KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: James H. Vander Weide

1. Refer to Kentucky-American's Response to Commission Staff's Second Request for Information, Item 22. State whether, along with analysts' measures of earnings growth, a multi-stage DCF model rather than a constant growth DCF model should be used to reflect the impact of expected inflation-adjusted growth of the economy beyond five years. Explain.

Response:

No. Dr. Vander Weide recommends the use of a single-stage DCF model rather than a multi-stage DCF model because his research indicates that investors use the analysts' growth rates in a single-stage DCF model in making stock buy and sell decisions. In addition, multi-stage models require estimates of growth in each stage as well as estimates of the length of the period to which the various growth rates apply. Recognizing the additional complexities of applying multi-stage models, Dr. Vander Weide believes they should be used only when there is incontrovertible evidence that the results of the single-stage model are less reliable. Dr. Vander Weide is unaware of such evidence for his proxy companies.

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2. Refer to Kentucky-American's Response to Commission Staff's Second Request for Information, Item 23 at 2.

   a. State whether Dr. Vander Weide testified in any of the proceedings that resulted in the Return on Equity ("ROE") awards indicated in the second column. If yes, list each proceeding in which he testified, provide his testimony in that proceeding and a copy of the decision in that proceeding, with the portion of the decision addressing his testimony highlighted.

   b. Columns two and three of the table on page 2 indicate that 11 of the 16 ROE awards granted by a state regulatory agency during 2012 and 2013 were below 10 percent. Of the water utilities owned by American Water Works Company ("American Water"), six out of eight ROE awards granted in 2012 and 2013 were below 10 percent. All other things being equal, describe the effect of this information on investors' expectations of Kentucky-American's ROE in 2013.

Response:

a. Dr. Vander Weide provided testimony in the American Water Works proceedings in Virginia, West Virginia, Tennessee, and Kentucky. Copies of his direct testimony in those proceedings are provided.

   The Virginia proceeding was resolved by stipulation. A hyperlink to the order approving the stipulation is not available, but can be accessed at http://docket.scc.virginia.gov/vaprod/main.asp, by entering in the case number, PUE-2011-00127. The final order was issued December 12, 2012.

   The Tennessee proceeding was resolved by settlement. The order approving the settlement can be accessed at:
   http://www.tn.gov/tra/orders/2012/1200049de.pdf

   The Kentucky proceeding was resolved by final order of the Kentucky Public Service Commission, which can be accessed at:
   http://psc.ky.gov/pscscf/2010%20cases/2010-00036//20101214_PSC_ORDER.pdf

   Rate of return is discussed on pages 59-71 of the order.

   The West Virginia proceeding was resolved by order of the West Virginia Public Service Commission, which can be accessed at:

http://www.psc.state.wv.us/scripts/WebDocket/ViewDocument.cfm?CaseActivityID=319347&NotType='WebDocket'

Rate of return is discussed on pages 10-21 of the order.

b. Dr. Vander Weide has not studied the effect of this information on investors' expectations of what Kentucky-American will earn in 2013. Dr. Vander Weide's direct testimony describes his studies of investors' required return on an equity investment in Kentucky-American Water in 2013.

COMMONWEALTH OF VIRGINIA
BEFORE THE STATE CORPORATION COMMISSION

APPLICATION OF:	)	
VIRGINIA AMERICAN WATER COMPANY	)	**CASE NO. PUE-2011-00127**
FOR A GENERAL INCREASE IN RATES	)	

DIRECT TESTIMONY
OF
DR. JAMES H. VANDER WEIDE
ON BEHALF OF

VIRGINIA AMERICAN WATER COMPANY

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I. WITNESS IDENTIFICATION

Q. 1 What is your name and business address?

A. 1 My name is James H. Vander Weide. I am Research Professor of Finance and Economics at Duke University, the Fuqua School of Business. I am also President of Financial Strategy Associates, a firm that provides strategic and financial consulting services to business clients. My business address is 3606 Stoneybrook Drive, Durham, North Carolina.

Q. 2 Would you please describe your educational background and prior academic experience?

A. 2 I graduated from Cornell University with a Bachelor's Degree in Economics and from Northwestern University with a Ph.D. in Finance. After joining the faculty of the School of Business at Duke University, I was named Assistant Professor, Associate Professor, and then Professor. I have published research in the areas of finance and economics and taught courses in corporate finance, investment management, and management of financial institutions at Duke for more than thirty-five years. My research publications and teaching experience are described in Appendix 1. I am now retired from my teaching duties at Duke.

Q. 3 Have you previously testified on financial or economic issues?

A. 3 Yes. As an expert on financial and economic theory and practice, I have participated in more than 400 regulatory and legal proceedings

before the U.S. Congress, the Federal Energy Regulatory Commission, the National Energy Board (Canada), the Federal Communications Commission, the National Telecommunications and Information Administration, the Canadian Radio-Television and Telecommunications Commission, the public service commissions of forty-three states and four Canadian provinces, the insurance commissions of five states, the U.S. Tax Court, the Iowa State Board of Tax Review, the National Association of Securities Dealers, and the North Carolina Property Tax Commission. In addition, I have prepared expert testimony in proceedings before the U.S. District Court for the District of Nebraska; the U.S. District Court for the District of New Hampshire; the U.S. District Court for the District of Northern Illinois; the U.S. District Court for the Eastern District of North Carolina; the Montana Second Judicial District Court, Silver Bow County; the U.S. District Court for the Northern District of California; the Superior Court, North Carolina; the U.S. Bankruptcy Court for the Southern District of West Virginia; and the U. S. District Court for the Eastern District of Michigan.

II. PURPOSE OF TESTIMONY

Q. 4 What is the purpose of your testimony?

A. 4 I have been asked by Virginia American Water Company (VAWC) to prepare an independent appraisal of its cost of equity capital and to recommend a rate of return on equity that is fair, that allows VAWC to attract capital on reasonable terms, and that allows VAWC to maintain its financial integrity.

Q. 5 How do you estimate VAWC's cost of equity?

A. 5 I estimate VAWC's cost of equity by applying several standard cost of equity estimation techniques, including the discounted cash flow (DCF) model, the risk premium method, and the Capital Asset Pricing Model (CAPM) to groups of comparable risk companies.

Q. 6 Do you generally give equal weight to the results of these standard cost of equity methods?

A. 6 I generally give equal weight to the results of these standard cost of equity methods when the average Value Line beta for the proxy companies is relatively close to 1.0, and the average company in my proxy group has a relatively large market value capitalization. If the average Value Line beta for the proxy companies is significantly less than 1.0, as it is in this present case, and/or the average market value capitalization for the proxy companies is relatively small, I generally give little or no weight to the results of the application of the CAPM.

Q. 7 Why do you give little or no weight to the result of the CAPM when the average Value Line beta is significantly less than 1.0?

A. 7 I give little or no weight to the result of the CAPM when the average Value Line beta is significantly less than 1.0 because financial research provides strong support for the conclusion that the CAPM underestimates the cost of equity for companies whose betas are

significantly less than 1.0. I present a summary of this research in the CAPM section of my testimony.

Q. 8 Why is it appropriate to give less weight to the result of the CAPM when the companies in the proxy group have small market capitalization?

A. 8 It is appropriate to give less weight to the result of the CAPM in this case because financial research also supports the conclusion that the CAPM underestimates the cost of equity for small market capitalization companies.

Q. 9 What cost of equity do you find for your comparable companies in this proceeding?

A. 9 I find that the cost of equity for my comparable companies is in the range 10.4 percent to 12.0 percent. Because the average beta of my proxy companies is significantly less than 1.0, my conclusion is based on the results of my DCF and risk premium studies.

Q. 10 What is your recommendation regarding VAWC's cost of equity?

A. 10 I recommend that VAWC be allowed a fair rate of return on common equity in the range 10.4 percent to 12.0 percent.

Q. 11 Do you have an exhibit to accompany your testimony?

A. 11 Yes. I have an Exhibit___(JVW-1), consisting of eight schedules and five appendices that were prepared by me or under my direction and supervision.

III. ECONOMIC AND LEGAL PRINCIPLES

Q. 12 How do economists define the required rate of return, or cost of capital, associated with particular investment decisions such as the decision to invest in water treatment, storage, and distribution facilities?

A. 12 Economists define the cost of capital as the return investors expect to receive on alternative investments of comparable risk.

Q. 13 How does the cost of capital affect a firm's investment decisions?

A. 13 The goal of a firm is to maximize the value of the firm. This goal can be accomplished by accepting all investments in plant and equipment with an expected rate of return greater than or equal to the cost of capital. Thus, a firm should continue to invest in plant and equipment only so long as the return on its investment is greater than or equal to its cost of capital.

Q. 14 How does the cost of capital affect investors' willingness to invest in a company?

A. 14 The cost of capital measures the return investors can expect on investments of comparable risk. The cost of capital also measures the investor's required rate of return on investment because rational investors will not invest in a particular investment opportunity if the expected return on that opportunity is less than the cost of capital. Thus, the cost of capital is a hurdle rate for both investors and the firm.

Q. 15 Do all investors have the same position in the firm?

A. 15 No. Debt investors have a fixed claim on a firm's assets and income that must be paid prior to any payment to the firm's equity investors. Since the firm's equity investors have a residual claim on the firm's assets and income, equity investments are riskier than debt investments. Thus, the cost of equity exceeds the cost of debt.

Q. 16 What is the economic definition of the cost of equity?

A. 16 As I noted above, the cost of equity is the return investors expect to receive on alternative equity investments of comparable risk. Since the return on an equity investment of comparable risk is not a contractual return, the cost of equity is more difficult to measure than the cost of debt. However, as I have already noted, the cost of equity is greater than the cost of debt. The cost of equity, like the cost of debt, is both forward looking and market based.

Q. 17 How do economists measure the percentages of debt and equity in a firm's capital structure?

A. 17 Economists measure the percentages of debt and equity in a firm's capital structure by first calculating the market value of the firm's debt and the market value of its equity. Economists then calculate the percentage of debt by the ratio of the market value of debt to the combined market value of debt and equity, and the percentage of equity by the ratio of the market value of equity to the combined market values of debt and equity. For example, if a firm's debt has a market value of $25 million and its equity has a market value of $75 million, then its total market capitalization is $100 million, and its capital structure contains 25 percent debt and 75 percent equity.

Q. 18 Why do economists measure a firm's capital structure in terms of the market values of its debt and equity?

A. 18 Economists measure a firm's capital structure in terms of the market values of its debt and equity because: (1) the weighted average cost of capital is defined as the return investors expect to earn on a portfolio of the company's debt and equity securities; (2) investors measure the expected return and risk on their portfolios using market value weights, not book value weights; and (3) market values are the best measures of the amounts of debt and equity investors have invested in the company on a going forward basis.

Q. 19 Why do investors measure the expected return and risk on their investment portfolios using market value weights rather than book value weights?

A. 19 Investors measure the expected return and risk on their investment portfolios using market value weights because market values are the best measure of the amounts the investors currently have invested in each security in the portfolio. From the point of view of investors, the historical cost or book value of their investment is irrelevant for the purpose of assessing the current risk and required return on their portfolios because if they were to sell their investments, they would receive market value, not historical cost. Thus, the return can only be measured in terms of market values.

Q. 20 Is the economic definition of the weighted average cost of capital consistent with regulators' traditional definition of the average cost of capital?

A. 20 No. The economic definition of the weighted average cost of capital is based on the market costs of debt and equity, the market value percentages of debt and equity in a company's capital structure, and the future expected risk of investing in the company. In contrast, regulators have traditionally defined the weighted average cost of capital using the embedded cost of debt and the book values of debt and equity in a company's capital structure.

Q. 21 Does the required rate of return on an investment vary with the risk of that investment?

A. 21 Yes. Since investors are averse to risk, they require a higher rate of return on investments with greater risk.

Q. 22 Are these economic principles regarding the fair return for capital recognized in any Supreme Court cases?

A. 22 Yes. These economic principles, relating to the supply of and demand for capital, are recognized in two United States Supreme Court cases: (1) *Bluefield Water Works and Improvement Co. v. Public Service Comm'n.*; and (2) *Federal Power Comm'n v. Hope Natural Gas Co*. In the *Bluefield Water Works* case, the Court states:

> A public utility is entitled to such rates as will permit it to earn a return upon the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties, but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures. The return…should be reasonably sufficient to assure confidence in the financial soundness of the utility, and should be adequate, under efficient and economical management, to maintain and support its credit, and enable it to raise the money necessary for the proper discharge of its public duties. [*Bluefield Water Works and Improvement Co. v. Public Service Comm'n.* 262 U.S. 679, 692 (1923)].

The Court clearly recognizes here that: (1) a regulated firm cannot remain financially sound unless the return it is allowed an opportunity to earn on the value of its property is at least equal to the cost of capital (the principle relating to the demand for capital); and (2) a regulated firm will not be able to attract capital if it does not offer investors an opportunity to earn a return on their investment equal to the return they expect to earn on other investments of the same risk (the principle relating to the supply of capital).

In the *Hope Natural Gas* case, the Court reiterates the financial soundness and capital attraction principles of the *Bluefield* case:

> From the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock... By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its

credit and to attract capital. [*Federal Power Comm'n v. Hope Natural Gas Co*., 320 U.S. 591, 603 (1944)]

IV. BUSINESS AND FINANCIAL RISKS IN THE WATER UTILITY INDUSTRY

Q. 23 What are the major factors that affect business risk in the water utility industry?

A. 23 Business risk in the water utility industry is affected by the following economic factors:

1. High Operating Leverage. The water utility business requires a large commitment to fixed costs in relation to variable costs, a situation called high operating leverage. The relatively high degree of fixed costs in the water utility business arises because of the average water company's large investment in fixed, long-lived water treatment, storage, and distribution facilities. High operating leverage causes the average water company's net income to be highly sensitive to sales fluctuations.

2. Demand Uncertainty. The business risk of the water utility business is increased by the high degree of demand uncertainty in the industry. Demand uncertainty is caused primarily by: (i) wide fluctuations in average temperature and rainfall from year to year; (ii) the state of the economy; and (iii) customer growth in the service territory.

