BEFORE THE
STATE OF NEW JERSEY
BOARD OF PUBLIC UTILITIES

In the Matter of:

THE PETITION OF NEW JERSEY AMERICAN WATER COMPANY FOR AUTHORIZATION TO IMPLEMENT A DISTRIBUTION SYSTEM IMPROVEMENT CHARGE	**BPU DOCKET NO. WO08050358**

DIRECT TESTIMONY

HOWARD J. WOODS, JR., P.E.

ON BEHALF OF THE
NEW JERSEY
DEPARTMENT OF THE PUBLIC ADVOCATE
DIVISION OF RATE COUNSEL

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New Jersey American Water Company
BPU Docket No. WO08050358
Direct Testimony of Howard J. Woods, Jr., P.E.

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I. STATEMENT OF QUALIFICATIONS

Q. PLEASE STATE YOUR NAME AND ADDRESS.

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

Q. BY WHOM ARE YOU EMPLOYED?

A. I am an independent consultant and the Department of the Public Advocate, Division of Rate Counsel has engaged me in this matter.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL QUALIFICATIONS.

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

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

A. Yes. I have testified in numerous rate setting proceedings and quality of service evaluations in matters before the Public Utility Commissions in New Jersey, New York, Connecticut, Delaware and Kentucky. The focus of my testimonies is on matters involving utility operations, planning and engineering.

Q. PLEASE DESCRIBE YOUR PROFESSIONAL EXPERIENCE.

A. A detailed description of my professional experience is provided in Appendix A of this Testimony. In summary, I have over 30 years experience in the planning, design, construction and operation of water and wastewater utility systems. I have worked for a Federal regulatory agency, a large investor-owned water and wastewater utility, a firm engaged in contract operations of municipally-owned water and wastewater utilities, and in engineering and operational consulting for the water and wastewater industry. During my career, I have been responsible for all operations functions including regulatory compliance, production, distribution and maintenance services.

II. SCOPE AND PURPOSE OF TESTIMONY

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

A. I have been engaged by the Department of the Public Advocate, Division of Rate Counsel to review the proposal by New Jersey American Water Company to implement a Distribution System Improvement Charge (hereafter "DSIC").

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

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

III. SUMMARY OF FINDINGS AND CONCLUSIONS

Q. HAVE YOU REVIEWED NEW JERSEY AMERICAN WATER COMPANY'S PETITION TO IMPLEMENT A DSIC CHARGE?

A. Yes, I have.

Q. WHAT DOES THE COMPANY'S FILING AND THEIR PRE-FILED TESTIMONY REQUEST?

A. The Company proposes to implement a DSIC that will result in self implementing, provisional rate adjustments each calendar quarter. Compliance Filings will be made within sixty days of the close of each calendar quarter and these filings will include new tariff sheets and supporting calculations for the increased provisional tariff rates. At the close of each calendar year, the Company proposes to file a petition to make the provisional rates permanent. The Company proposes to apply the DSIC as a percentage of each customer's bill and that percentage will not exceed 7.5% of the Company's gross revenues from the prior year, exclusive of DSIC charges. The Company's proposal seeks to make an extensive list of utility plant items eligible for DSIC treatment and some of these items are not distribution system components. In base rate proceedings, items previously the subject of DSIC charges will be reflected in Utility Plant in Service and base rates and the DSIC will be reset to zero.

Q. DO YOU BELIEVE THAT THE PETITION TO ALLOW A DSIC SHOULD BE GRANTED?

A. No. The proposal will create a maze of provisional, permanent and base rates. It will effectively increase the number of rate related proceedings filed with this Board and will do nothing to reduce the Company's need to file frequent base rate adjustment proceedings. The proposal is founded on a construction program that favors replacement over strategies that seek to extend the service life of existing water mains. DSIC will effectively segregate planning for distribution system replacements from that required for the Company's overall construction program and create an incentive to invest in DSIC eligible plant over non-eligible plant. This bias may not be a true reflection of the prioritization that would naturally be reflected in a consolidated construction program. As evidence that a shifting in priorities would occur, the Company has indicated it would increase its investments in DSIC eligible plant. If the Company increases its investments in DSIC eligible plant while maintaining the same level of investments in non-eligible plant, the result will most certainly be higher customer rates than those that would be fair and reasonable without DSIC in place. The Board has not taken any action to disallow timely investments made by the Company in distribution improvements. The existing rate making procedures allow the Company to earn a fair rate of return on investments made in distribution assets when those assets are placed in service prior to the conclusion of a base rate case Test Year. There is no need to alter the existing rate setting procedures to incentivize work that would otherwise be done and reflected in rates in the normal course of business.

Q. DOES THE COMPANY'S PETITION CONTEMPLATE THE RECOGNITION OF PLANT INVESTMENTS BEYOND ITEMS OF UTILITY PLANT NORMALLY VIEWED AS IMPROVEMENTS TO EXISTING DISTRIBUTION NETWORKS?

A. Yes. The Company's proposal seeks to make improvements in replacement wells, water storage tanks, regional water supply mains, emergency interconnections, replacement pumping stations, security improvements and leak detection equipment. In addition, the Company's proposal seeks to allow DSIC treatment for relocated facilities without indicating that some relocation costs are refunded by third parties.

Q. DOES THE COMPANY'S PROPOSAL ALSO ADDRESS WASTEWATER SYSTEM IMPROVEMENTS?

A. Yes. The Company's proposal also requests DSIC eligibility for replacement manholes, replacement sewer lift stations and replacement mains. Replacement lift stations are beyond the scope of collection system improvements.

