$ -
19	342	Distribution Res & Standpipes	\$ 13,245,831	1.61%	\$ 213,258		\$ 13,245,831	\$ 213,258
20	343	Transmission & Dist. Mains	\$ 41,217,048	1.43%	\$ 589,404	\$ (625,191)	\$ 40,591,857	\$ 580,464
21	345	Services	\$ 16,959,412	2.12%	\$ 359,540		\$ 16,959,412	\$ 359,540
22	346	Meters	\$ 4,553,934	4.63%	\$ 210,847		\$ 4,553,934	\$ 210,847
23	347	Meters Installations	\$ 440,680	3.49%	\$ 15,380		\$ 440,680	\$ 15,380
24	348	Hydrants	\$ 4,936,570	2.12%	\$ 104,655	\$ (21,439)	\$ 4,915,131	\$ 104,201
25		Total Transmission & Dist Plant	\$ 81,355,594		\$ 1,493,083	\$ (646,630)	\$ 80,708,964	\$ 1,483,689

General Plant

Schedule HJW-6A: UPIS and Depreciation

Line No.	Acct. No.	Description	Test Period		Test Period Depreciation	DPA Adjustments to UPIS	DPA Recommended Balance	UPIS	DPA Test Period Depreciation
			Depreciable Plant As-Filed	Depr. Rate					
26	389	Land & Land Rights	\$ 38,684				\$ 38,684	\$	-
27	390	Structures and Improvements	\$ 233,041	2.65%	\$ 6,176		\$ 233,041	\$	6,176
28	391	Office Furniture & Equipment	\$ 2,754,691	13.04%	\$ 359,212		\$ 2,754,691	\$	359,212
29	392	Transportation Equipment	\$ 2,188,709	12.99%	\$ 284,313		\$ 2,188,709	\$	284,313
30	394	Tools, Shop & Garage Equip.	\$ 676,408	7.17%	\$ 48,498		\$ 676,408	\$	48,498
31	395	Laboratory Equipment	\$ 71,338	6.76%	\$ 4,822		\$ 71,338	\$	4,822
32	396	Power Operated Equipment	\$ 279,917	10.19%	\$ 28,524		\$ 279,917	\$	28,524
33	397	Communication Equipment	\$ 276,083	12.15%	\$ 33,544		\$ 276,083	\$	33,544
34	398	Miscellaneous Equipment	\$ 342,963	9.09%	\$ 31,175		\$ 342,963	\$	31,175
35		Total General Plant	\$ 6,861,834		\$ 796,264	\$ -	\$ 6,861,834	\$	796,264
Total Depreciable Utility Plant			\$ 128,495,865		\$ 3,472,813	\$ (796,630)	\$ 127,699,235	\$	3,458,663
CAC & CIAC Balance at June 30, 2014							\$ 45,037,831		
TOTAL UPIS							\$ 172,737,066		