3. Supply Uncertainty. The risk of the water utility business is further increased by the need to assure a safe and reliable supply of

water to meet customer needs on any given day of the year. The Safe Drinking Water Act Amendments of 1996 authorize the Environmental Protection Agency (EPA) to periodically test the drinking water for impurities and to issue regulations requiring water utilities to reduce drinking water contaminants to an acceptable level. The EPA has exercised its authority by requiring the water utilities to meet increasingly stringent drinking water standards over time. The rising costs and uncertainty of meeting ever more stringent drinking water standards is a major risk facing the water utilities.

V. COST OF EQUITY ESTIMATION METHODS

Q. 24 What methods do you use to estimate the cost of common equity capital for VAWC?

A. 24 I review the results of three generally accepted methods for estimating the cost of common equity. These are the Discounted Cash Flow (DCF), the risk premium method, and the Capital Asset Pricing Model (CAPM). The DCF method assumes that the current market price of a firm's stock is equal to the discounted value of all expected future cash flows. The risk premium method assumes that the investor's required return on an equity investment is equal to the interest rate on a long-term bond plus an additional equity risk premium to compensate the investor for the risks of investing in equities compared to bonds. The CAPM assumes that the investor's required rate of return on equity is equal to a risk-free rate of interest plus the product of a company-specific risk factor, beta, and the expected risk premium on the market portfolio.

VI. DISCOUNTED CASH FLOW (DCF) APPROACH

Q. 25 Please describe the DCF model.

A. 25 The DCF model is based on the assumption that investors value an asset on the basis of the future cash flows they expect to receive from owning the asset. Thus, investors value an investment in a bond because they expect to receive a sequence of semi-annual coupon payments over the life of the bond and a terminal payment equal to the bond's face value at the time the bond matures. Likewise, investors value an investment in a firm's stock because they expect to receive a sequence of dividend payments and, perhaps, expect to sell the stock at a higher price sometime in the future.

A second fundamental principle of the DCF approach is that investors value a dollar received in the future less than a dollar received today. A future dollar is valued less than a current dollar because investors could invest a current dollar in an interest earning account and increase their wealth. This principle is called the time value of money.

Applying the two fundamental DCF principles noted above to an investment in a bond leads to the conclusion that investors value their investment in the bond on the basis of the present value of the bond's future cash flows. Thus, the price of the bond should reflect the timing, magnitude, and relative risk of the expected cash flows. Algebraically this can be expressed as:

EQUATION 1

$$P_B = \frac{C}{(1+i)} + \frac{C}{(1+i)^2} + \cdots + \frac{C+F}{(1+i)^n}$$

where:

P_B	=	Bond price;
C	=	Cash value of the constant coupon payment (assumed for notational convenience to occur annually rather than semi-annually);
F	=	Face value of the bond;
i	=	The rate of interest investors could earn by investing their money in an alternative bond of equal risk; and
n	=	The number of periods before the bond matures.

Applying these same principles to an investment in a firm's stock suggests that the price of the stock should be equal to:

EQUATION 2

$$P_s = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \cdots + \frac{D_n + P_n}{(1+k)^n}$$

where:

P_S	=	Current price of the firm's stock;
$D_1, D_2 \ldots D_n$	=	Expected annual dividend per share on the firm's stock;
P_n	=	Price per share of stock at the time the investor expects to sell the stock; and
k	=	Return the investor expects to earn on alternative investments of the same risk, i.e., the investor's required rate of return.

Equation (2) is frequently called the annual discounted cash flow model of stock valuation. Assuming that dividends grow at a constant annual rate, g, this equation can be solved for k, the cost of equity. The resulting cost of equity equation is $k = D_1/P_s + g$, where k is the cost of equity, D_1 is the expected next period annual dividend, P_s is the current price of the stock, and g is the constant annual growth rate in earnings, dividends, and book value per share. The term D_1/P_s is called the dividend yield component of the annual DCF model, and the term g is called the growth component of the annual DCF model. As in the case of the price of a bond, the price of a stock is related to the timing, magnitude, and relative risk of the expected cash flows.

Q. 26 Are you recommending that the annual DCF model be used to estimate VAWC's cost of equity?

A. 26 No. The DCF model assumes that a company's stock price is equal to the present discounted value of all expected future dividends. The annual DCF model is only a correct expression for the present discounted value of future dividends if dividends are paid annually at the end of each year. Since the companies in my proxy group all pay dividends quarterly, the current market price that investors are willing to pay reflects the expected quarterly receipt of dividends. Therefore, a quarterly DCF model must be used to estimate the cost of equity for these firms. The quarterly DCF model differs from the annual DCF model in that it expresses a company's price as the present discounted value of a quarterly stream of dividend payments. A complete analysis of the implications of the quarterly payment of dividends on the DCF model is provided in Exhibit__(JVW-1), Appendix 2. For the reasons cited there, I employed the quarterly DCF model throughout my calculations.

Q. 27 Please describe the quarterly DCF model you used.

A. 27 The quarterly DCF model I used is described on Exhibit__(JVW-1), Schedule 1 and in Appendix 2. The quarterly DCF equation shows that the cost of equity is: the sum of the future expected dividend yield and the growth rate, where the dividend in the dividend yield is the equivalent future value of the four quarterly dividends at the end of the year, and the growth rate is the expected growth in dividends or earnings per share.

Q. 28 In Appendix 2, you demonstrate that the quarterly DCF model provides the theoretically correct valuation of stocks when dividends are paid quarterly. Do investors, in practice, recognize the actual timing and magnitude of cash flows when they value stocks and other securities?

A. 28 Yes. In valuing long-term government or corporate bonds, investors recognize that interest is paid semi-annually. Thus, the price of a long-term government or corporate bond is simply the present value of the semi-annual interest and principal payments on these bonds. Likewise, in valuing mortgages, investors recognize that interest is paid monthly.

Thus, the value of a mortgage loan is simply the present value of the monthly interest and principal payments on the loan. In valuing stock investments, stock investors correctly recognize that dividends are paid quarterly. Thus, a firm's stock price is the present value of the stream of quarterly dividends expected from owning the stock.

Q. 29 When valuing bonds, mortgages, or stocks, would investors assume that cash flows are received only at the end of the year, when, in fact, the cash flows are received semi-annually, quarterly, or monthly?

A 29 No. Assuming that cash flows are received at the end of the year when they are received semi-annually, quarterly, or monthly would lead investors to make serious mistakes in valuing investment opportunities. No rational investor would make the mistake of assuming that dividends or other cash flows are paid annually when, in fact, they are paid more frequently.

Q. 30 How do you estimate the growth component of the quarterly DCF model?

A. 30 I use both the average analysts' estimates of future earnings per share (EPS) growth reported by I/B/E/S Thomson Reuters (I/B/E/S) and the estimate of future earnings per share growth reported by Value Line.

Q. 31 Do you generally rely on EPS growth estimates from both I/B/E/S and Value Line?

A. 31 In applying the DCF model, I generally rely on the analysts' estimates reported by I/B/E/S. However, as I discuss in this testimony, the water companies have such small market capitalization that there are generally only one or two I/B/E/S analysts' long-term growth forecasts available. To supplement the available I/B/E/S growth forecasts, I therefore also rely on the earnings growth forecasts reported by Value Line for American States, American Water Works, Aqua America, California Water, Middlesex Water, and SJW.

Q. 32 What are the analysts' estimates of future EPS growth?

A. 32 As part of their research, financial analysts working at Wall Street firms periodically estimate EPS growth for each firm they follow. The EPS forecasts for each firm are then published. Investors who are contemplating purchasing or selling shares in individual companies review the forecasts. These estimates represent five-year forecasts of EPS growth.

Q. 33 What is I/B/E/S?

A. 33 I/B/E/S is a division of Thomson Reuters that reports analysts' EPS growth forecasts for a broad group of companies. The forecasts are expressed in terms of a mean forecast and a standard deviation of forecast for each firm. Investors use the mean forecast as an estimate of future firm performance.

Q. 34 Why do you use the I/B/E/S growth estimates?

A. 34 The I/B/E/S growth rates: (1) are widely circulated in the financial community, (2) include the projections of reputable financial analysts who develop estimates of future EPS growth, (3) are reported on a timely basis to investors, and (4) are widely used by institutional and other investors.

Q. 35 Why do you rely on analysts' projections of future EPS growth in estimating the investors' expected growth rate rather than looking at historical growth rates?

A. 35 I rely on analysts' projections of future EPS growth because there is considerable empirical evidence that investors use analysts' forecasts to estimate future earnings growth.

Q. 36 Have you performed any studies concerning the use of analysts' forecasts as an estimate of investors' expected growth rate, g?

A. 36 Yes, I prepared a study in conjunction with Willard T. Carleton, Professor Emeritus of Finance at the University of Arizona, on why analysts' forecasts are the best estimate of investors' expectation of future long-term growth. This study is described in a paper entitled "Investor Growth Expectations and Stock Prices: the Analysts versus History," published in the Spring 1988 edition of *The Journal of Portfolio Management*.

Q. 37 Please summarize the results of your study.

A. 37 First, we performed a correlation analysis to identify the historically oriented growth rates which best described a firm's stock price. Then we did a regression study comparing the historical growth rates with the average analysts' forecasts. In every case, the regression equations containing the average of analysts' forecasts statistically outperformed the regression equations containing the historical growth estimates. These results are consistent with those found by Cragg and Malkiel, the early major research in this area (John G. Cragg and Burton G. Malkiel, *Expectations and the Structure of Share Prices*, University of Chicago Press, 1982). These results are also consistent with the hypothesis that investors use analysts' forecasts, rather than historically oriented growth calculations, in making stock buy and sell decisions. They provide overwhelming evidence that the analysts' forecasts of future growth are superior to historically oriented growth measures in predicting a firm's stock price.

Q. 38 Has your study been updated to include more recent data?

A. 38 Yes. Researchers at State Street Financial Advisors updated my study using data through year-end 2003. Their results continue to confirm that analysts' growth forecasts are superior to historically-oriented growth measures in predicting a firm's stock price.

Q. 39 What price do you use in your DCF model?

A. 39 I use a simple average of the monthly high and low stock prices for each firm for the three-month period ending October 2011. These high and low stock prices were obtained from Thomson Reuters.

Q. 40 Why do you use the three-month average stock price in applying the DCF method?

A. 40 I use the three-month average stock price in applying the DCF method because stock prices fluctuate daily, while financial analysts' forecasts for a given company are generally changed less frequently, often on a quarterly basis. Thus, to match the stock price with an earnings forecast, it is appropriate to average stock prices over a three-month period.

Q. 41 Do you include an allowance for flotation costs in your DCF analysis?

A. 41 Yes. I include a five percent allowance for flotation costs in my DCF calculations.

Q. 42 Please explain your inclusion of flotation costs.

A. 42 All firms that have sold securities in the capital markets have incurred some level of flotation costs, including underwriters' commissions, legal fees, printing expense, etc. These costs are withheld from the proceeds of the stock sale or are paid separately, and must be recovered over the life of the equity issue. Costs vary depending upon the size of the issue, the type of registration method used and other factors, but in general these costs range between three and five percent of the proceeds from the issue [see Lee, Inmoo, Scott Lochhead, Jay Ritter, and Quanshui Zhao, "The Costs of Raising Capital," *The Journal of Financial Research*, Vol. XIX No 1 (Spring 1996), 59-74, and

Clifford W. Smith, "Alternative Methods for Raising Capital," *Journal of Financial Economics* 5 (1977) 273-307]. In addition to these costs, for large equity issues (in relation to outstanding equity shares), there is likely to be a decline in price associated with the sale of shares to the public. On average, the decline due to market pressure has been estimated at two to three percent [see Richard H. Pettway, "The Effects of New Equity Sales Upon Utility Share Prices," *Public Utilities Fortnightly*, May 10, 1984, 35—39]. Thus, the total flotation cost, including both issuance expense and market pressure, could range anywhere from five to eight percent of the proceeds of an equity issue. I believe a combined five percent allowance for flotation costs is a conservative estimate that should be used in applying the DCF model in this proceeding.

Q. 43 Does VAWC issue equity in the capital markets?

A. 43 No. Although VAWC does not issue equity in the capital markets, its parent must issue equity to provide VAWC the necessary financing to make investments in its water supply operations. If the parent is not able to recover its flotation costs through VAWC's rates, it will have no incentive to invest in VAWC.

Q. 44 Is a flotation cost adjustment only appropriate if a company issues stock during the test year?

A. 44 No. As described in Exhibit__(JVW-1), Appendix 3, a flotation cost adjustment is required whether or not a company issued new stock during the test year. Previously incurred flotation costs have not been recovered in previous rate cases; rather, they are a permanent cost associated with past issues of common stock. Just as an adjustment is made to the embedded cost of debt to reflect previously incurred debt issuance costs (regardless of whether additional bond issuances were made in the test year), so should an adjustment be made to the cost of equity regardless of whether additional stock was issued during the test year.

Q. 45 How do you apply the DCF approach to obtain the cost of equity capital for VAWC?

A. 45 I apply the DCF approach to the publicly-traded water companies shown on Exhibit__(JVW-1), Schedule 1 and the publicly-traded natural gas distribution companies (LDCs) shown on Exhibit__(JVW-1), Schedule 2.

Q. 46 How do you select your group of publicly-traded water companies?

A. 46 I select all the water companies included in the Value Line Investment Survey that: (1) pay dividends; (2) did not decrease dividends during any quarter of the past two years; (3) have at least one analyst's long-term growth forecast; and (4) are not the subject of a merger that has not been completed. In addition, all of the companies included in my group have a Value Line Safety Rank of 2 or 3, where 3 is the average Safety Rank of the Value Line universe of companies.

Q. 47 Why do you eliminate companies that have either decreased or eliminated their dividend in the past two years?

A. 47 The DCF model requires the assumption that dividends will grow at a constant rate into the indefinite future. If a company has either decreased or eliminated its dividend in recent years, an assumption that the company's dividend will grow at the same rate into the indefinite future is questionable.