Q. DOES THE COMPANY'S PROPOSAL DIFFERENTIATE BETWEEN IMPROVEMENTS MADE TO WATER SYSTEMS AND TO ITS SEWER SYSTEMS?

A. No. Because no effort has been made to segregate theses costs, the DSIC surcharge rate would include in factor "NRB" the cost of both sewer and water improvements

while also comingling sewer and water revenues in factor "AR." Therefore, customers who take only water service from the Company would be paying for improvements made to the Company's sewer systems and customers who are only sewer customers would be paying for water improvements in their sewer DSIC charges.

Q. WHAT IS YOUR RECOMMENDATION REGARDING THE PROPOSAL TO IMPLEMENT A DSIC?

A. The Board should not approve the Company's proposal. Rather, the Board should implement a focused management audit of the Company's capital planning and construction programs to identify those practices that could be implemented by the Company to extend the life of its assets. The Company's actual experience in recent years suggests a bias toward capital replacement rather than service life extension investments. Furthermore, recent data for main breaks and service breaks do not suggest a need to embark on an accelerated replacement program. Enhancements to the Company's service life extension efforts and improved data management should be identified and implemented before the Company is granted its wish for an incentivized rate setting mechanism that is not needed.

IV. THE DSIC PROPOSAL

Q. PLEASE DESCRIBE THE COMPANY'S DSIC PROPOSAL?

A. The Company's Petition proposes to impose a DSIC that will be a self-implementing rate increase adjusted quarterly.[1] At the close of each calendar year, also defined in the Petition as the "DSIC Year,"[2] the Company will file a petition with the Board to make the provisional quarterly DSIC rates from the preceding year permanent. At the conclusion of base rate filings, the DSIC rate will be set to zero and the utility plant previously addressed in the DSIC surcharges will be reflected as Utility Plant in Service for purposes of setting new base rates.[3]

Q. IF THE COMPANY'S PETITION IS APPROVED, WHAT WOULD A TYPICAL CUSTOMER WATER BILL RECOVER?

A. A typical customer bill currently includes base rate fixed service charges and volumetric charges established periodically through base rate proceedings. In addition, with the exception of Manasquan and fire protection customers, each water customer bill includes Purchased Water Adjustment Clause (PWAC) charges set annually. If this Board approves the Company's DSIC proposal, customer water bills would also contain a surcharge for water and sewer system improvements that increases each calendar quarter. This surcharge would be composed of permanent and provisional DSIC charges between base rate filings. At the conclusion of a

[1] Petition, Paragraph 33.
[2] Petition, Paragraph 32.
[3] Petition, Paragraph 50.

base rate filing, the DSIC charges previously imposed as self implementing rate adjustments would be rolled into the base rates coming out of the base rate filing. Eligible investments made in plant not addressed by the base rate filing (e.g. post Test Year additions) would be reflected in new DSIC surcharges implemented on a provisional basis in addition to the adjusted base rates approved by this Board.

Q. HAS THE COMPANY PROVIDED ANY SAMPLE CALCULATIONS OF THE DSIC SURCHARGES THAT WOULD APPEAR ON CUSTOMER WATER BILLS?

A. Yes, the response to RCR-E-26 shows several examples. In the case of a customer served through a 5/8-inch meter, who also uses 7,000 gallons per month, the fixed service charge ($9.00), the volumetric charge ($37.68) and the PWAC charge ($2.57) would amount to $49.25 per month. In the example presented in RCR-E-26, the DSIC surcharge would be 1.57% of this total or an additional $0.77. Given that the Company has proposed a 7.5% cap on the DSIC surcharge[4], the additional amount added to the bill could represent as much as a 7.5% self-implemented rate increase or $3.69 per month.

Q. IF THE COMPANY'S PETITION IS APPROVED, WHAT WOULD A TYPICAL CUSTOMER SEWER BILL RECOVER?

A. A typical customer bill currently includes base rate fixed service charges and volumetric charges established periodically through base rate proceedings. The

[4] Petition, Paragraph 44.

method of computing the volumetric charges varies according to the approved tariff in each of the Company's sewer service areas. In Lakewood, the volumetric sewer charges levied in January, February and March are based on actual water meter readings while in the months of April through December, the volumetric charges are based on the monthly usage constant, which is equal to one third of the water consumption recorded in the months of January through March.[5] In addition, each sewer customer bill includes Purchased Sewage Treatment Adjustment Clause (PSTAC) charges set annually. If this Board approves the Company's DSIC proposal, customer sewer bills would also contain a surcharge for water and sewer improvements that increases each calendar quarter. This surcharge would be composed of permanent and provisional DSIC charges between base rate filings. At the conclusion of a base rate filing, the DSIC charges previously imposed as self implementing rate adjustments would be rolled into the base rates coming out of the base rate filing. Eligible investments made in plant not addressed by the base rate filing (e.g. post Test Year additions) would be reflected in new DSIC surcharges implemented on a provisional basis in addition to the adjusted base rates approved by this Board.

Q. HAS THE COMPANY PROVIDED ANY SAMPLE CALCULATIONS OF THE DSIC SURCHARGES THAT WOULD APPEAR ON CUSTOMER SEWER BILLS?

[5] BPU Docket No. WR08010020 Tariff First Revised Sheet No. 84 dated December 8, 2008.