Schedule HJW-6B: Accumulated Depreciation

Line No.	Accnt No.	Description	Accumulated Depreciation As-Filed	DPA Adjustments	DPA Recommendation
1		Source of Supply Plant			
2	310	Land & Land Rights			
3	314	Wells and Springs	\$ 384,848	\$ -	\$ 384,848
4	316	Supply Mains	\$ (31,141)	\$ -	\$ (31,141)
5		Total Source of Supply Plant	\$ 353,707	\$ -	\$ 353,707
6		Pumping Plant			
7	320	Land & Land Rights			
8	321	Structures and Improvements	\$ 1,838,706	\$ -	\$ 1,838,706
9	323	Other Power Prod Equipment	\$ 266,923	\$ -	\$ 266,923
10	325	Electric Pumping Equipment	\$ 3,249,295	\$ (3,567)	\$ 3,245,728
11	326	Diesel Pumping Equipment	\$ 1,868	\$ -	\$ 1,868
12		Total Pumping Plant	\$ 5,356,791	\$ (3,567)	\$ 5,353,225
13		Water Treatment Plant			
14	331	Structures & Improvements	\$ 75,698	\$ -	\$ 75,698
15	332	Water Treatment Equipment	\$ 1,488,675	\$ -	\$ 1,488,675
16		Total Water Treatment Plant	\$ 1,564,373	\$ -	\$ 1,564,373
17		Transmission & Dist Plant			
18	340	Land & Land Rights	\$ -	\$ -	\$ -
19	342	Distribution Res & Standpipes	\$ 1,728,411	\$ -	\$ 1,728,411
20	343	Transmission & Distribution Mains	\$ 5,154,964	\$ (6,705)	\$ 5,148,258
21	345	Services	\$ 2,737,635	\$ -	\$ 2,737,635
22	346	Meters	\$ 1,597,501	\$ -	\$ 1,597,501
23	347	Meters Installations	\$ 172,014	\$ -	\$ 172,014
24	348	Hydrants	\$ 806,410	\$ (340)	\$ 806,070
25		Total Transmission & Dist Plant	\$ 12,196,935	\$ (7,046)	\$ 12,189,889
26		General Plant			
27	389	Land & Land Rights	\$ -	\$ -	\$ -
28	390	Structures and Improvements	\$ 50,209	\$ -	\$ 50,209
29	391	Office Furniture & Equipment	\$ 1,705,931	\$ -	\$ 1,705,931
30	392	Transportation Equipment	\$ 1,598,846	\$ -	\$ 1,598,846
31	394	Tools, Shop and Garage Equipment	\$ 289,505	\$ -	\$ 289,505
32	395	Laboratory Equipment	\$ 36,859	\$ -	\$ 36,859
33	396	Power Operated Equipment	\$ 285,727	\$ -	\$ 285,727
34	397	Communication Equipment	\$ 227,808	\$ -	\$ 227,808
35	398	Other Tangible Equipment	\$ 261,481	\$ -	\$ 261,481
36		Total General Plant	\$ 4,456,366	\$ -	\$ 4,456,366
37		Total Accumulated Depreciation	\$ 23,928,171	\$ (10,612)	\$ 23,917,559

Notes:

(1) As-Filed Amounts from MFR Schedule 2C.

Schedule HJW-6C: Materials & Supplies Balance

Line No.	Month	Balance
1	January	\$ 136,277
2	February	\$ 122,545
3	March	\$ 127,799
4	April	\$ 121,572
5	May	\$ 121,007
6	June	\$ 122,247
7	July	\$ 119,114
8	August	\$ 123,194
9	September	\$ 126,539
10	October	\$ 125,216
11	November	\$ 125,667
12	December	\$ 123,297
13	Average	\$ 124,540

Notes:

(1) Monthly Materials and Supplies Balance for 2013 from PSC-RR-56.

Schedule HJW-6D: Cash Working Capital

Description	Company Calculation As-Filed			DPA Calculation			
	Actual 2012	Lead / Lag Days	Weighted Amount	Test Period	Lead / Lag Days	Weighted Amount	Reference
Operating Revenues	\$ 26,458,216	<u>50.40</u>			<u>50.40</u>		
Operating Expenses							
Operation and Maintenance Expenses	14,518,043	12.42	180,314,094	13,812,957	12.42	171,556,931	HJW-4
Depreciation and Amortization Expenses	3,055,747	-	-	-	-	-	
Taxes Other than Income	650,391	2.28	1,482,892	749,730	2.28	1,709,384	HJW-7
State Income Taxes	478,031	(12.09)	(5,779,395)	672,861	(12.09)	(8,134,889)	HJW-8
Federal Income Taxes	1,728,242	36.28	62,700,611	2,400,797	36.28	87,100,915	HJW-8
Invested Capital	6,027,762	-	-	-	-	-	
Total Requirement	26,458,216	9.02	238,718,202	17,636,345	14.30	252,232,341	
Net Lead(Lag) Days		41.38			36.10		
Daily Requirements (Total Req./365 Days)			72,488			48,319	
Cash Working Capital Requirement			\$ 2,999,386			\$ 1,744,218	
DPA Adjustment						\$ (1,255,168)	
Comparison to 1/8th Method							
CWC Using 1/8th Method	\$ 1,726,620						
CWC Using Lead/Lag	\$ 1,744,218						
(Increase (Reduction) Using Lead/Lag	\$ 17,598						