Q. 48 Why do you eliminate companies that do not have any analyst's long-term growth forecasts?

A. 48 As noted above, my studies indicate that the analysts' growth forecasts best approximate the growth forecasts used by investors in making stock buy and sell decisions; and thus, the average of the analysts' growth forecasts is the best available estimate of the growth term in the DCF Model. In my opinion, it is difficult to apply the DCF model to companies that do not have any analysts' long-term growth estimates.

Q. 49 Are the Value Line water companies widely followed by analysts in the investment community?

A. 49 No. As a result of their small size and low investor turnover, the water companies are generally followed by very few analysts. The number of analysts' estimates for each of the Value Line water companies is shown below in Table 1:

Table 1

NUMBER OF LONG-TERM GROWTH FORECASTS FOR WATER COMPANIES

LINE NO.	COMPANY	NO. OF I/B/E/S ANALYSTS	VALUE LINE FORECASTED OR REPORTED EPS GROWTH	VALUE LINE EDITION
1	Amer. States Water	2	1	Standard
2	Amer. Water Works	3	1	Standard
3	Aqua America	3	1	Standard
4	Artesian Res. 'A'	1	0	Plus
5	California Water	1	1	Standard
6	Connecticut Water	NA	0	Plus
7	Middlesex Water	NA	1	Standard
8	Pennichuck	1	0	Plus
9	SJW Corp.	1	1	Standard
10	York Water	NA	0	Plus

Q. 50 Do you normally include companies in your proxy groups that have only one or two analysts' long-term growth forecasts?

A. 50 No. I normally include a company in my proxy group only if there are at least three analysts' estimates of long-term growth. On the basis of my professional judgment, I believe that cost of equity estimates based on three or more analysts' estimates are more reliable than cost of equity estimates based on just one or two forecasts.

Q. 51 Recognizing the greater uncertainty associated with DCF results based on just one or two analysts' forecasts, do you supplement your DCF results for the water companies with a DCF analysis of an additional proxy group?

A. 51 Yes. Given the greater uncertainty in applying the DCF model to companies with only one or two analysts' growth forecasts, as noted above, I also apply the DCF model to an additional proxy group consisting of natural gas distribution companies ("LDCs"), and each of the companies in the LDC proxy group has at least three analysts' estimates of long-term growth.

Q. 52 Why do you eliminate companies that are being acquired in transactions that are not yet completed?

A. 52 A merger announcement generally increases the target company's stock price, but not the acquiring company's stock price. Analysts' growth forecasts for the target company, on the other hand, are necessarily related to the company as it currently exists. The use of a stock price that includes the growth-enhancing prospects of potential mergers in conjunction with growth forecasts that do not include the growth-enhancing prospects of potential mergers produces DCF results that tend to distort a company's cost of equity.

Q. 53 Please summarize the result of your application of the DCF model to your water company proxy group.

A. 53 As shown in Exhibit__(JVW-1), Schedule 1, my application of the DCF model to the Value Line water companies produces a market-weighted average DCF result of 12.4 percent and a simple average DCF result of 12.0 percent.

Q. 54 You note above that you also apply your DCF method to a proxy group of LDCs. Why do you apply your DCF model to a proxy group of LDCs?

A. 54 I apply my DCF model to a proxy group of LDCs because: (1) the companies in the water company group are generally followed by only one or two analysts; (2) the LDCs are a conservative proxy for the risk of investing in water companies; and (3) it is useful to examine the cost of equity results for a group of companies of similar risk that have a wider following in the investment community in order to test the reasonableness of the results obtained by applying cost of equity methodologies to the small group of publicly-traded water companies. Financial theory does not require that companies be in exactly the same industry to be comparable in risk.

Q. 55 How do you select your proxy group of LDCs?

A. 55 I select all the companies in Value Line's natural gas industry groups that: (1) are in the business of natural gas distribution; (2) paid dividends during every quarter of the last two years; (3) did not decrease dividends during any quarter of the past two years; (4) have at least three analysts included in the I/B/E/S consensus growth forecast; and (5) are not the subject of a merger offer that has not been completed. In addition, all of the LDCs included in my group have an investment grade bond rating and a Value Line Safety Rank of 1, 2, or

3. The LDCs in my DCF proxy group and the average DCF result are shown on Exhibit__(JVW-1), Schedule 2.

Q. 56 How are the LDCs similar to VAWC?

A. 56 Like VAWC, the LDCs are regulated public utilities that: (1) invest primarily in a capital-intensive physical network that connects the customer to the source of supply; and (2) sell their products and services at regulated rates to customers whose demand is primarily dependent on weather and the state of the economy.

Q. 57 Does your LDC proxy group meet the standards of the *Hope* and *Bluefield* cases you cite above?

A. 57 Yes. The *Hope* and *Bluefield* standard states that a public utility should be allowed to earn a return on its investment that is commensurate with the returns investors are able to earn on investments having similar risk. The LDCs are a group of companies that meet the standards of the *Hope* and *Bluefield* cases because they are a conservative proxy for the risk of investing in VAWC.

Q. 58 Do you have any empirical evidence that the LDCs in your proxy group are a conservative proxy for VAWC?

A. 58 Yes. The average Value Line Safety Rank for my proxy group of LDCs is approximately 2, on a scale where 1 is the most safe and 5 is the least safe, whereas the water companies have an average Value Line Safety Rank of 3.

Q. 59 Please summarize the results of your application of the DCF method to the LDC proxy group.

A. 59 My application of the DCF method to the LDC proxy group produces a market-weighted average result of 11.7 percent, as shown on Exhibit__(JVW-1), Schedule 2.

VII. RISK PREMIUM APPROACH

Q. 60 Please describe the risk premium approach to estimating VAWC's cost of equity.

A. 60 The risk premium approach is based on the principle that investors expect to earn a return on an equity investment in VAWC that reflects a "premium" over and above the return they expect to earn on an investment in a portfolio of long-term bonds. This equity risk premium compensates equity investors for the additional risk they bear in making equity investments versus bond investments.

Q. 61 How do you measure the required risk premium on an equity investment in VAWC?

A. 61 I use two methods to estimate the required risk premium on an equity investment in VAWC. The first is called the ex ante risk premium method, and the second is called the ex post risk premium method.

A. Ex Ante Risk Premium Approach

Q. 62 Please describe your ex ante risk premium approach for measuring the required risk premium on an equity investment in VAWC.

A. 62 My ex ante risk premium method is based on studies of the DCF expected return on a comparable group of natural gas distribution companies, which I compared to the interest rate on Moody's A-rated utility bonds. Specifically, for each month in my study period, I calculate the risk premium using the equation,

$$RP_{PROXY} = DCF_{PROXY} - I_A$$

where:

RP_{PROXY}	=	the required risk premium on an equity investment in the proxy group of companies;
DCF_{PROXY}	=	average DCF estimated cost of equity on a portfolio of proxy companies; and
I_A	=	the yield to maturity on an investment in A-rated utility bonds.

I then perform a regression analysis to determine if there is a relationship between the calculated risk premium and interest rates. Finally, I use the results of the regression analysis to estimate the investors' required risk premium. To estimate the cost of equity, I then add the required risk premium to the interest rate on A-rated utility bonds. A detailed description of my ex ante risk premium studies is contained in Appendix 4, and the underlying DCF results and interest rates are displayed in Exhibit__(JVW-1), Schedule 3.

Q. 63 Why do you apply your ex ante risk premium study to LDCs rather than to water companies?

A. 63 I apply my ex ante risk premium approach to LDCs rather than to water companies because the LDCs are similar in risk to the water companies and there is sufficient data to apply the DCF method to the sample companies over a relatively long period of time. In contrast, as discussed above, the water companies are generally followed by only one or two analysts, and there are relatively few companies with consistent data extending back for a reasonably long study period.

Q. 64 What estimated risk premium do you obtain from your ex ante risk premium method?

A. 64 As described in Appendix 4, my analyses produce an estimated risk premium over the yield on A-rated utility bonds equal to 5.2 percent.

Q. 65 What cost of equity result do you obtain from your ex ante risk premium study?

A. 65 To estimate the cost of equity using the ex ante risk premium method, one may add the estimated risk premium over the yield on A-rated utility bonds to the forecasted yield to maturity on A-rated utility bonds.[1] The forecasted yield to maturity on A-rated utility bonds, 5.9 percent, is obtained by adding the thirty-nine-basis point spread between the

[1] One could use the yield to maturity on other debt investments to measure the interest rate component of the risk premium approach as long as one uses the yield on the same debt investment to measure the expected risk premium component of the risk premium approach. I choose to use the yield on A-rated utility bonds because it is a frequently-used benchmark for utility bond yields.

average September 2011 yield on AAA-rated corporate bonds (4.09 percent) and A-rated utility bonds (4.48 percent) to Value Line's forecasted 5.5 percent yield on AAA-rated corporate bonds (see Value Line Selection & Opinion, August 26, 2011, p. 2047). My analyses produce an estimated risk premium over the yield on A-rated utility bonds equal to 5.2 percent. Adding an estimated risk premium of 5.2 percent to the 5.9 percent yield to maturity on A-rated utility bonds produces a cost of equity estimate of 11.1 percent using the ex ante risk premium method (see Appendix 4).

B. Ex Post Risk Premium Approach

Q. 66 Please describe your ex post risk premium approach for measuring the required risk premium on an equity investment in VAWC.

A. 66 I first perform a study of the comparable returns received by bond and stock investors over the 74 years of my study. I estimate the returns on stock and bond portfolios using stock price and dividend yield data on the S&P 500 and bond yield data on Moody's A-rated utility bonds. My study consists of investing one dollar in the S&P 500 and Moody's A-rated utility bonds at the beginning of 1937 and reinvesting the principal plus return each year to 2011. The return associated with each stock portfolio is the sum of the annual dividend yield and capital gain (or loss) which accrue to this portfolio during the year(s) in which it is held. The return associated with the bond portfolio, on the other hand, is the sum of the annual coupon yield and capital gain (or loss) which accrue to the bond portfolio during the year(s) in which it is held. The resulting annual returns on the stock and bond portfolios purchased in each year between 1937 and 2010 are shown on Exhibit__(JVW-1), Schedule 4. The average annual return on an investment in the S&P 500 stock portfolio is 11.1 percent, and the average annual return on an investment in the Moody's A-rated utility bond portfolio is 6.4 percent. The risk premium on the S&P 500 stock portfolio is, therefore, 4.7 percent.

I also conduct a second study using stock data on the S&P Utilities rather than the S&P 500. The S&P Utility stock portfolio shows an average annual return of 10.4 percent per year. Thus, the return on the S&P Utility stock portfolio exceeded the return on the Moody's A–rated utility bond portfolio by 4.0 percent (see Exhibit__(JVW-1), Schedule 5).

Q. 67 Why is it appropriate to perform your ex post risk premium analysis using both the S&P 500 and the S&P Utility Stock indices?

A. 67 I perform my ex post risk premium analysis on both the S&P 500 and the S&P Utilities because I believe utilities today face risks that are somewhere in between the average risk of the S&P Utilities and the S&P 500 over the years 1937 to 2011. Thus, I use the average of the two historically-based risk premiums as my estimate of the required risk premium in my ex post risk premium method.

Q. 68 Why do you analyze investors' experiences over such a long time frame?

A. 68 Because day-to-day stock price movements can be somewhat random, it is inappropriate to rely on short-run movements in stock prices in order to derive a reliable risk premium. Rather than buying and selling frequently in anticipation of highly volatile price movements, most investors employ a strategy of buying and holding a diversified portfolio of stocks. This buy-and-hold strategy will allow an investor to achieve a much more predictable long-run return on stock investments and at the same time will minimize transaction costs. The situation is very similar to the problem of predicting the results of coin tosses. I cannot predict with any reasonable degree of accuracy the result of a single, or even a few, flips of a balanced coin; but I can predict with a good deal of confidence that approximately fifty heads will appear in one hundred tosses of this coin. Under these circumstances, it is most appropriate to estimate future experience from long-run evidence of investment performance.

Q. 69 Would your study provide a different ex post risk premium if you started with a different time period?

A. 69 Yes, the ex post risk premium results vary somewhat depending on the historical time period chosen. My policy is to go back as far in history as I can get reliable data. I believe it is most meaningful to begin after the passage and implementation of the Public Utility Holding Company Act of 1935. This Act significantly changed the structure of the public utility industry. Since the Public Utility Holding Company Act of 1935 was not implemented until the beginning of 1937, I feel that numbers taken from before this date are not comparable to those taken after. (The repeal of the 1935 Act does not have a material impact on the structure of the public utility industry; thus, the Act's repeal does not have any impact on my choice of time period.)

Q. 70 Why is it necessary to examine the yield from debt investments in order to determine the investors' required rate of return on equity capital?

A. 70 As previously explained, investors expect to earn a return on their equity investment that exceeds currently available bond yields because the return on equity, being a residual return, is less certain than the yield on bonds and investors must be compensated for this uncertainty. Second, investors' current expectations concerning the amount by which the return on equity will exceed the bond yield will be influenced by historical differences in returns to bond and stock investors. For these reasons, we can estimate investors' current expected returns from an equity investment from knowledge of current bond yields and past differences between returns on stocks and bonds.

Q. 71 Has there been any significant trend in the ex post equity risk premium over the 1937 to 2011 time period of your study?

A. 71 No. Statisticians test for trends in data series by regressing the data observations against time. I have performed such a time series regression on my two data sets of historical risk premiums. As shown below in Table 2 and Table 3, there is no statistically significant trend in my risk premium data. Indeed, the coefficient on the time variable is insignificantly different from zero (if there were a trend, the coefficient on the time variable should be significantly different from zero).

TABLE 2

REGRESSION OUTPUT FOR RISK PREMIUM ON S&P 500

LINE NO.		INTERCEPT	TIME	ADJUSTED R SQUARE	F
1	Coefficient	2.519	(0.001)	0.012	1.91
2	T Statistic	1.408	(1.382)		

TABLE 3

REGRESSION OUTPUT FOR RISK PREMIUM ON S&P UTILITIES

LINE NO.		INTERCEPT	TIME	ADJUSTED R SQUARE	F
1	Coefficient	1.830	(0.001)	0.003	1.25
2	T Statistic	1.144	(1.119)		

Q. 72 Is your conclusion that there is no significant trend in the equity risk premium supported in the financial literature?