A. Yes, the response to RCR-E-26 shows several examples. In the case of a Lakewood customer provided water service through a 5/8-inch meter and also provided sewer service, who uses 6,000 gallons of water per month, the fixed service charge for water ($9.00), the volumetric water charge ($32.30) and the PWAC charge ($2.21) would amount to $43.51 per month. In the example presented in RCR-E-26, the DSIC surcharge for water would be 1.57% of this total or an additional $0.68. The sewer portion of the bill would include a fixed sewer service charge ($15.06), a base rate volumetric charge ($20.46), and a nearly equal PSTAC charge ($20.42) for a total of $55.94. In the example provided in RCR-E-26, the DSIC charge applied to the sewer portion of the bill would be 1.57% of the sewer charges or $0.88. Total DSIC surcharges for this customer would amount to $1.56 per month. Given that the Company has proposed a 7.5% cap on the DSIC surcharge[6], the additional amount added to the bill could represent as much as a 7.5% self-implemented rate increase or $3.26 per month for water and $4.20 for sewer for a total of $7.46 per month.

Q. DOES THE COMPANY'S PROPOSED DSIC MECHANISM RESULT IN CROSS-SUBSIDIZATION OF WATER AND SEWER SERVICES?

A. Yes it does. The proposal makes no distinction between water or sewer improvements and simply aggregates all eligible improvements in a single DSIC factor by including the cost of these improvements in factor "NRB."[7] Similarly,

[6] Petition, Paragraph 44.
[7] Petition, Paragraph 30.

revenues from sewer and water charges are comingled in a single factor "AR."[8] As a result of this proposed mechanism, water customers would be paying for the cost of capital and depreciation on sewer assets and sewer customers would be paying for the cost of capital and depreciation on water assets through the DSIC rate adjustments until the Company files a new base rate adjustment petition and is granted rate relief by this Board.

Q. HOW WOULD THIS CROSS-SUBSIDIZATION BE ADDRESSED IN BASE RATE PROCEEDINGS?

A. There is no true-up mechanism in the Company's proposal that would compensate customers to the extent they have paid for a service they have not enjoyed nor is there any mechanism to levy additional charges on customer bills to recover costs for services paid for by other customers. Rather, the base rate proceeding would simply wipe the slate clean by properly accounting for the specific plant used in providing water or sewer services. This would be done by establishing new base rates reflecting the capital costs and depreciation expense associated with the actual plant in service balances associated with each specific service.

Q. HAS THE COMPANY EXPLAINED WHY A BLENDED RATE WAS PROPOSED RATHER THAN SPECIFIC DSIC RATES FOR WATER AND SEWER?

[8] Ibid.

A. Yes, the Company claims the administrative burden of maintaining separate DSIC charges for water and sewer service cannot be justified.[9]

Q. HAS THIS BOARD APPROVED ANY OTHER CLAUSES THAT ADDRESS ONLY WATER OR ONLY SEWER CHARGES?

A. Yes, the Board has approved PSTAC surcharges to recover the expense of wastewater treatment expenses on sewer bills and they have approved PWAC surcharges to recover the cost of purchased water expenses on water bills. [10] The Company has availed itself of both mechanisms.

Q. SHOULD A SIMILAR APPROACH BE TAKEN WITH RESPECT TO DSIC CHARGES?

A. It is my recommendation that no DSIC clause be approved as a result of this proceeding. However, if the Board chooses to establish some type of DSIC clause now or in the future, it should clearly segregate costs associated with water service from costs associated with sewer service.

Q. WHAT ITEMS OF UTILITY PLANT HAS THE COMPANY PROPOSED TO INCLUDE AS ELIGIBLE PLANT FOR THE PURPOSE OF CALCULATING THE DSIC SURCHARGE?

[9] Response to RCR-E-4.
[10] N.J.A.C. 14:9-7.1 et. seq.

A. The Company has proposed to make an extensive list of utility plant items eligible for inclusion in the DSIC surcharge. The proposal makes the following items of water utility plant eligible for inclusion in the DSIC surcharge calculations: replacement water mains, replacement valves, replacement services, replacement meters, replacement hydrants, new mains installed to eliminate existing dead-end mains, new mains installed to address regional water supply issues, new mains installed to address health and safety concerns, the cleaning and relining of existing water mains, the relocation of existing facilities without limitation, the construction of replacement wells, the purchase of leak detection equipment, the replacement of existing distribution storage tanks, pressure reducing projects, emergency interconnection projects, replacement pump stations and critical infrastructure security projects. In addition, the Company also proposed to include the following items of sewer utility plant in the DSIC surcharge calculations: replacement mains, replacement services, new mains to address health and safety concerns, the cleaning and relining of existing mains, the relocation of existing facilities without limitation, replacement manholes, replacement sewer lift stations and critical infrastructure security projects.[11]

Q. IS SUCH AN EXPANSIVE LIST OF PROJECTS JUSTIFIED?

A. No. While the Company claims that the intent of the DSIC mechanism is to recover the cost of projects that are not revenue producing and projects that will not

[11] Petition, Paragraph 46.

reduce expenses,[12] nearly all of the items in this list have the potential to produce new revenues or reduce operating costs. In some instances, replacing existing water mains, valves or services can reduce leakage from the system. To the extent that real losses from the system are eliminated, the Company's source or supply, pumping and treatment expenses will be lowered incrementally. The DSIC mechanism has no means of flowing the benefit of reduced operating costs to customers. While customers will be asked to tolerate quarterly increases in rates to fund the construction of such projects, they will be forced to wait until base rates are adjusted in the future to see any benefit.