Schedule HJW-7: Other Taxes

Line No.	Description of Expense	Test Period As Filed	DPA Adjustments	DPA Recommendation
1	FICA	\$ 356,042	\$ -	\$ 356,042
2	Delaware Unemployment	\$ 17,388	\$ -	\$ 17,388
3	FUTA	\$ 3,864	\$ -	\$ 3,864
4	Real Estate	\$ 282,906	\$ -	\$ 282,906
5	Other	\$ 1,570	\$ -	\$ 1,570
6	PSC Assessment	\$ 81,227	\$ 6,733	\$ 87,960
7	Total Taxes	\$ 742,997	\$ 6,733	\$ 749,730

Schedule HJW-8: State & Federal Income Taxes

Line No.	Description	Test Period As- Filed (2)	DPA Adjustments	DPA Recommendation	Reference
1	Operating Revenues	\$ 27,075,536	\$ 2,244,316	\$ 29,319,852	HJW-3
	Less:				
2	Operation and Maintenance expenses	14,864,696	\$ (1,051,738)	\$ 13,812,957	HJW-4
3	Depreciation and Amortization expense	3,472,813	\$ (14,150)	\$ 3,458,663	HJW-6A
4	Taxes Other than Income	742,997	\$ 6,733	\$ 749,730	HJW-7
5	Interest Charges	2,938,048	\$ (65,976)	\$ 2,872,072	
6	Section 199 IRC "Qualified Production Activities Deduction"	415,532	\$ 276,867	\$ 692,400	HJW-8A
7	Total Deductions	<u>22,434,086</u>	<u>\$ (848,263)</u>	<u>\$ 21,585,823</u>	
8	Taxable Income - State	<u>4,641,450</u>	<u>\$ 3,092,579</u>	<u>\$ 7,734,029</u>	
9	State Income Tax @ 8.7%	<u>\$ 403,806</u>	<u>\$ 269,054</u>	<u>\$ 672,861</u>	
10	Taxable Income - Federal	4,237,644	\$ 2,823,525	7,061,168	
11	Federal Income Tax @ 34.0% - Current	<u>\$ 1,440,799</u>	<u>\$ 959,998</u>	<u>\$ 2,400,797</u>	
12	Rate Base	\$ 99,594,854	\$ (2,146,498)	\$ 97,448,356	
13	Weighted Cost of Debt	2.95%	0.00%	2.95%	HJW-5
14	Interest Expense	<u>\$ 2,938,048</u>	<u>\$ (65,976)</u>	<u>\$ 2,872,072</u>	

Schedule HJW-8A: Qualified Production Activities Deduction

	<u>Test Period As-Filed</u>	<u>DPA Adjustments</u>	<u>DPA Recommendation</u>	<u>Reference</u>
<u>Water Consumption Revenues:</u>				
Residential	21,086,326			
Commercial	-			
Industrial	-			
PFS	976,304			
Contract	1,261,117			
Total	<u>23,323,748</u>	<u>4,025,492</u>	<u>27,349,240</u>	HJW-3
<u>Costs of Production:</u>				
Source of Supply	146,370		146,370	
Pumping	820,364	\$ 57,196	877,560	HJW-4D
Water Treatment	755,941	\$ 78,223	834,163	HJW-4D/4E
Total	<u>1,722,675</u>		<u>1,858,094</u>	
Qualified Production Activities Income	<u>21,601,073</u>		<u>25,491,146</u>	
Operating revenues	27,075,536	\$ 2,244,316	\$ 29,319,852	HJW-3
Total deductions (Excluding 199 deduction/QPAD)	<u>22,018,554</u>	<u>\$ (1,125,130)</u>	<u>\$ 20,893,423</u>	HJW-8
Taxable income - State	5,056,982	\$ 3,369,447	8,426,429	
State income tax @ 8.7%	439,957	\$ 293,142	733,099	
Bonus Depreciation	-	\$ -	-	
Taxable income - Federal	<u>4,617,025</u>	<u>\$ 3,076,305</u>	<u>7,693,329</u>	
W-2 Wages (estimate)	4,268,337		4,268,337	
Deduction is the lesser of 9% of QPAI or Taxable Income and is limited to 50% of W-2 Wages				
9% of QPAI	1,944,097		2,294,203	
9% of Taxable Income	415,532		692,400	
50% of W-2 Wages	2,134,169		2,134,169	
Smaller of 9% of QPAI or Taxable Income	415,532		692,400	
Qualified Production Activities Deduction	<u>415,532</u>		<u>692,400</u>	
Qualified Production Activities Use	<u>415,532</u>		<u>692,400</u>	