A. 72 Yes. Ibbotson® SBBI® 2011 Valuation Edition Yearbook Stocks, Bonds, Bills, and Inflation® ("Ibbotson® SBBI®") published by Morningstar, Inc., contains an analysis of "trends" in historical risk premium data. Ibbotson® SBBI® uses correlation analysis to determine if there is any pattern or "trend" in risk premiums over time. This analysis also demonstrates that there are no trends in risk premiums over time.

Q. 73 Why is it significant that historical risk premiums have no trend or other statistical pattern over time?

A. 73 The significance of this evidence is that the average historical risk premium is a reasonable estimate of the future expected risk premium. As noted in Ibbotson® SBBI®:

> The significance of this evidence is that the realized equity risk premium next year will not be dependent on the realized equity risk premium from this year. That is, there is no discernable pattern in the realized equity risk premium—it is virtually impossible to forecast next year's realized risk premium based on the premium of the previous year. For example, if this year's difference between the riskless rate and the return on the stock market is higher than last year's, that does not imply that next year's will be higher than this year's. It is as likely to be higher as it is lower. The best estimate of the expected value of a variable that has behaved randomly in the past is the average (or arithmetic mean) of its past values. [Ibbotson® SBBI®, page 58.]

Q. 74 What conclusions do you draw from your ex post risk premium analyses about the required return on an equity investment in VAWC?

A. 74 My studies provide strong evidence that investors today require an equity return of approximately 4.0 to 4.7 percentage points above the expected yield on A-rated utility bonds. At the time of my studies, the forecasted yield on A-rated utility bonds is 5.9 percent. As described above, the forecasted yield to maturity on A-rated utility bonds, 5.9 percent, is obtained by adding the thirty-nine-basis point spread between the average September 2011 yield on AAA-rated corporate bonds (4.09 percent) and A-rated utility bonds (4.48 percent) to Value Line's forecasted 5.5 percent yield on AAA-rated corporate bonds (see Value Line Selection & Opinion, August 26, 2011, p. 2047). Adding a 4.0 to 4.7 percentage point risk premium to a yield of 5.9 percent on A-rated utility bonds, I obtain an expected return on equity in the range 9.9 percent to 10.6 percent, with a midpoint of 10.2 percent. Because the ex post methodology does not reflect flotation costs, I add a 20 basis-point allowance for flotation costs, which I determine by calculating the difference in my DCF results with and without a flotation cost allowance. Adding a 20 basis-point allowance for flotation costs, I obtain an estimate of 10.4 percent as the cost of equity for VAWC using the ex post risk premium method.

VIII. CAPITAL ASSET PRICING MODEL

Q. 75 What is the CAPM?

A. 75 The CAPM is an equilibrium model of the security markets in which the expected or required return on a given security is equal to the risk-free rate of interest, plus the company equity "beta," times the market risk premium:

Cost of equity = Risk-free rate + Equity beta x Market risk premium

The risk-free rate in this equation is the expected rate of return on a risk-free government security, the equity beta is a measure of the company's risk relative to the market as a whole, and the market risk premium is the premium investors require to invest in the market basket of all securities compared to the risk-free security.

Q. 76 How do you use the CAPM to estimate the cost of equity for your proxy companies?

A. 76 The CAPM requires an estimate of the risk-free rate, the company-specific risk factor or beta, and the expected return on the market portfolio. For my estimate of the risk-free rate, I use a forecasted yield to maturity on 20-year Treasury bonds[2] of 4.55 percent, using data from Value Line.[3] For my estimate of the company-specific risk, or beta, I use the average Value Line beta of 0.69 for my proxy companies. For my estimate of the expected risk premium on the market portfolio, I use two approaches. First, I use the Ibbotson® SBBI® 6.7 percent risk premium on the market portfolio, which is measured from the difference between the arithmetic mean return on the S&P 500 (11.9 percent) and the income return on 20-year Treasury bonds (5.2 percent), as reported by Ibbotson® SBBI® (11.9 – 5.2 = 6.7). Second, I estimate the risk

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2 I use the 20-year Treasury bond to estimate the risk-free rate because SBBI estimates the risk premium using 20-year Treasury bonds and the analyst should use the same maturity to estimate the risk-free rate as is used to estimate the risk premium on the market portfolio.

3 I obtain the forecast using data from Value Line. Value Line Investment Survey, Selection & Opinion, August 26, 2011, p. 2047. Value Line projects a long-term Treasury bond yield equal to 4.9 percent. The September 2011 average yield on 20-year U.S. Treasury bonds is 2.83 percent, thirty-five basis points less than the average 3.18 percent yield on 30-year U.S. Treasury bonds. Subtracting thirty-five basis points from Value Line's 4.9 percent forecasted on long-term U.S. Treasury bonds produces a forecasted yield of 4.55 percent.

premium on the market portfolio from the difference between the DCF cost of equity for the S&P 500 (13.8 percent) and the forecast yield to maturity on 20-year Treasury bonds, (4.55 percent). My second approach produces a risk premium equal to 9.25 percent (13.8 - 4.55 = 9.25).

Q. 77 Why do you recommend that the risk premium on the market portfolio be estimated using the arithmetic mean return on the S&P 500?

A. 77 As explained in Ibbotson® SBBI®, the arithmetic mean return is the best approach for calculating the return investors expect to receive in the future:

> The equity risk premium data presented in this book are arithmetic average risk premia as opposed to geometric average risk premia. The arithmetic average equity risk premium can be demonstrated to be most appropriate when discounting future cash flows. For use as the expected equity risk premium in either the CAPM or the building block approach, the arithmetic mean or the simple difference of the arithmetic means of stock market returns and riskless rates is the relevant number. This is because both the CAPM and the building block approach are additive models, in which the cost of capital is the sum of its parts. The geometric average is more appropriate for reporting past performance, since it represents the compound average return. [SBBI®, p. 56.]

A discussion of the importance of using arithmetic mean returns in the context of CAPM or risk premium studies is contained in Schedule 6.

Q. 78 Why do you recommend that the risk premium on the market portfolio be estimated using the income return on 20-year Treasury bonds rather than the total return on these bonds?

A. 78 As discussed above, the CAPM requires an estimate of the risk-free rate of interest. When Treasury bonds are issued, the income return on the bond is risk free, but the total return, which includes both income and capital gains or losses, is not. Thus, the income return should be used in the CAPM because it is only the income return that is risk free.

Q. 79 What CAPM result do you obtain when you estimate the expected return on the market portfolio from the arithmetic mean difference between the return on the market and the yield on 20-year Treasury bonds?

A. 79 I obtain a CAPM estimate of 9.4 percent [see Schedule 7].

Q. 80 What CAPM result do you obtain when you estimate the risk premium on the market portfolio by applying the DCF model to the S&P 500?

A. 80 I obtain a CAPM result of 11.1 percent [see Schedule 8].

Q. 81 Can a reasonable application of the CAPM produce higher cost of equity results than you have just reported?

A. 81 Yes. The CAPM tends to underestimate the cost of equity for small market capitalization companies such as my water companies.

Q. 82 Does the finance literature support an adjustment to the CAPM equation to account for a company's size as measured by market capitalization supported in the finance literature?

A. 82 Yes. For example, Ibbotson® SBBI® supports such an adjustment. Their estimates of the size premium required to be added to the basic CAPM cost of equity are shown below in TABLE 4.

TABLE 4
IBBOTSON® ESTIMATES OF PREMIUMS FOR COMPANY SIZE[4]

Size	Smallest Mkt. Cap. ($Millions)	Premium
Large-Cap (No Adjustment)	>6,793.876	--
Mid-Cap	1,778.756	1.20%
Low-Cap	478.102	1.98%
Micro-Cap	1.222	4.07%

Q. 83 Are there other reasons to believe that the CAPM may produce cost of equity estimates at this time that are unreasonably low?

A. 83 Yes. There is considerable evidence in the finance literature that the CAPM tends to underestimate the cost of equity for companies whose equity beta is less than 1.0 and to overestimate the cost of equity for companies whose equity beta is greater than 1.0.[5]

Q. 84 Can you briefly summarize the evidence that the CAPM underestimates the required returns for securities or portfolios

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4 2011 Ibbotson® SBBI® Valuation Yearbook.

5 *See*, for example, Fischer Black, Michael C. Jensen, and Myron Scholes, "The Capital Asset Pricing Model: Some Empirical Tests," in *Studies in the Theory of Capital Markets*, M. Jensen, ed. New York: Praeger, 1972; Eugene Fama and James MacBeth, "Risk, Return, and Equilibrium: Empirical Tests," *Journal of Political Economy* 81 (1973), pp. 607-36; Robert Litzenberger and Krishna Ramaswamy, "The Effect of Personal Taxes and Dividends on Capital Asset Prices: Theory and Empirical Evidence," *Journal of Financial Economics* 7 (1979), pp. 163-95.; Rolf Banz, "The Relationship between Return and Market Value of Common Stocks," *Journal of Financial Economics* (March 1981), pp. 3-18; and Eugene Fama and Kenneth French, "The Cross-Section of Expected Returns," *Journal of Finance* (June 1992), pp. 427-465.

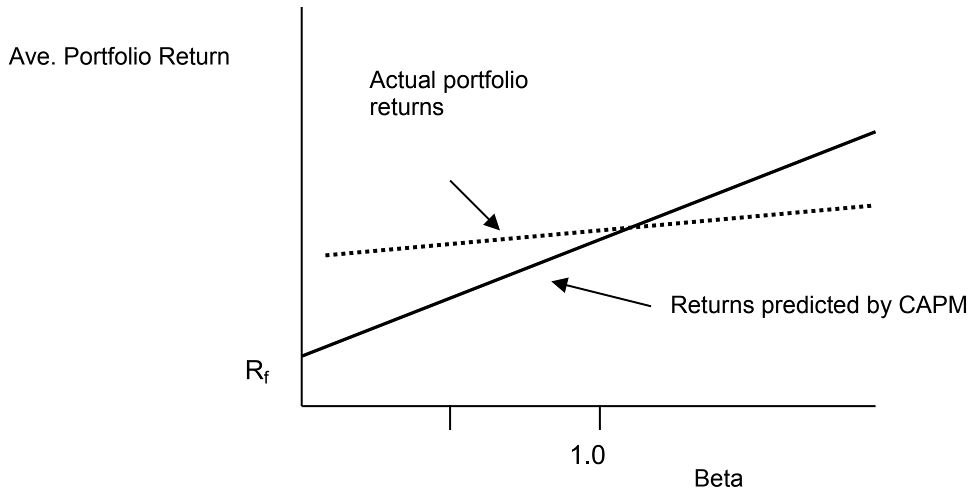
with betas less than 1.0 and overestimates required returns for securities or portfolios with betas greater than 1.0?

A. 84 Yes. The CAPM conjectures that security returns increase with increases in security betas in line with the equation

$$ER_i = R_f + \beta_i \left\lfloor ER_m - R_f \right\rfloor,$$

where ER_i is the expected return on security or portfolio i, R_f is the risk-free rate, $ER_m - R_f$ is the expected risk premium on the market portfolio, and β_i is a measure of the risk of investing in security or portfolio i. If the CAPM correctly predicts the relationship between risk and return in the marketplace, then the realized returns on portfolios of securities and the corresponding portfolio betas should lie on the solid straight line with intercept R_f and slope $[R_m - R_f]$ shown below.

Figure 1
Average Returns Compared to Beta for Portfolios Formed on Prior Beta



Financial scholars have found that the relationship between realized returns and betas is inconsistent with the relationship posited by the CAPM. As described in Fama and French (1992) and Fama and French (2004), the actual relationship between portfolio betas and returns is shown by the dotted line in the figure above. Although financial scholars disagree on the reasons why the return/beta relationship looks more like the dotted line in the figure than the solid line, they generally agree that the dotted line lies above the solid line for portfolios with betas less than 1.0 and below the solid line for portfolios with betas greater than 1.0. Thus, in practice, scholars generally agree that the CAPM underestimates portfolio returns for companies with betas less than 1.0, and overestimates portfolio returns for portfolios with betas greater than 1.0.

Q. 85 What conclusions do you reach from your review of the literature on the CAPM to predict the relationship between risk and return in the marketplace?

A. 85 I conclude that the financial literature strongly supports the proposition that the CAPM underestimates the cost of equity for companies such as public utilities with betas less than 1.0. I also conclude that the results of the CAPM should be given little or no weight in this proceeding because the average beta for my proxy group of water companies is significantly less than 1.0.

IX. FAIR RATE OF RETURN ON EQUITY

Q. 86 Please summarize your findings concerning VAWC's cost of equity.

A. 86 Based on my application of several cost of equity methods to my comparable companies, I conclude that my comparable companies' cost of equity is in the range 10.4 percent to 12.0 percent.