To the extent that tuberculated unlined cast iron mains are replaced or cleaned and relined, system pressures in the vicinity of such renovation work are likely to be improved during high demand conditions. Improved pressure can lead to higher customer use and this could mean added revenues for the Company. Meter replacements can also result in increased revenues. This may be particularly true when the meters being replaced are poorly maintained meters the Company has acquired through a recent acquisition. While the customers may be supporting the acquisition in base rates, the DSIC mechanism proposed by the Company would have them bear quarterly rate increases to fund a meter replacement program. The benefit of any additional revenues resulting from more accurate measurement of actual use or improved pressures and flows in high demand conditions would not be reflected until the Company's next base rate adjustment.

[12] Petition, Paragraph 46.

While the Company claims that the intent of the DSIC mechanism is to recover the cost of projects that are not revenue producing, the construction of new mains to eliminate dead-ends, the construction of new mains to address regional water supply issues and the construction of new mains to address health and safety concerns will make service available to previously un-served properties and to new communities. The DSIC mechanism, as it is proposed, would allow self-implementing quarterly rate increases to take effect for such projects.

The construction of replacement pump stations and sewer lift stations and the construction of replacement wells should generate efficiencies that the existing facilities do not enjoy. If the replacements do not lower maintenance and repair costs or operating expenses, it would only be logical to undertake the replacement if expanded capacity were needed.

The costs of water and sewer main relocations are often reimbursed by the third party requiring the relocation. These projects should not be afforded DSIC treatment. The proposal does not clearly indicate that DSIC eligible relocations are limited to water and sewer mains that must be relocated at Company expense. In fact, the proposal itemizes "relocation of existing facilities,"[13] and this could be broadly interpreted to include items of plant beyond water or sewer mains such as offices or maintenance facilities.

[13] Petition, Paragraph 46.

V. IMPACT OF THE PROPOSAL ON RATE FILINGS

Q. HAS THE COMPANY INDICATED WHAT PORTION OF ITS PAST CAPITAL EXPENSES WOULD HAVE BEEN ELIGIBLE FOR DSIC TREATMENT UNDER THE CURRENT PROPOSAL?

A. Yes. In its Petition, the Company stated that the average capital expenditures for DSIC eligible plant over the past five years were $35.6 million per year and that this was part of a total capital expense program that averaged $126.5 million per year.[14] In its November 19, 2008 response to RCR-E-1, the Company indicated that for the 2004 through 2008 period, DSIC eligible expenses averaged $39.77 million while total capital expenses averaged $147 million. The Company invested over $107 million per year in non-DSIC eligible plant over this period of time.[15]

Q. CONSIDERING THE 2004 THROUGH 2008 PERIOD, WHAT PORTION OF THE COMPANY'S CONSTRUCTION PROGRAM WOULD NOT BE DSIC ELIGIBLE UNDER THE COMPANY'S DSIC PROPOSAL?

A. The average expenditure of $107 million per year represents approximately 73% of the Company's average total annual capital expenditures for this period.

[14] Petition, Paragraph 4.
[15] Response to RCR-E-22.

Q. HAS THE COMPANY OFFERED ANY OPINION AS TO THE MANNER IN WHICH THE DSIC PROPOSAL WOULD IMPACT THE NEED TO FILE FOR BASE RATE ADJUSTMENTS?

A. Yes, the Company has stated that "the DSIC will not have an effect on the frequency of the Company's rate cases."[16]

Q. HOW FREQUENTLY HAVE BASE RATES BEEN ADJUSTED FOR THE COMPANY?

A. The Company received base rate adjustments in 2004, 2007 and 2008.[17] Three adjustments in five years average out to a base rate adjustment every 20 months.

Q. ASSUMING THAT THE DSIC DOES NOT CHANGE THE COMPANY'S BASE RATE FILING FREQUENCY, PLEASE DESCRIBE THE RATE RELATED PETITIONS THE COMPANY WILL HAVE BEFORE THIS BOARD AT ANY GIVEN TIME.

A. The Company will have annual PWAC and PSTAC filings before the Board, generally between the months of February and April. The DSIC proposal suggests that an initial Compliance Filing will be made as soon as the Board approves the DSIC mechanism and this filing will begin recovering all items of eligible plant that are not currently included in the base rates[18] approved on December 8, 2008. Thereafter, quarterly Compliance Filings will be made with the Board, but these

[16] Response to RCR-E-23.
[17] Response to RCR-E-30.
[18] Petition, Paragraph 33.

will not be subject to review. According to the proposal, the DSIC Year is set as January 1 through December 31.[19] Within sixty days of the close of the DSIC Year, the Company will file a petition to make the provisional DSIC rates permanent.[20] Therefore, the Company will have annual DSIC petitions before the Board at about the same time that its PWAC and PSTAC petitions are being filed. Assuming that the most recent base rate filing is a reasonable indicator of the time required between a filing (January 14, 2008) and a final Order (December 8, 2008), the Company would need to file for another base rate adjustment sometime within the next eight to nine months if it expected a rate Order within 20 months of the most recent Order.

Q. GIVEN THESE OVERLAPPING SCHEDULES, WHAT CAN THE CUSTOMERS EXPECT IN THE WAY OF RATE ADJUSTMENTS?

A. They will see four DSIC related rate increases every year, one PWAC or PSTAC increase every year and one base rate adjustment every other year.

Q. DO YOU BELIEVE THAT THIS ADJUSTMENT SCHEDULE WILL HAVE ANY BENEFIT TO CUSTOMERS?

A. No. It is likely to increase overall rate filing costs because the base rate case filing schedule will not change and new costs will be added for the quarterly compliance filings and the annual DSIC petitions.

[19] Petition, Paragraph 32.
[20] Petition, Paragraph 36.