TABLE 5
COST OF EQUITY MODEL RESULTS

METHOD	MODEL RESULT
DCF—Water	12.0%
DCF—LDC	11.7%
Ex Ante Risk Premium	11.1%
Ex Post Risk Premium	10.4%
Range of Results	10.4% - 12.0%

Q. 87 What is your recommendation as to a fair rate of return on common equity for VAWC?

A. 87 I recommend that VAWC be allowed a fair rate of return on common equity in the range 10.4 percent to 12.0 percent.

Q. 88 Does this conclude your testimony?

A. 88 Yes, it does.

LIST OF SCHEDULES AND APPENDICES

Schedule 1	Summary of Discounted Cash Flow Analysis for Water Companies
Schedule 2	Summary of Discounted Cash Flow Analysis for Natural Gas Companies
Schedule 3	Comparison of the DCF Expected Return on an Investment in Natural Gas Companies to the Interest Rate on Moody's A-Rated Utility Bonds
Schedule 4	Comparative Returns on S&P 500 Stock Index and Moody's A-Rated Bonds 1937—2011
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Schedule 6	Using the Arithmetic Mean to Estimate the Cost of Equity Capital
Schedule 7	Calculation of Capital Asset Pricing Model Cost of Equity Using the Ibbotson® SBBI® 6.7 Percent Risk Premium
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Appendix 1	Qualifications of James H. Vander Weide
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Appendix 4	Ex Ante Risk Premium Method
Appendix 5	Ex Post Risk Premium Method

VIRGINIA AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 1
SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS
FOR PROXY WATER COMPANY COMPANIES

LINE NO.	COMPANY	d_4	3-MO. AVE. PRICE	I/B/E/S GROWTH	VALUE LINE FORECASTED OR REPORTED EPS GROWTH	AVERAGE GROWTH	MARKET VALUE	COST OF EQUITY
1	Amer. States Water	0.280	33.578	7.15%	5.50%	6.33%	652	10.1%
2	Amer. Water Works	0.230	28.959	8.03%	9.50%	8.77%	5,409	12.5%
3	Aqua America	0.155	21.187	6.67%	10.50%	8.59%	3,028	12.1%
4	Artesian Res. 'A'	0.193	17.525	4.00%		4.00%	139	8.9%
5	California Water	0.154	17.897	15.00%	6.00%	10.50%	760	14.7%
6	Middlesex Water	0.183	17.810		6.00%	6.00%	286	10.8%
7	Pennichuck	0.185	28.297	9.00%		9.00%	134	12.1%
8	SJW Corp.	0.173	22.619	14.00%	7.50%	10.75%	430	14.5%
9	Market-weighted Average							12.4%
10	Average							12.0%

Notes:

d_0	=	Most recent quarterly dividend.
d_1, d_2, d_3, d_4	=	Next four quarterly dividends, calculated by multiplying the last four quarterly dividends per *Value Line* and Yahoo Finance, by the factor (1 + g).
P_0	=	Average of the monthly high and low stock prices during the three months ending October 2011 per Thomson Reuters.
FC	=	Flotation costs expressed as a percent of gross proceeds.
g	=	Average of I/B/E/S and Value Line forecasts of future earnings growth October 2011.
k	=	Cost of equity using the quarterly version of the DCF model shown by the formula below:

$$k = \frac{d_1(1+k)^{.75} + d_2(1+k)^{.50} + d_3(1+k)^{.25} + d_4}{P_0(1-FC)} + g$$

VIRGINIA AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 2
SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS
FOR NATURAL GAS DISTRIBUTION COMPANIES

LINE NO.	COMPANY	d_0	P_0	GROWTH	COST OF EQUITY
1	AGL Resources	0.450	39.737	3.83%	8.9%
2	NiSource Inc.	0.230	20.993	8.40%	13.6%
3	Northwest Nat. Gas	0.435	43.737	3.63%	8.1%
4	ONEOK Inc.	0.560	67.898	9.25%	13.1%
5	Piedmont Natural Gas	0.290	29.535	5.20%	9.7%
6	South Jersey Inds.	0.365	49.957	8.67%	12.1%
7	WGL Holdings Inc.	0.390	39.418	4.60%	9.1%
8	Market-weighted Average				11.7%

Notes:

d_0	=	Most recent quarterly dividend.
d_1,d_2,d_3,d_4	=	Next four quarterly dividends, calculated by multiplying the last four quarterly dividends per *Value Line* and Yahoo Finance by the factor (1 + g).
P_0	=	Average of the monthly high and low stock prices during the three months ending October 2011 from Thomson Reuters.
FC	=	Flotation costs expressed as a percent of gross proceeds.
g	=	I/B/E/S forecast of future earnings growth October 2011.
k	=	Cost of equity using the quarterly version of the DCF model shown by the formula below:

$$k = \frac{d_1(1+k)^{.75} + d_2(1+k)^{.50} + d_3(1+k)^{.25} + d_4}{P_0(1-FC)} + g$$

VIRGINIA AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 3
COMPARISON OF DCF EXPECTED RETURN
ON AN EQUITY INVESTMENT IN NATURAL GAS DISTRIBUTION COMPANIES
TO THE INTEREST RATE ON A-RATED UTILITY BONDS

LINE NO.	DATE	DCF	BOND YIELD	RISK PREMIUM
1	Jun-98	0.1154	0.0703	0.0451
2	Jul-98	0.1186	0.0703	0.0483
3	Aug-98	0.1234	0.0700	0.0534
4	Sep-98	0.1273	0.0693	0.0580
5	Oct-98	0.1260	0.0696	0.0564
6	Nov-98	0.1211	0.0703	0.0508
7	Dec-98	0.1185	0.0691	0.0494
8	Jan-99	0.1195	0.0697	0.0498
9	Feb-99	0.1243	0.0709	0.0534
10	Mar-99	0.1257	0.0726	0.0531
11	Apr-99	0.1260	0.0722	0.0538
12	May-99	0.1221	0.0747	0.0474
13	Jun-99	0.1208	0.0774	0.0434
14	Jul-99	0.1222	0.0771	0.0451
15	Aug-99	0.1220	0.0791	0.0429
16	Sep-99	0.1226	0.0793	0.0433
17	Oct-99	0.1233	0.0806	0.0427
18	Nov-99	0.1240	0.0794	0.0446
19	Dec-99	0.1280	0.0814	0.0466
20	Jan-00	0.1301	0.0835	0.0466
21	Feb-00	0.1344	0.0825	0.0519
22	Mar-00	0.1344	0.0828	0.0516
23	Apr-00	0.1316	0.0829	0.0487
24	May-00	0.1292	0.0870	0.0422
25	Jun-00	0.1295	0.0836	0.0459
26	Jul-00	0.1317	0.0825	0.0492
27	Aug-00	0.1290	0.0813	0.0477
28	Sep-00	0.1257	0.0823	0.0434
29	Oct-00	0.1260	0.0814	0.0446
30	Nov-00	0.1251	0.0811	0.0440
31	Dec-00	0.1239	0.0784	0.0455
32	Jan-01	0.1261	0.0780	0.0481
33	Feb-01	0.1261	0.0774	0.0487
34	Mar-01	0.1275	0.0768	0.0507
35	Apr-01	0.1227	0.0794	0.0433
36	May-01	0.1302	0.0799	0.0503
37	Jun-01	0.1304	0.0785	0.0519
38	Jul-01	0.1338	0.0778	0.0560

LINE NO.	DATE	DCF	BOND YIELD	RISK PREMIUM
39	Aug-01	0.1327	0.0759	0.0568
40	Sep-01	0.1268	0.0775	0.0493
41	Oct-01	0.1268	0.0763	0.0505
42	Nov-01	0.1268	0.0757	0.0511
43	Dec-01	0.1254	0.0783	0.0471
44	Jan-02	0.1236	0.0766	0.0470
45	Feb-02	0.1241	0.0754	0.0487
46	Mar-02	0.1189	0.0776	0.0413
47	Apr-02	0.1159	0.0757	0.0402
48	May-02	0.1162	0.0752	0.0410
49	Jun-02	0.1170	0.0741	0.0429
50	Jul-02	0.1242	0.0731	0.0511
51	Aug-02	0.1234	0.0717	0.0517
52	Sep-02	0.1260	0.0708	0.0552
53	Oct-02	0.1250	0.0723	0.0527
54	Nov-02	0.1221	0.0714	0.0507
55	Dec-02	0.1216	0.0707	0.0509
56	Jan-03	0.1219	0.0706	0.0513
57	Feb-03	0.1232	0.0693	0.0539
58	Mar-03	0.1195	0.0679	0.0516
59	Apr-03	0.1162	0.0664	0.0498
60	May-03	0.1126	0.0636	0.0490
61	Jun-03	0.1114	0.0621	0.0493
62	Jul-03	0.1127	0.0657	0.0470
63	Aug-03	0.1139	0.0678	0.0461
64	Sep-03	0.1127	0.0656	0.0471
65	Oct-03	0.1123	0.0643	0.0480
66	Nov-03	0.1089	0.0637	0.0452
67	Dec-03	0.1071	0.0627	0.0444
68	Jan-04	0.1059	0.0615	0.0444
69	Feb-04	0.1039	0.0615	0.0424
70	Mar-04	0.1037	0.0597	0.0440
71	Apr-04	0.1041	0.0635	0.0406
72	May-04	0.1045	0.0662	0.0383
73	Jun-04	0.1036	0.0646	0.0390
74	Jul-04	0.1011	0.0627	0.0384
75	Aug-04	0.1008	0.0614	0.0394
76	Sep-04	0.0976	0.0598	0.0378
77	Oct-04	0.0974	0.0594	0.0380
78	Nov-04	0.0962	0.0597	0.0365
79	Dec-04	0.0970	0.0592	0.0378
80	Jan-05	0.0990	0.0578	0.0412
81	Feb-05	0.0979	0.0561	0.0418
82	Mar-05	0.0979	0.0583	0.0396

LINE NO.	DATE	DCF	BOND YIELD	RISK PREMIUM
83	Apr-05	0.0988	0.0564	0.0424
84	May-05	0.0981	0.0553	0.0427
85	Jun-05	0.0976	0.0540	0.0436
86	Jul-05	0.0966	0.0551	0.0415
87	Aug-05	0.0969	0.0550	0.0419
88	Sep-05	0.0980	0.0552	0.0428
89	Oct-05	0.0990	0.0579	0.0411
90	Nov-05	0.1049	0.0588	0.0461
91	Dec-05	0.1045	0.0580	0.0465
92	Jan-06	0.0982	0.0575	0.0407
93	Feb-06	0.1124	0.0582	0.0542
94	Mar-06	0.1127	0.0598	0.0529
95	Apr-06	0.1100	0.0629	0.0471
96	May-06	0.1056	0.0642	0.0414
97	Jun-06	0.1049	0.0640	0.0409
98	Jul-06	0.1087	0.0637	0.0450
99	Aug-06	0.1041	0.0620	0.0421
100	Sep-06	0.1053	0.0600	0.0453
101	Oct-06	0.1030	0.0598	0.0432
102	Nov-06	0.1033	0.0580	0.0453
103	Dec-06	0.1035	0.0581	0.0454
104	Jan-07	0.1013	0.0596	0.0417
105	Feb-07	0.1018	0.0590	0.0428
106	Mar-07	0.1018	0.0585	0.0433
107	Apr-07	0.1007	0.0597	0.0410
108	May-07	0.0967	0.0599	0.0368
109	Jun-07	0.0970	0.0630	0.0340
110	Jul-07	0.1006	0.0625	0.0381
111	Aug-07	0.1021	0.0624	0.0397
112	Sep-07	0.1014	0.0618	0.0396
113	Oct-07	0.1080	0.0611	0.0469
114	Nov-07	0.1083	0.0597	0.0486
115	Dec-07	0.1084	0.0616	0.0468
116	Jan-08	0.1113	0.0602	0.0511
117	Feb-08	0.1139	0.0621	0.0518
118	Mar-08	0.1147	0.0621	0.0526
119	Apr-08	0.1167	0.0629	0.0538
120	May-08	0.1069	0.0627	0.0442
121	Jun-08	0.1062	0.0638	0.0424
122	Jul-08	0.1086	0.0640	0.0446
123	Aug-08	0.1123	0.0637	0.0486
124	Sep-08	0.1130	0.0649	0.0481
125	Oct-08	0.1213	0.0756	0.0457
126	Nov-08	0.1221	0.0760	0.0461

LINE NO.	DATE	DCF	BOND YIELD	RISK PREMIUM
127	Dec-08	0.1162	0.0654	0.0508
128	Jan-09	0.1131	0.0639	0.0492
129	Feb-09	0.1155	0.0630	0.0524
130	Mar-09	0.1198	0.0642	0.0556
131	Apr-09	0.1146	0.0648	0.0498
132	May-09	0.1225	0.0649	0.0576
133	Jun-09	0.1208	0.0620	0.0588
134	Jul-09	0.1145	0.0597	0.0548
135	Aug-09	0.1109	0.0571	0.0538
136	Sep-09	0.1109	0.0553	0.0556
137	Oct-09	0.1146	0.0555	0.0592
138	Nov-09	0.1148	0.0564	0.0584
139	Dec-09	0.1123	0.0579	0.0544
140	Jan-10	0.1198	0.0577	0.0621
141	Feb-10	0.1167	0.0587	0.0580
142	Mar-10	0.1074	0.0584	0.0490
143	Apr-10	0.0934	0.0582	0.0352
144	May-10	0.0970	0.0552	0.0418
145	Jun-10	0.0953	0.0546	0.0407
146	Jul-10	0.1050	0.0526	0.0524
147	Aug-10	0.1038	0.0501	0.0537
148	Sep-10	0.1034	0.0501	0.0533
149	Oct-10	0.1050	0.0510	0.0540
150	Nov-10	0.1041	0.0536	0.0505
151	Dec-10	0.1029	0.0557	0.0472
152	Jan-11	0.1019	0.0557	0.0462
153	Feb-11	0.1004	0.0568	0.0436
154	Mar-11	0.1014	0.0556	0.0458
155	Apr-11	0.1026	0.0555	0.0471
156	May-11	0.1018	0.0532	0.0486
157	Jun-11	0.1020	0.0526	0.0494
158	Jul-11	0.1035	0.0527	0.0508
159	Aug-11	0.1179	0.0469	0.0710
160	Sep-11	0.1155	0.0448	0.0707
161	Oct-11	0.1150	0.0452	0.0698

Notes: A-rated utility bond yield information from the Mergent Bond Record. DCF results are calculated using a quarterly DCF model as follows:

D_0 = Latest quarterly dividend per *Value Line* and Yahoo Finance.
P_0 = Average of the monthly high and low stock prices for each month from Thomson Reuters.
FC = Flotation costs expressed as a percent of gross proceeds.
g = I/B/E/S forecast of future earnings growth for each month.
k = Cost of equity using the quarterly version of the DCF model shown by the formula below:

$$k = \left[\frac{d_0 (1+g)^{\frac{1}{4}}}{P_0} \right]^4 - 1$$

VIRGINIA AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 4
COMPARATIVE RETURNS ON S&P 500 STOCK INDEX
AND MOODY'S A-RATED BONDS 1937 – 2011

LINE NO.	YEAR	S&P 500 STOCK PRICE	STOCK DIVIDEND YIELD	STOCK RETURN	A-RATED BOND PRICE	BOND RATE OF RETURN	RISK PREMIUM
1	2011	1,282.62	0.0185		$77.36		
2	2010	1,123.58	0.0203	16.18%	$75.02	8.44%	7.74%
3	2009	865.58	0.0310	32.91%	$68.43	15.48%	17.43%
4	2008	1,378.76	0.0206	-35.16%	$72.25	0.24%	-35.40%
5	2007	1,424.16	0.0181	-1.38%	$72.91	4.59%	-5.97%
6	2006	1,278.72	0.0183	13.20%	$75.25	2.20%	11.01%
7	2005	1,181.41	0.0177	10.01%	$74.91	5.80%	4.21%
8	2004	1,132.52	0.0162	5.94%	$70.87	11.34%	-5.40%
9	2003	895.84	0.0180	28.22%	$62.26	20.27%	7.95%
10	2002	1,140.21	0.0138	-20.05%	$57.44	15.35%	-35.40%
11	2001	1,335.63	0.0116	-13.47%	$56.40	8.93%	-22.40%
12	2000	1,425.59	0.0118	-5.13%	$52.60	14.82%	-19.95%
13	1999	1,248.77	0.0130	15.46%	$63.03	-10.20%	25.66%
14	1998	963.36	0.0162	31.25%	$62.43	7.38%	23.87%
15	1997	766.22	0.0195	27.68%	$56.62	17.32%	10.36%
16	1996	614.42	0.0231	27.02%	$60.91	-0.48%	27.49%
17	1995	465.25	0.0287	34.93%	$50.22	29.26%	5.68%
18	1994	472.99	0.0269	1.05%	$60.01	-9.65%	10.71%
19	1993	435.23	0.0288	11.56%	$53.13	20.48%	-8.93%
20	1992	416.08	0.0290	7.50%	$49.56	15.27%	-7.77%
21	1991	325.49	0.0382	31.65%	$44.84	19.44%	12.21%
22	1990	339.97	0.0341	-0.85%	$45.60	7.11%	-7.96%
23	1989	285.41	0.0364	22.76%	$43.06	15.18%	7.58%
24	1988	250.48	0.0366	17.61%	$40.10	17.36%	0.25%
25	1987	264.51	0.0317	-2.13%	$48.92	-9.84%	7.71%
26	1986	208.19	0.0390	30.95%	$39.98	32.36%	-1.41%
27	1985	171.61	0.0451	25.83%	$32.57	35.05%	-9.22%
28	1984	166.39	0.0427	7.41%	$31.49	16.12%	-8.72%
29	1983	144.27	0.0479	20.12%	$29.41	20.65%	-0.53%
30	1982	117.28	0.0595	28.96%	$24.48	36.48%	-7.51%
31	1981	132.97	0.0480	-7.00%	$29.37	-3.01%	-3.99%
32	1980	110.87	0.0541	25.34%	$34.69	-3.81%	29.16%
33	1979	99.71	0.0533	16.52%	$43.91	-11.89%	28.41%
34	1978	90.25	0.0532	15.80%	$49.09	-2.40%	18.20%
35	1977	103.80	0.0399	-9.06%	$50.95	4.20%	-13.27%
36	1976	96.86	0.0380	10.96%	$43.91	25.13%	-14.17%
37	1975	72.56	0.0507	38.56%	$41.76	14.75%	23.81%
38	1974	96.11	0.0364	-20.86%	$52.54	-12.91%	-7.96%

LINE NO.	YEAR	S&P 500 STOCK PRICE	STOCK DIVIDEND YIELD	STOCK RETURN	A-RATED BOND PRICE	BOND RATE OF RETURN	RISK PREMIUM
39	1973	118.40	0.0269	-16.14%	$58.51	-3.37%	-12.77%
40	1972	103.30	0.0296	17.58%	$56.47	10.69%	6.89%
41	1971	93.49	0.0332	13.81%	$53.93	12.13%	1.69%
42	1970	90.31	0.0356	7.08%	$50.46	14.81%	-7.73%
43	1969	102.00	0.0306	-8.40%	$62.43	-12.76%	4.36%
44	1968	95.04	0.0313	10.45%	$66.97	-0.81%	11.26%
45	1967	84.45	0.0351	16.05%	$78.69	-9.81%	25.86%
46	1966	93.32	0.0302	-6.48%	$86.57	-4.48%	-2.00%
47	1965	86.12	0.0299	11.35%	$91.40	-0.91%	12.26%
48	1964	76.45	0.0305	15.70%	$92.01	3.68%	12.02%
49	1963	65.06	0.0331	20.82%	$93.56	2.61%	18.20%
50	1962	69.07	0.0297	-2.84%	$89.60	8.89%	-11.73%
51	1961	59.72	0.0328	18.94%	$89.74	4.29%	14.64%
52	1960	58.03	0.0327	6.18%	$84.36	11.13%	-4.95%
53	1959	55.62	0.0324	7.57%	$91.55	-3.49%	11.06%
54	1958	41.12	0.0448	39.74%	$101.22	-5.60%	45.35%
55	1957	45.43	0.0431	-5.18%	$100.70	4.49%	-9.67%
56	1956	44.15	0.0424	7.14%	$113.00	-7.35%	14.49%
57	1955	35.60	0.0438	28.40%	$116.77	0.20%	28.20%
58	1954	25.46	0.0569	45.52%	$112.79	7.07%	38.45%
59	1953	26.18	0.0545	2.70%	$114.24	2.24%	0.46%
60	1952	24.19	0.0582	14.05%	$113.41	4.26%	9.79%
61	1951	21.21	0.0634	20.39%	$123.44	-4.89%	25.28%
62	1950	16.88	0.0665	32.30%	$125.08	1.89%	30.41%
63	1949	15.36	0.0620	16.10%	$119.82	7.72%	8.37%
64	1948	14.83	0.0571	9.28%	$118.50	4.49%	4.79%
65	1947	15.21	0.0449	1.99%	$126.02	-2.79%	4.79%
66	1946	18.02	0.0356	-12.03%	$126.74	2.59%	-14.63%
67	1945	13.49	0.0460	38.18%	$119.82	9.11%	29.07%
68	1944	11.85	0.0495	18.79%	$119.82	3.34%	15.45%
69	1943	10.09	0.0554	22.98%	$118.50	4.49%	18.49%
70	1942	8.93	0.0788	20.87%	$117.63	4.14%	16.73%
71	1941	10.55	0.0638	-8.98%	$116.34	4.55%	-13.52%
72	1940	12.30	0.0458	-9.65%	$112.39	7.08%	-16.73%
73	1939	12.50	0.0349	1.89%	$105.75	10.05%	-8.16%
74	1938	11.31	0.0784	18.36%	$99.83	9.94%	8.42%
75	1937	17.59	0.0434	-31.36%	$103.18	0.63%	-31.99%
87	Average			11.1%		6.4%	4.7%

Note: See Appendix 5 for an explanation of how stock and bond returns are derived and the source of the data presented.

VIRGINIA AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 5
COMPARATIVE RETURNS ON S&P UTILITY STOCK INDEX
AND MOODY'S A-RATED BONDS 1937 – 2011

YEAR	UTILITY STOCK PRICE	STOCK DIVIDEND YIELD	STOCK RETURN	A-RATED BOND PRICE	BOND RATE OF RETURN	RISK PREMIUM
2011				$77.36		
2010			7.04%	$75.02	8.44%	-1.40%
2009			10.71%	$68.43	15.48%	-4.77%
2008			-25.90%	$72.25	0.24%	-26.14%
2007			16.56%	$72.91	4.59%	11.96%
2006			20.76%	$75.25	2.20%	18.56%
2005			16.05%	$74.91	5.80%	10.25%
2004			22.84%	$70.87	11.34%	11.50%
2003			23.48%	$62.26	20.27%	3.21%
2002			-14.73%	$57.44	15.35%	-30.08%
2002	243.79	0.0362		$57.44		
2001	307.70	0.0287	-17.90%	$56.40	8.93%	-26.83%
2000	239.17	0.0413	32.78%	$52.60	14.82%	17.96%
1999	253.52	0.0394	-1.72%	$63.03	-10.20%	8.48%
1998	228.61	0.0457	15.47%	$62.43	7.38%	8.09%
1997	201.14	0.0492	18.58%	$56.62	17.32%	1.26%
1996	202.57	0.0454	3.83%	$60.91	-0.48%	4.31%
1995	153.87	0.0584	37.49%	$50.22	29.26%	8.23%
1994	168.70	0.0496	-3.83%	$60.01	-9.65%	5.82%
1993	159.79	0.0537	10.95%	$53.13	20.48%	-9.54%
1992	149.70	0.0572	12.46%	$49.56	15.27%	-2.81%
1991	138.38	0.0607	14.25%	$44.84	19.44%	-5.19%
1990	146.04	0.0558	0.33%	$45.60	7.11%	-6.78%
1989	114.37	0.0699	34.68%	$43.06	15.18%	19.51%
1988	106.13	0.0704	14.80%	$40.10	17.36%	-2.55%
1987	120.09	0.0588	-5.74%	$48.92	-9.84%	4.10%
1986	92.06	0.0742	37.87%	$39.98	32.36%	5.51%
1985	75.83	0.0860	30.00%	$32.57	35.05%	-5.04%
1984	68.50	0.0925	19.95%	$31.49	16.12%	3.83%
1983	61.89	0.0948	20.16%	$29.41	20.65%	-0.49%
1982	51.81	0.1074	30.20%	$24.48	36.48%	-6.28%
1981	52.01	0.0978	9.40%	$29.37	-3.01%	12.41%
1980	50.26	0.0953	13.01%	$34.69	-3.81%	16.83%
1979	50.33	0.0893	8.79%	$43.91	-11.89%	20.68%
1978	52.40	0.0791	3.96%	$49.09	-2.40%	6.36%
1977	54.01	0.0714	4.16%	$50.95	4.20%	-0.04%
1976	46.99	0.0776	22.70%	$43.91	25.13%	-2.43%
1975	38.19	0.0920	32.24%	$41.76	14.75%	17.49%
1974	48.60	0.0713	-14.29%	$52.54	-12.91%	-1.38%
1973	60.01	0.0556	-13.45%	$58.51	-3.37%	-10.08%
1972	60.19	0.0542	5.12%	$56.47	10.69%	-5.57%

YEAR	UTILITY STOCK PRICE	STOCK DIVIDEND YIELD	STOCK RETURN	A-RATED BOND PRICE	BOND RATE OF RETURN	RISK PREMIUM
1971	63.43	0.0504	-0.07%	$53.93	12.13%	-12.19%
1970	55.72	0.0561	19.45%	$50.46	14.81%	4.64%
1969	68.65	0.0445	-14.38%	$62.43	-12.76%	-1.62%
1968	68.02	0.0435	5.28%	$66.97	-0.81%	6.08%
1967	70.63	0.0392	0.22%	$78.69	-9.81%	10.03%
1966	74.50	0.0347	-1.72%	$86.57	-4.48%	2.76%
1965	75.87	0.0315	1.34%	$91.40	-0.91%	2.25%
1964	67.26	0.0331	16.11%	$92.01	3.68%	12.43%
1963	63.35	0.0330	9.47%	$93.56	2.61%	6.86%
1962	62.69	0.0320	4.25%	$89.60	8.89%	-4.64%
1961	52.73	0.0358	22.47%	$89.74	4.29%	18.18%
1960	44.50	0.0403	22.52%	$84.36	11.13%	11.39%
1959	43.96	0.0377	5.00%	$91.55	-3.49%	8.49%
1958	33.30	0.0487	36.88%	$101.22	-5.60%	42.48%
1957	32.32	0.0487	7.90%	$100.70	4.49%	3.41%
1956	31.55	0.0472	7.16%	$113.00	-7.35%	14.51%
1955	29.89	0.0461	10.16%	$116.77	0.20%	9.97%
1954	25.51	0.0520	22.37%	$112.79	7.07%	15.30%
1953	24.41	0.0511	9.62%	$114.24	2.24%	7.38%
1952	22.22	0.0550	15.36%	$113.41	4.26%	11.10%
1951	20.01	0.0606	17.10%	$123.44	-4.89%	21.99%
1950	20.20	0.0554	4.60%	$125.08	1.89%	2.71%
1949	16.54	0.0570	27.83%	$119.82	7.72%	20.10%
1948	16.53	0.0535	5.41%	$118.50	4.49%	0.92%
1947	19.21	0.0354	-10.41%	$126.02	-2.79%	-7.62%
1946	21.34	0.0298	-7.00%	$126.74	2.59%	-9.59%
1945	13.91	0.0448	57.89%	$119.82	9.11%	48.79%
1944	12.10	0.0569	20.65%	$119.82	3.34%	17.31%
1943	9.22	0.0621	37.45%	$118.50	4.49%	32.96%
1942	8.54	0.0940	17.36%	$117.63	4.14%	13.22%
1941	13.25	0.0717	-28.38%	$116.34	4.55%	-32.92%
1940	16.97	0.0540	-16.52%	$112.39	7.08%	-23.60%
1939	16.05	0.0553	11.26%	$105.75	10.05%	1.21%
1938	14.30	0.0730	19.54%	$99.83	9.94%	9.59%
1937	24.34	0.0432	-36.93%	$103.18	0.63%	-37.55%
Average			10.4%		6.4%	4.0%

See Appendix 5 for an explanation of how stock and bond returns are derived and the source of the data presented. Standard & Poor's discontinued its S&P Utilities Index in December 2001 and replaced its utilities stock index with separate indices for electric and natural gas utilities. In this study, the stock returns beginning in 2002 are based on the total returns for the EEI Index of U.S. shareholder-owned electric utilities, as reported by EEI on its website.
http://www.eei.org/whatwedo/DataAnalysis/IndusFinanAnalysis/Pages/QtrlyFinancialUpdates.aspx

VIRGINIA AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 6
USING THE ARITHMETIC MEAN TO ESTIMATE THE COST OF EQUITY CAPITAL

Consider an investment that in a given year generates a return of 30 percent with probability equal to .5 and a return of -10 percent with a probability equal to .5. For each one dollar invested, the possible outcomes of this investment at the end of year one are:

Ending Wealth	Probability
\$1.30	0.50
\$0.90	0.50

At the end of year two, the possible outcomes are:

Ending Wealth			Probability	Value x Probability
(1.30) (1.30)	=	\$1.69	0.25	0.4225
(1.30) (.9)	=	\$1.17	0.50	0.5850
(.9) (.9)	=	\$0.81	0.25	0.2025
Expected Wealth	=			\$1.21

The expected value of this investment at the end of year two is \$1.21. In a competitive capital market, the cost of equity is equal to the expected rate of return on an investment. In the above example, the cost of equity is that rate of return which will make the initial investment of one dollar grow to the expected value of \$1.21 at the end of two years. Thus, the cost of equity is the solution to the equation:

$$1(1+k)^2 = 1.21 \text{ or}$$

$$k = (1.21/1)^{.5} - 1 = 10\%.$$

The arithmetic mean of this investment is:

$$(30\%)\ (.5) + (-10\%)\ (.5) = 10\%.$$

Thus, the arithmetic mean is equal to the cost of equity capital.