VI. CAPITAL PLANNING AND CONSTRUCTION ACTIVITIES

Q. HAS THE COMPANY PROVIDED A SUMMARY OF RECENT CAPITAL EXPENDITURES THAT WOULD QUALIFY FOR DSIC TREATMENT UNDER ITS PROPOSAL?

A. Yes. Several of the Company's discovery responses do this. The period from 2004 through 2008 inclusive is covered in the November 19, 2008 response to RCR-E-1 and this response addresses all DSIC eligible projects undertaken in this period. The period from 2003 through 2007 is addressed in the response to SE-7 and this data response focuses on main replacement projects.

Q. WHAT IS THE TYPICAL ANNUAL INVESTMENT MADE IN DSIC ELIGIBLE PLANT?

A. The data provided in response to RCR-E-1 (November 19, 2008) indicates that the Company spends an average of $39,771,000 per year on DSIC eligible plant.

Q. DO ANY OF THE COMPANY'S INVESTMENTS FOCUS ON EXTENDING THE SERVICE LIFE OF ITS ASSETS RATHER THAN ON SIMPLE REPLACEMENT?

A. Yes. The supplemental response to RCR-E-1 (December 11, 2008) provides some additional detail regarding cleaning and relining efforts and cathodic protection installations. The cleaning and relining programs averaged $4,380,000 per year, or

11% of the DSIC eligible expenses recorded between 2004 and 2008. Over the same period only two sewer projects, the West Avenue Sewer Relining project and a manhole lining project, were undertaken. The combined cost of these two sewer projects was $400,000, or only 0.17% of the DSIC eligible program undertaken over these five years.[21] Therefore, only about 11.5% of the Company's DSIC eligible program is focused on service life extension rather than replacement.

Q. HAS THE COMPANY UNIFORMLY IMPLEMENTED A CLEANING AND RELINING PROGRAM THROUGHOUT ALL OF ITS SERVICE AREAS?

A. No. The cleaning and relining activities have been concentrated in the area formerly served by Elizabethtown Water Company.[22] In fact, no mains were cleaned and relined in the Company's SA-1 service area between 1998 and 2007 and this program was only expanded to the Short Hills area in 2008.[23]

Q. DOES THE COMPANY EMPLOY ANY OTHER TECHNIQUES TO MAXIMIZE THE SERVICE LIFE OF ITS DISTRIBUTION AND COLLECTION SYSTEMS?

A. Yes. This was the topic of discovery in the Company's last base rate proceeding. Since 1955, the Company has been installing mains with cement linings.[24] In addition, the Company has purchased ductile iron water mains with a factory

[21] Responses to RCR-E-1 (11/19/2008), RCR-E-1 (12/11/2008) and RCR-E-25.
[22] Response to RCR-E-19 and response to RCR-E-28.
[23] Response to RCR-E-28.
[24] Docket No. WR08010020, responses to RCR-E-106 and RCR-E-110.

applied asphaltic exterior coating and the Company takes the additional step to provide an 8 or 12 mil thickness poly wrap in installations where soil conditions suggest the possibility of external corrosion.[25] The Company also has adopted water treatment strategies to minimize the impacts of internal corrosion.[26] The effect of these strategies is to ensure that metallic pipe is operating in a benign environment.

Q. HOW DO THESE STRATEGIES AFFECT THE MAINS INSTALLED BY THE COMPANY PRIOR TO 1955?

A. Obviously, materials selection and installation approaches adopted after 1955 (e.g. purchasing pipe with a factory installed cement lining) cannot impact these older materials. However, operating techniques like adding a corrosion inhibitor in the treatment process would serve to lower the rate of internal corrosion and ultimate deterioration of the pipe. The more comprehensive approach applied to material selection and installation after 1955 would certainly allow the Company to focus its rehabilitation and service life extension activities on mains installed prior to 1955. Unlined cast iron mains that are structurally sound could be cleaned of tuberculation and lined with a cement or epoxy lining. In most cases, this would indefinitely extend the life of these mains.

[25] Docket No. WR08010020, Responses to RCR-E-107 and RCR-E-108.
[26] Docket No. WR08010020, Response to RCR-E-101.

Q. ARE THERE ANY OTHER AREAS WHERE THE COMPANY COULD IMPROVE ITS WATER DISTRIBUTION MAIN SERVICE LIFE EXTENSION EFFORTS?

A. Yes. The Company has not addressed electrical grounding issues,[27] it could enhance its internal corrosion rate monitoring efforts by making such a program routine,[28] and it could develop and employ a program of installing cathodic protection in areas where multiple main failures are recorded in close proximity in addition to the areas where this is already addressed.[29] Each of these strategies could help extend the life of older mains. The Company could also improve its data management capabilities to better organize the information collected regarding main failures. In its last base rate case, the Company indicated that "most" of its operating centers recorded the type of pipe involved in main breaks but the data could not be easily retrieved.[30] This sort of information is significant and if more readily available could suggest ways to optimize the Company's distribution network maintenance and renewal efforts.

Q. EVEN THOUGH THERE IS ROOM FOR IMPROVEMENT IN THE COMPANY'S SERVICE LIFE EXTENSION EFFORTS, CAN YOU ASSESS THE EFFECTIVENESS OF THE PROGRAMS THE COMPANY HAS IN PLACE?

[27] Docket No. WR08010020, Response to RCR-E-109.
[28] Docket No. WR08010020, Response to RCR-E-102.
[29] Response to RCR-E-1 (December 11, 2008).
[30] Docket No. WR08010020, Response to RCR-E-95.