The geometric mean of this investment is:

$$[(1.3)\ (.9)]^{.5} - 1 = .082 = 8.2\%.$$

Thus, the geometric mean is not equal to the cost of equity capital.

The lesson is obvious: for an investment with an uncertain outcome, the arithmetic mean is the best measure of the cost of equity capital.

VIRGINIA AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 7
CALCULATION OF CAPITAL ASSET PRICING MODEL COST OF EQUITY
USING THE IBBOTSON® SBBI® 6.7 PERCENT RISK PREMIUM

Risk-free Rate	4.55%	Long-term Treasury bond yield forecast
Beta	0.69	Average Beta Comparable Water Companies
Risk Premium	6.7%	Long-horizon SBBI risk premium
Beta x Risk Premium	4.62%	
Flotation	0.20%	
CAPM cost of equity	9.4%	

Ibbotson SBBI risk premium from 2011 Ibbotson® SBBI® Stocks, Bonds, Bills, and Inflation® Valuation Yearbook; Value Line beta for comparable companies from Value Line October 2011. Forecast 20-year Treasury bond yield using data from Value Line Selection & Opinion, August 26, 2011.

COMPARABLE COMPANY BETAS

LINE NO.	COMPANY	VALUE LINE BETA
1	Amer. States Water	0.75
2	Amer. Water Works	0.65
3	Aqua America	0.65
4	Artesian Res. 'A'	0.60
5	California Water	0.70
6	Middlesex Water	0.75
7	Pennichuck	0.50
8	SJW Corp.	0.90
9	Average	0.69

Data from Value Line October 2011.

VIRGINIA AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 8
CALCULATION OF CAPITAL ASSET PRICING MODEL COST OF EQUITY
USING DCF ESTIMATE OF THE EXPECTED RATE OF RETURN
ON THE MARKET PORTFOLIO

LINE NO.			
1	Risk-free Rate	4.55%	Treasury Bond Yield Forecast
2	Beta	0.69	Average Beta Comparable Water Companies
3	DCF S&P 500	13.8%	DCF Cost of Equity S&P 500 (see following)
4	Risk Premium	9.25%	
5	Beta * Risk Premium	6.38%	
6	Flotation cost	0.20%	
7	Cost of Equity	11.1%	

Value Line beta for comparable companies from Value Line October 2011. Forecast 20-year Treasury bond yield from Value Line Selection & Opinion, August 26, 2011.

VIRGINIA AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 8 (CONTINUED)
CALCULATION OF CAPITAL ASSET PRICING MODEL COST OF EQUITY
USING DCF ESTIMATE OF THE EXPECTED RATE OF RETURN
ON THE MARKET PORTFOLIO
SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS FOR S&P 500 COMPANIES

LINE NO.	COMPANY	P_0	D_0	GROWTH	COST OF EQUITY
1	3M	78.56	2.20	11.88%	15.0%
2	ABBOTT LABORATORIES	51.03	1.92	9.29%	13.5%
3	ACCENTURE	54.09	1.35	10.79%	13.6%
4	AETNA	38.27	0.60	10.59%	12.3%
5	AFLAC	38.53	1.32	12.10%	16.0%
6	AIR PRDS.& CHEMS.	80.89	2.32	12.95%	16.2%
7	AIRGAS	64.83	1.28	13.91%	16.2%
8	ALLERGAN	80.19	0.20	13.32%	13.6%
9	ALLSTATE	25.22	0.84	10.00%	13.7%
10	ALTERA	35.94	0.32	15.07%	16.1%
11	AMERICAN EXPRESS	46.95	0.72	12.00%	13.7%
12	AMERISOURCEBERGEN	38.15	0.46	13.42%	14.8%
13	AMPHENOL 'A'	44.57	0.06	11.75%	11.9%
14	ANALOG DEVICES	33.10	1.00	9.75%	13.1%
15	APACHE	97.24	0.60	12.15%	12.8%
16	APPLIED MATS.	11.25	0.32	8.67%	11.8%
17	ASSURANT	35.06	0.72	10.33%	12.6%
18	AUTOMATIC DATA PROC.	48.95	1.58	10.04%	13.6%
19	AVON PRODUCTS	21.81	0.92	7.57%	12.2%
20	BANK OF AMERICA	7.13	0.04	11.75%	12.4%
21	BANK OF NEW YORK MELLON	20.68	0.52	10.48%	13.3%
22	BAXTER INTL.	54.53	1.24	9.48%	12.0%
23	BB&T	22.01	0.64	8.53%	11.7%
24	BECTON DICKINSON	77.08	1.64	9.44%	11.8%
25	BLACKROCK	156.76	5.50	12.20%	16.2%
26	CARDINAL HEALTH	41.73	0.86	11.96%	14.3%
27	CARNIVAL	32.24	1.00	10.83%	14.3%
28	CHESAPEAKE ENERGY	29.09	0.35	11.26%	12.6%
29	CHUBB	60.68	1.56	9.63%	12.5%
30	CINTAS	29.52	0.54	11.80%	13.9%
31	CITIGROUP	29.14	0.04	11.66%	11.8%
32	CLOROX	67.22	2.40	8.33%	12.3%
33	CME GROUP	261.65	5.60	13.02%	15.5%
34	COLGATE-PALM.	88.42	2.32	8.96%	11.8%
35	COMCAST 'A'	22.03	0.45	13.48%	15.8%
36	COMPUTER SCIS.	29.60	0.80	9.02%	12.0%
37	CORNING	13.94	0.30	9.33%	11.7%
38	COSTCO WHOLESALE	79.51	0.96	13.02%	14.4%

LINE NO.	COMPANY	P_0	D_0	GROWTH	COST OF EQUITY
39	COVIDIEN	47.07	0.90	10.54%	12.7%
40	CVS CAREMARK	34.86	0.50	10.56%	12.2%
41	D R HORTON	10.09	0.15	10.60%	12.3%
42	DEERE	72.39	1.64	12.63%	15.2%
43	DEVON ENERGY	64.01	0.68	10.47%	11.6%
44	DEVRY	43.80	0.30	11.35%	12.1%
45	DISCOVER FINANCIAL SVS.	23.99	0.24	10.50%	11.6%
46	E I DU PONT DE NEMOURS	45.39	1.64	9.77%	13.8%
47	EASTMAN CHEMICAL	39.39	1.04	8.96%	11.9%
48	EATON	40.71	1.36	10.60%	14.3%
49	ECOLAB	50.43	0.70	14.29%	15.9%
50	EQUIFAX	31.77	0.64	9.70%	11.9%
51	ESTEE LAUDER COS.'A'	94.80	1.05	15.00%	16.3%
52	EXPEDIA	28.00	0.28	11.41%	12.5%
53	EXPEDITOR INTL.OF WASH.	43.33	0.50	14.30%	15.6%
54	FIDELITY NAT.INFO.SVS.	26.53	0.20	12.15%	13.0%
55	FLIR SYS.	25.62	0.24	14.72%	15.8%
56	FLUOR	54.38	0.50	12.36%	13.4%
57	FMC	75.12	0.60	11.50%	12.4%
58	FRANKLIN RESOURCES	108.32	1.00	10.84%	11.9%
59	FREEPORT-MCMOR.CPR.& GD.	41.06	1.00	9.36%	12.0%
60	GAP	17.15	0.45	8.93%	11.8%
61	HARRIS	37.23	1.12	10.13%	13.5%
62	HESS	58.09	0.40	12.57%	13.3%
63	HJ HEINZ	51.00	1.92	8.00%	12.1%
64	HUNTINGTON BCSH.	5.06	0.16	11.90%	15.5%
65	INGERSOLL-RAND	31.06	0.48	12.31%	14.1%
66	INTEL	21.60	0.84	11.02%	15.4%
67	INTERNATIONAL BUS.MCHS.	173.32	3.00	11.11%	13.0%
68	INTL.GAME TECH.	15.53	0.24	12.95%	14.7%
69	INTUIT	47.49	0.60	13.47%	14.9%
70	INVESCO	18.05	0.49	12.34%	15.4%
71	IRON MNT.	31.38	1.00	12.30%	15.9%
72	JP MORGAN CHASE & CO.	34.24	1.00	8.69%	11.9%
73	KELLOGG	53.39	1.72	8.76%	12.3%
74	KOHL'S	48.94	1.00	13.43%	15.8%
75	KRAFT FOODS	34.12	1.16	10.30%	14.1%
76	KROGER	22.75	0.46	10.61%	12.9%
77	LEGG MASON	26.65	0.32	12.02%	13.4%
78	LINCOLN NAT.	19.49	0.20	10.73%	11.9%
79	LINEAR TECH.	28.84	0.96	9.67%	13.4%
80	LOCKHEED MARTIN	73.15	4.00	8.23%	14.3%
81	M&T BK.	74.37	2.80	8.49%	12.6%
82	MACY'S	26.87	0.40	10.20%	11.8%
83	MARSH & MCLENNAN	28.17	0.88	11.39%	14.9%
84	MCDONALDS	87.59	2.80	10.02%	13.6%
85	MCKESSON	76.41	0.80	14.02%	15.2%
86	MEAD JOHNSON NUTRITION	70.56	1.04	11.32%	13.0%
87	METLIFE	32.52	0.74	10.63%	13.2%
88	MICROCHIP TECH.	32.67	1.39	9.27%	14.0%
89	MICROSOFT	25.89	0.80	11.12%	14.6%

LINE NO.	COMPANY	P_0	D_0	GROWTH	COST OF EQUITY
90	MONSANTO	67.67	1.20	12.06%	14.1%
91	MOODY'S	31.67	0.56	12.37%	14.4%
92	NEWELL RUBBERMAID	13.25	0.32	9.32%	12.0%
93	NIKE 'B'	86.48	1.24	11.58%	13.2%
94	NOBLE	32.64	0.60	10.52%	12.6%
95	NORDSTROM	46.17	0.92	11.13%	13.4%
96	NORTHERN TRUST	38.12	1.12	12.95%	16.3%
97	OMNICOM GP.	40.18	1.00	10.28%	13.1%
98	ONEOK	67.90	2.24	9.25%	12.9%
99	ORACLE	28.90	0.24	13.59%	14.5%
100	PALL	46.67	0.70	12.00%	13.7%
101	PATTERSON COMPANIES	28.93	0.48	11.92%	13.8%
102	PAYCHEX	26.97	1.28	10.72%	16.1%
103	PEPSICO	61.97	2.06	8.90%	12.6%
104	PERKINELMER	21.03	0.28	11.80%	13.3%
105	PPG INDUSTRIES	76.37	2.28	12.30%	15.7%
106	PRAXAIR	97.25	2.00	12.41%	14.7%
107	PREC.CASTPARTS	157.86	0.12	14.80%	14.9%
108	PRINCIPAL FINL.GP.	24.65	0.70	11.57%	14.8%
109	PROCTER & GAMBLE	62.43	2.10	8.77%	12.5%
110	QUEST DIAGNOSTICS	50.35	0.68	11.92%	13.4%
111	RALPH LAUREN CL.A	135.58	0.80	13.56%	14.2%
112	RAYTHEON 'B'	41.55	1.72	9.00%	13.6%
113	ROCKWELL COLLINS	51.60	0.96	12.46%	14.6%
114	ROPER INDS.NEW	73.52	0.44	15.20%	15.9%
115	ROSS STORES	77.16	0.88	11.17%	12.4%
116	RYDER SYSTEM	44.92	1.16	12.25%	15.2%
117	SAFEWAY	17.98	0.58	8.51%	12.1%
118	SARA LEE	17.28	0.46	9.13%	12.1%
119	SHERWIN-WILLIAMS	75.71	1.46	11.10%	13.3%
120	SPECTRA ENERGY	25.58	1.12	7.63%	12.4%
121	ST.JUDE MEDICAL	40.70	0.84	10.99%	13.3%
122	STAPLES	13.97	0.40	12.98%	16.2%
123	STATE STREET	35.29	0.72	13.08%	15.4%
124	STRYKER	48.30	0.72	10.55%	12.2%
125	SUPERVALU	7.47	0.35	8.77%	14.0%
126	T ROWE PRICE GP.	50.94	1.24	12.20%	15.0%
127	TARGET	50.49	1.20	11.23%	13.9%
128	TE CONNECTIVITY	30.66	0.72	11.19%	13.8%
129	TIFFANY & CO	68.88	1.16	14.01%	15.9%
130	TJX COS.	55.25	0.76	12.89%	14.5%
131	TRAVELERS COS.	51.00	1.64	10.65%	14.3%
132	TYCO INTERNATIONAL	42.00	1.00	13.28%	16.0%
133	UNITED PARCEL SER.	65.58	2.08	11.54%	15.1%
134	UNITED TECHNOLOGIES	73.78	1.92	11.74%	14.7%
135	UNITEDHEALTH GP.	46.38	0.65	11.44%	13.0%
136	UNUM GROUP	22.31	0.42	10.43%	12.5%
137	US BANCORP	23.45	0.50	11.49%	13.9%
138	VERIZON COMMUNICATIONS	35.72	2.00	10.13%	16.4%
139	WAL MART STORES	52.48	1.46	9.79%	12.9%
140	WALGREEN	34.78	0.90	9.32%	12.2%

LINE NO.	COMPANY	P_0	D_0	GROWTH	COST OF EQUITY
141	WALT DISNEY	32.75	0.40	14.73%	16.1%
142	WELLS FARGO & CO	25.02	0.48	13.05%	15.2%
143	WESTERN UNION	16.63	0.32	11.86%	14.0%
144	WYNDHAM WORLDWIDE	30.49	0.60	12.18%	14.4%
145	XILINX	30.13	0.76	12.07%	14.9%
146	XL GROUP	19.95	0.44	10.00%	12.4%
147	YUM! BRANDS	51.41	1.14	12.68%	15.2%
148	Market-weighted Average				13.8%

Notes: In applying the DCF model to the S&P 500, I included in the DCF analysis only those companies in the S&P 500 group which pay a dividend, have a positive growth rate, and have at least three analysts' long-term growth estimates. To be conservative, I also eliminated those 25% of companies with the highest and lowest DCF results.