A. A complete assessment would require a detailed evaluation of the Company's main replacement strategies and maintenance records; however, the data provided by the Company in this matter related to main break records suggests that the materials specifications and operating practices have produced positive results. For example, the average number of main repairs between 2004 and 2007, inclusive, is only 1,333 and the number of service repairs has averaged 949 per year.[31] At the end of 2007, the Company had 42,675,609 feet of mains in service[32] and 609,054 active customer services.[33] With regard to main breaks, the Company's break incident rate varies between 0.04 (Mt. Holly) to 0.24 (Raritan – East) breaks per mile and this is better performance than the goal range recommended by the American Water Works Association.[34] These data do not suggest a need for an accelerated main replacement program.

Q. WHAT IS THE BENEFIT OF SERVICE LIFE EXTENSION PROGRAMS OVER ASSET REPLACEMENT PROGRAMS?

A. The obvious benefit is that the capital cost of cleaning and relining a structurally sound water main is much less than the cost of a replacement. In its last base rate case, the Company demonstrated that the cost of cleaning and relining water mains in its SA-2 service area is less than half the cost of installing a replacement water main.[35] A similar benefit is attainable in the Company's sewer collection systems

[31] Response to SE-14.
[32] Response to RCR-E-6, Attachment, Sheet 235 of 290.
[33] Response to RCR-E-6, Attachment, Sheet 239 of 290.
[34] Response to SR-41, 2007 data.
[35] Docket No. WR08010020, Response to RCR-E-208.

where main relining programs – including those that provide structural integrity – could extend the service life of existing mains and avoid very costly replacements.

Q. IF THE COMPANY'S DSIC PROPOSAL IS ADOPTED, HOW WILL ITS CAPITAL IMPROVEMENT PROGRAM BE ALTERED?

A. The Company indicated that it will double the level of investment in DSIC eligible plant.[36] Furthermore, the Company's track record between 2004 and 2008 supports the concept that it intends to do this through capital asset replacement rather than service life extension programs.

Q. UNDER THE CURRENT REGULATORY ARRANGEMENT, WITHOUT DSIC, HOW DOES THE COMPANY PRIORITIZE CAPITAL INVESTMENTS?

A. This was explained by Ms. Chiavari in her direct testimony and I will repeat her explanation here:

> "NJAWC convenes a needs assessment workshop at each operating center during the fall of each year. At this time, we review the state of our infrastructure, the need for pipeline replacement and rehabilitation projects, the customer service issues, the drivers for all capital expenditures, master plans, system studies and cost estimates. The annual infrastructure replacement program is developed from these workshops. A higher priority is given to projects needed for regulatory compliance

[36] Exhibit PT-2, Chiavari, p. 18, lines 22-24.

and projects needed to address a high level of risk of service disruption. In developing our priorities, prudent management must also consider the effect of capital construction on the company's financial picture. Delay in recovery thus acts as a disincentive to construction which might otherwise be done. The DSIC will eliminate this issue."[37]

Q. DO YOU BELIEVE THAT THE DSIC WILL ELIMINATE THE DISINCENTIVE TO INVESTMENT DESCRIBED BY MS. CHIAVARI?

A. If DSIC were to eliminate any disincentive to investment, it would do so only for the portion of the Company's investment program eligible for DSIC treatment. Based on the average over the 2004 through 2008 period, DSIC eligible investments account for $39,771,000 per year out of a total construction program that averaged $147,045,715 – or about 27% of the annual construction expenditures. The larger 73% portion of the construction program would not be DSIC eligible and the disincentive claimed by Ms. Chiavari would remain.

Q. DO YOU BELIEVE THAT A PORTION OF THE COMPANY'S INVESTMENT PROGRAM – NAMELY THE DSIC ELIGIBLE PORTION - SHOULD BE GIVEN A SPECIAL ECONOMIC INCENTIVE?

A. No. I believe this would distort the program of project prioritization described by Ms. Chiavari. By allowing certain projects to gain almost instant rate relief, the Company's system of screening and prioritizing projects according to need and

[37] Exhibit PT-2, Chiavari, p. 18, line 28 through p. 19, line 7.

impact would be skewed in favor of those projects that would represent essentially no drag on earnings. This distortion may not result in the best assignment of capital.

Q. ARE THERE ANY OTHER ASPECTS OF THE COMPANY'S DSIC PROPOSAL, AS IT RELATES TO OVERALL CAPITAL ASSET MANAGEMENT, WHICH SHOULD BE CONSIDERED BY THIS BOARD?

A. Yes. The listing of DSIC eligible projects overwhelmingly focuses on replacement projects. {Please see the Petition at Paragraph 46.} Only main cleaning and relining projects and possibly the purchase of leak detection equipment could be viewed as investments that serve to extend the life of existing assets. The Company's history over the past five years also shows a bias toward replacement activities rather than service life extension related investments. Only 11.5% of the DSIC eligible investments made during the 2004 through 2008 period were made on less costly cleaning and relining programs. The majority of the program resulted in capital replacements. The Company's responses to various Staff and Rate Counsel data requests also demonstrate a bias toward plant replacement.[38]

Q. HOW SHOULD THIS ISSUE BE ADDRESSED?

A. In coming rate cases, greater scrutiny should be given to a review of the decision making leading up to individual renovate vs. replacement decisions. However, this sort of review may be inadequate. A more thorough evaluation of the Company's

[38] Response to SE-17, for example.

approach to asset management and replacement decisions may be needed and this could be accomplished through a focused management audit.

Q. DO YOU THINK THAT THE DISC MECHANISM SHOULD BE APPROVED FOR THE COMPANY AT THIS TIME?

A. No, I do not. I do not think such a mechanism should be approved until the Board is able to satisfy itself that the Company has established an appropriate means of prioritizing investments that will not be distorted by the DSIC. Furthermore, the Company's replacement versus renovate decision strategy should be thoroughly evaluated before a mechanism is established to permit self implementing rate adjustments as proposed in this Petition.

Q. DOES THIS COMPLETE YOUR TESTIMONY AT THIS TIME?

A. Yes it does.

APPENDIX A - Qualifications

Detailed Discussion of Professional Qualifications

Of

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

Q. PLEASE PROVIDE A MORE DETAILED DESCRIPTION OF YOUR PROFESSIONAL EXPERIENCE.

A. From October 1977 through October 1981, I worked with the U.S. Environmental Protection Agency's Region III Water Supply Branch. In this position I developed system surveillance programs, evaluated the sanitary integrity of existing water supply facilities, provided technical assistance to water suppliers and engineers in regard to water treatment and the construction, operation and maintenance of water supply facilities. I recommended treatment techniques and the addition of sanitary facilities to municipal and investor owned utilities, coordinated emergency responses to cases of water supply contamination and was individually responsible for the implementation of the Safe Drinking Water Act in a 14 county area of Pennsylvania.

From October 1981 through May 1983, I worked as a project engineer for the engineering firm of Johnson, Mirmiran and Thompson, P.A. of Silver Spring, Maryland. While working for this firm I designed numerous water supply systems wastewater treatment and conveyance systems and storm drainage facilities. I investigated the suitability and condition of various existing water supply systems and developed comprehensive facility plans for a number of the firm's clients. In this position I functioned as a project engineer responsible for defining and carrying out engineering work necessary for the timely and accurate completion of design projects. As a client's representative, I also bid projects involving the construction

of facilities using construction documents I prepared for the client. These were for new projects as well as for projects requiring the renovation of existing facilities.

From May 1983 through November 1984, I served as Director of Engineering for American Water Works Service Company's Eastern Division. In this position I directed the long-range planning and design functions of New York-American Water Company and New Jersey American Water Company. I supervised the execution of engineering projects related to the design, construction, operation and maintenance of company water and sewer facilities. In this position, I was responsible for the successful completion of an annual construction budget of approximately $15 million and a facility maintenance budget of approximately $10 million. This work included the maintenance and renovation of wells in Burlington and Camden Counties and the construction of new wells in Atlantic and Warren Counties. I evaluated facilities, prepared or directed the preparation of engineering designs, pre-qualified bidders, solicited bids, and served as the Company's representative in managing construction and maintenance projects. I had authority to review and execute change orders on construction projects when actual field conditions were found to differ from anticipated conditions.

From November 1984 through December 1985, I served as Manager of Operations for the Eastern Division of American Water Works Service Company. In this position I supervised all aspects of engineering, water quality, materials management and risk management for the Company's Eastern Division. This included the Company's operations in New York and New Jersey. I managed a $120 million maintenance and operations budget and a $20 million construction

budget. I directed the procurement of engineering design services and construction services on approximately sixty major capital projects and hundreds of smaller maintenance and repair projects. During this period, I was responsible for the rehabilitation of the Company's Canoe Brook Well Field in Millburn, New Jersey. I also completed nearly $3 million in renovation work at Company wells in Burlington and Camden Counties.

From December 1985 through August of 1988, I served as System Director of Planning for American Water Works Service Company. In this position I directed the development of strategic and comprehensive plans for all American System companies located throughout the country through a staff of engineers and technical personnel working under my direction. I evaluated the suitability of existing source, treatment and distribution facilities, wastewater conveyance and treatment facilities and made long range projections concerning the need for new facilities or operational modifications to existing facilities.

In the next three assignments with American Water Works Company, I directed operations and maintenance budgets that averaged $150 million per year and capital budgets that ranged from $30 million to $120 million per year for the Company's operations in New Jersey, New York and Connecticut. Engineering designs were prepared under my direction. I directed the competitive bidding of capital and maintenance projects. The largest of these was the design and construction of the Delaware River Regional Water Treatment Plant; a $192 million treatment plant and pipeline system that now serves much of Burlington, Camden and Gloucester Counties.

From August 1988 through April 1989, I served as Regional Manager of Engineering for American Water Works Service Company's Eastern Region. In this position I developed engineering goals and objectives for each of the Company's operating systems in Connecticut, New York and New Jersey. I analyzed operating reports to determine the status of all phases of engineering, administration, planning, design and construction necessary to meet the Company's goals and objectives in providing safe, adequate and proper water supply service.

From April of 1989 to July 1993, I served as Regional Manager of Operational Services for American Water Works Service Company's Eastern Region. In this position I was responsible for the provision of administrative, engineering, loss control, resource conservation and water quality services required by the operating companies in the Eastern Region. In this position I directed water company operations to assure compliance with approved operating and maintenance budgets, capital construction programs, long range corporate and comprehensive plans, risk exposure reduction, safety and loss control procedures, water conservation programs and water quality objectives. In this position I also served as Vice President of New Jersey American Water Company, Connecticut-American Water Company and New York-American Water Company.

From July 1993 through May 1997, I served as Vice-President of New Jersey American Water Company. In this position, I served as chief operations officer for the Company. I was responsible for all operations functions including production, distribution, maintenance services and commercial services. I directed a staff of 450 management and unionized employees. These responsibilities

included the maintenance of over 150 wells located throughout New Jersey, several large surface water treatment facilities, nearly 100 distribution storage tanks and approximately 4,000 miles of water distribution mains. I was also responsible for the Company's sanitary sewer operations. These facilities were composed of several hundred miles of pipe and numerous pump stations. I planned and directed work required to maintain these facilities in peak operating performance. This work included electrical and mechanical maintenance associated with pumping equipment and controls.

In June of 1991, I was appointed by Governor Florio to serve as the investor-owned water supplier representative on the New Jersey Water Supply Advisory Council. The Council advises the New Jersey Department of Environmental Protection ("NJDEP," formerly the New Jersey Department of Environmental Protection and Energy") on a wide range of water supply issues such as water quality, facility construction requirements, statewide water supply planning and water supply management. Governor Whitman reappointed me to the Council 1994 and I served through mid 1997.

From May of 1997 through July 2000, I directed the acquisition and business development activities of American Water Works Service Company and a joint venture operation of the Company known as AmericanAnglian Environmental Technologies. I directed the development of bids on operations and maintenance contracts to operate municipally owned water and wastewater systems. I reviewed contract documents and directed a staff of engineers and analysts in preparing responsive bids and proposals for prospective municipal

clients. In 1999, my team returned the second best business development performance in the United States and we won the largest operations and maintenance contract awarded that year (Scranton Sewer Authority, Scranton, Pennsylvania). I also directed the operations of the joint venture. This business unit was the seventh largest private municipal water and wastewater contractor in the United States. I directed the maintenance and operations functions of over 175 contracts dedicated to the operation of municipal water and wastewater utilities and industrial and commercial clients.

Since July 2000, I have worked as an independent consultant. Representative clients include the New Jersey Department of the Public Advocate, Division of Rate Counsel ("Rate Counsel"), the Delaware Public Advocate, Passaic Valley Water Commission, Consumers New Jersey Water Company, PricewaterhouseCoopers LLP, BOC Gases Inc., the Pittsburgh Water & Sewer Authority/U.S. Water L.L.C., Upper Dublin Township (PA) and the Elmira (NY) Water Board. I have also served as an expert witness in a matter concerning the contamination of municipal water system in New Jersey.

I directed and managed the procurement process leading to the sale of a municipal wastewater system in southeastern Pennsylvania. The Upper Dublin Township Sanitary Sewer System sold for $20,000,000. This system serves approximately 8,000 connections and has annual revenues of $3,000,000. I advised the Township on alternative outsourcing and contracting approaches, reduced interim operating expenses by 30% by renegotiating the plant operations contract prior to the sale of the system.

I prepared an analysis of ownership alternatives for Lower Makefield Township's sanitary sewer collection system. I managed a procurement process that lead to the receipt of a $17 million bid for the potential sale of a system serving 10,700 residential and commercial customers.

I 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.

I 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.

I assisted the Banco Gubernamental de Fomento para Puerto Rico, Autoridad para el Financiamiento de la Infrastructura 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 new ten-year agreement with Ondeo will allow the government of Puerto Rico to eliminate the annual operations subsidy while service is improved. The value of the contract is $300 million per year.

I assessed an existing public private partnership contract and future contracting alternatives for the Jersey City Municipal Utilities Authority

(JCMUA). I recommended alternative contract terms and assisted JCMUA in negotiating a new ten-year operations agreement saving approximately $3,000,000 per year.

I reviewed engineering plans and operational practices in numerous water and wastewater rate adjustment proceedings and quality of service proceedings for the New Jersey Public Advocate, Division of the Rate Counsel. These reviews involved an assessment of utility engineering design and construction plans, the development of alternatives to utility proposed projects, and evaluations of the utility companies' ability to render safe, adequate and proper water or wastewater service. In these proceedings, I served as an engineering and operations expert:

- Acacia Lumberton Manor Fire Service Complaint
  BPU Docket No. WC01080495
- Applied Waste Water Management Rates
  BPU Docket No. WR03030222
- 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
- Aqua NJ Pine Hill Franchise
  BPU Docket No. WE05070581
- Aqua NJ Upper Freehold Franchise
  BPU Docket No. WE05100822
- Aqua New Jersey Base Rate Case
  BPU Docket No. WR07120955
- Bayview Water Company Rates
  BPU Docket No. WR01120818
- 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
- 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
- Montague Water Company Rates
  BPU Docket No. WR03121034
- Montague Sewer Company Rates
  BPU Docket No. WR03121035
- Montague Sewer Company Rates
  BPU Docket No WR05121056
- 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
- Parkway Water Company Rates
  BPU Docket No. WR05070634
- Pinelands Water Company Rates
  BPU Docket No. WR03121016
- Pinelands Wastewater Company Rates
  BPU Docket No. WR03121017
- Seabrook Water Company Franchise
  BPU Docket No. WC02060340
- Shorelands Water Company Rates
  BPU Docket No. WR04040295
- South Jersey Water Supply Change in Control
  BPU Docket No. WM07020076
- United Water Acquisitions Evaluation
  BPU Docket No. WM02060354
- United Water New Jersey Base Rates
  BPU Docket No. WR07020135
- United Water New Jersey Management Audit
  BPU Docket: WA05060550

I prepared a long-range water supply needs forecast for the Passaic Valley Water Commission. I analyzed water use patterns within the Commission's retail service area and for over two dozen large contract customers. I 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. Current efforts involve the preparation and support of a renewed surface water diversion permit for the Commission which

will support 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.

I have also developed, on behalf of Passaic Valley Water Commission, a model of the major water resources facilities in the Passaic, Pompton, Ramapo and Hackensack River Basin 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.

I 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. I 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.

I 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. I 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. I assisted the client in successfully defeating a threatened class action lawsuit at the certification level.