D_0 = Current dividend per Thomson Reuters.
P_0 = Average of the monthly high and low stock prices during the three months ending October 2011 per Thomson Reuters.
g = I/B/E/S forecast of future earnings growth October 2011.
k = Cost of equity using the quarterly version of the DCF model shown below:

$$k = \left[\frac{d_0(1+g)^{\frac{1}{4}}}{P_0}\right]^4 - 1$$

APPENDIX 1
QUALIFICATIONS OF JAMES H. VANDER WEIDE, PH.D.

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James H. Vander Weide is Research Professor of Finance and Economics at Duke University, the Fuqua School of Business. Dr. Vander Weide is also founder and President of Financial Strategy Associates, a consulting firm that provides strategic, financial, and economic consulting services to corporate clients, including cost of capital and valuation studies.

Educational Background and Prior Academic Experience

Dr. Vander Weide holds a Ph.D. in Finance from Northwestern University and a Bachelor of Arts in Economics from Cornell University. He joined the faculty at Duke University and was named Assistant Professor, Associate Professor, Professor, and then Research Professor of Finance and Economics.

Since joining the faculty at Duke, Dr. Vander Weide has taught courses in corporate finance, investment management, and management of financial institutions. He has also taught courses in statistics, economics, and operations research, and a Ph.D. seminar on the theory of public utility pricing. In addition, Dr. Vander Weide has been active in executive education at Duke and Duke Corporate Education, leading executive development seminars on topics including financial analysis, cost of capital, creating shareholder value, mergers and acquisitions, real options, capital budgeting, cash management, measuring corporate performance, valuation, short-run financial planning, depreciation policies, financial strategy, and competitive strategy. Dr. Vander Weide has designed and served as Program Director for several executive education programs, including the Advanced Management Program, Competitive Strategies in Telecommunications, and the Duke Program for Manager Development for managers from the former Soviet Union.

Publications

Dr. Vander Weide has written a book entitled *Managing Corporate Liquidity: An Introduction to Working Capital Management* published by John Wiley and Sons, Inc. He has also written a chapter titled, "Financial Management in the Short Run" for *The Handbook of Modern Finance*; a chapter titled "Principles for Lifetime Portfolio Selection: Lessons from Portfolio Theory" for *The Handbook of Portfolio Construction: Contemporary Applications of Markowitz Techniques;* and research papers on such topics as portfolio management, capital budgeting, investments, the effect of regulation on the performance of public utilities, and cash management. His articles have been published in *American Economic Review, Financial Management, International Journal of Industrial Organization, Journal of Finance, Journal of Financial and Quantitative Analysis, Journal of Bank Research, Journal of Portfolio Management, Journal* *of Accounting Research, Journal of Cash Management, Management Science, Atlantic Economic Journal, Journal of Economics and Business,* and *Computers and Operations Research*.

Professional Consulting Experience

Dr. Vander Weide has provided financial and economic consulting services to firms in the telecommunications, electric, gas, insurance, and water industries for more than twenty-five years. He has testified on the cost of capital, competition, risk, incentive regulation, forward-looking economic cost, economic pricing guidelines, depreciation, accounting, valuation, and other financial and economic issues in more than four hundred cases before the United States Congress, the Canadian Radio-Television and Telecommunications Commission, the Federal Communications Commission, the National Energy Board (Canada), the National Telecommunications and Information Administration, the Federal Energy Regulatory Commission, the public service commissions of forty-three states, the District of Columbia, four Canadian provinces, the insurance commissions of five states, the Iowa State Board of Tax Review, the National Association of Securities Dealers, and the North Carolina Property Tax Commission. In addition, he has testified as an expert witness in telecommunications-related proceedings before the United States District Court for the District of New Hampshire, United States District Court for the Northern District of California, United States District Court for the Northern District of Illinois, Montana Second Judicial District Court Silver Bow County, the United States Bankruptcy Court for the Southern District of West Virginia, and United States District Court for the Eastern District of Michigan. He also testified as an expert before the United States Tax Court, United States District Court for the Eastern District of North Carolina; United States District Court for the District of Nebraska, and Superior Court of North Carolina. Dr. Vander Weide has testified in thirty states on issues relating to the pricing of unbundled network elements and universal service cost studies and has consulted with Bell Canada, Deutsche Telekom, and Telefónica on similar issues. He has also provided expert testimony on issues related to electric and natural gas restructuring. He has worked for Bell Canada/Nortel on a special task force to study the effects of vertical integration in the Canadian telephone industry and has worked for Bell Canada as an expert witness on the cost of capital. Dr. Vander Weide has provided consulting and expert witness testimony to the following companies:

ELECTRIC, GAS, WATER, OIL COMPANIES	
Alcoa Power Generating, Inc.	MidAmerican Energy and subsidiaries
Alliant Energy and subsidiaries	National Fuel Gas
AltaLink, L.P.	Nevada Power Company
Ameren	NICOR
American Water Works	North Carolina Natural Gas
Atmos Energy and subsidiaries	North Shore Gas
BP p.l.c.	Northern Natural Gas Company
Central Illinois Public Service	NOVA Gas Transmission Ltd.

ELECTRIC, GAS, WATER, OIL COMPANIES	
Citizens Utilities	PacifiCorp
Consolidated Natural Gas and subsidiaries	Peoples Energy and its subsidiaries
Dominion Resources and subsidiaries	PG&E
Duke Energy and subsidiaries	Progress Energy
Empire District Electric Company	PSE&G
EPCOR Distribution & Transmission Inc.	Public Service Company of North Carolina
EPCOR Energy Alberta Inc.	Sempra Energy/San Diego Gas and Electric
FortisAlberta Inc.	South Carolina Electric and Gas
Hope Natural Gas	Southern Company and subsidiaries
Interstate Power Company	Tennessee-American Water Company
Kinder Morgan Energy Partners	The Peoples Gas, Light and Coke Co.
Maritimes & Northeast Pipeline	TransCanada
Iberdrola Renewables	Trans Québec & Maritimes Pipeline Inc.
Iowa Southern	Union Gas
Iowa-American Water Company	United Cities Gas Company
Iowa-Illinois Gas and Electric	Virginia-American Water Company
Kentucky Power Company	Xcel Energy
Kentucky-American Water Company	

TELECOMMUNICATIONS COMPANIES	
ALLTEL and subsidiaries	Phillips County Cooperative Tel. Co.
Ameritech (now AT&T new)	Pine Drive Cooperative Telephone Co.
AT&T (old)	Roseville Telephone Company (SureWest)
Bell Canada/Nortel	SBC Communications (now AT&T new)
BellSouth and subsidiaries	Sherburne Telephone Company
Centel and subsidiaries	Siemens
Cincinnati Bell (Broadwing)	Southern New England Telephone
Cisco Systems	Sprint/United and subsidiaries
Citizens Telephone Company	Telefónica
Concord Telephone Company	Tellabs, Inc.
Contel and subsidiaries	The Stentor Companies
Deutsche Telekom	U S West (Qwest)
GTE and subsidiaries (now Verizon)	Union Telephone Company
Heins Telephone Company	United States Telephone Association
JDS Uniphase	Valor Telecommunications (Windstream)
Lucent Technologies	Verizon (Bell Atlantic) and subsidiaries
Minnesota Independent Equal Access Corp.	Woodbury Telephone Company
NYNEX and subsidiaries (Verizon)	
Pacific Telesis and subsidiaries	

INSURANCE COMPANIES
Allstate
North Carolina Rate Bureau
United Services Automobile Association (USAA)
The Travelers Indemnity Company
Gulf Insurance Company

Other Professional Experience

Dr. Vander Weide conducts in-house seminars and training sessions on topics such as creating shareholder value, financial analysis, competitive strategy, cost of capital, real options, financial strategy, managing growth, mergers and acquisitions, valuation, measuring corporate performance, capital budgeting, cash management, and financial planning. Among the firms for whom he has designed and taught tailored programs and training sessions are ABB Asea Brown Boveri, Accenture, Allstate, Ameritech, AT&T, Bell Atlantic/Verizon, BellSouth, Progress Energy/Carolina Power & Light, Contel, Fisons, GlaxoSmithKline, GTE, Lafarge, MidAmerican Energy, New Century Energies, Norfolk Southern, Pacific Bell Telephone, The Rank Group, Siemens, Southern New England Telephone, TRW, and Wolseley Plc. Dr. Vander Weide has also hosted a nationally prominent conference/workshop on estimating the cost of capital. In 1989, at the request of Mr. Fuqua, Dr. Vander Weide designed the Duke Program for Manager Development for managers from the former Soviet Union, the first in the United States designed exclusively for managers from Russia and the former Soviet republics.

Early in his career, Dr. Vander Weide helped found University Analytics, Inc., which was one of the fastest growing small firms in the country. As an officer at University Analytics, he designed cash management models, databases, and software packages that are still used by most major U.S. banks in consulting with their corporate clients. Having sold his interest in University Analytics, Dr. Vander Weide now concentrates on strategic and financial consulting, academic research, and executive education.

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APPENDIX 2
THE QUARTERLY DCF MODEL

The simple DCF Model assumes that a firm pays dividends only at the end of each year. Since firms in fact pay dividends quarterly and investors appreciate the time value of money, the annual version of the DCF Model generally underestimates the value investors are willing to place on the firm's expected future dividend stream. In this appendix, we review two alternative formulations of the DCF Model that allow for the quarterly payment of dividends.

When dividends are assumed to be paid annually, the DCF Model suggests that the current price of the firm's stock is given by the expression:

$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \ldots + \frac{D_n + P_n}{(1+k)^n} \quad \textbf{(1)}$$

where

P_0	=	current price per share of the firm's stock,
$D_1, D_2, \ldots, D_n$	=	expected annual dividends per share on the firm's stock,
P_n	=	price per share of stock at the time investors expect to sell the stock, and
k	=	return investors expect to earn on alternative investments of the same risk, i.e., the investors' required rate of return.

Unfortunately, expression (1) is rather difficult to analyze, especially for the purpose of estimating k. Thus, most analysts make a number of simplifying assumptions. First, they assume that dividends are expected to grow at the constant rate g into the indefinite future. Second, they assume that the stock price at time n is simply the present value of all dividends expected in periods subsequent to n. Third, they assume that the investors' required rate of return, k, exceeds the expected dividend growth rate g. Under the above simplifying assumptions, a firm's stock price may be written as the following sum:

$$P_0 = \frac{D_0(1+g)}{(1+k)} + \frac{D_0(1+g)^2}{(1+k)^2} + \frac{D_0(1+g)^3}{(1+k)^3} + \ldots , \qquad \textbf{(2)}$$

where the three dots indicate that the sum continues indefinitely.

As we shall demonstrate shortly, this sum may be simplified to:

$$P_0 = \frac{D_0(1+g)}{(k-g)}$$

First, however, we need to review the very useful concept of a geometric progression.

Geometric Progression

Consider the sequence of numbers 3, 6, 12, 24,…, where each number after the first is obtained by multiplying the preceding number by the factor 2. Obviously, this sequence of numbers may also be expressed as the sequence 3, 3 x 2, 3 x 2^2, 3 x 2^3, etc. This sequence is an example of a geometric progression.

Definition: A geometric progression is a sequence in which each term after the first is obtained by multiplying some fixed number, called the common ratio, by the preceding term.

A general notation for geometric progressions is: a, the first term, r, the common ratio, and n, the number of terms. Using this notation, any geometric progression may be represented by the sequence:

$$a, ar, ar^2, ar^3, \ldots, ar^{n-1}.$$

In studying the DCF Model, we will find it useful to have an expression for the sum of n terms of a geometric progression. Call this sum S_n. Then

$$S_n = a + ar + \ldots + ar^{n-1} . \qquad \textbf{(3)}$$

However, this expression can be simplified by multiplying both sides of equation (3) by r and then subtracting the new equation from the old. Thus,

$$rS_n = ar + ar^2 + ar^3 + \ldots + ar^n$$

and

$$S_n - rS_n = a - ar^n \quad ,$$

or

$$(1 - r)\, S_n = a\,(1 - r^n) \ .$$

Solving for S_n, we obtain:

$$S_n = \frac{a(1 - r^n)}{(1 - r)} \qquad \textbf{(4)}$$

as a simple expression for the sum of n terms of a geometric progression. Furthermore, if $|r| < 1$, then S_n is finite, and as n approaches infinity, S_n approaches $a \div (1\text{-}r)$. Thus, for a geometric progression with an infinite number of terms and $|r| < 1$, equation (4) becomes:

$$S = \frac{a}{1 - r} \qquad \textbf{(5)}$$

<u>Application to DCF Model</u>

Comparing equation (2) with equation (3), we see that the firm's stock price (under the DCF assumption) is the sum of an infinite geometric progression with the first term

$$a = \frac{D_0(1+g)}{(1+k)}$$

and common factor

$$r = \frac{(1+g)}{(1+k)}$$

Applying equation (5) for the sum of such a geometric progression, we obtain

$$S = a \bullet \frac{1}{(1 - r)} = \frac{D_0(1+g)}{(1+k)} \bullet \frac{1}{1 - \frac{1+g}{1+k}} = \frac{D_0(1+g)}{(1+k)} \bullet \frac{1+k}{k - g} = \frac{D_0(1+g)}{k - g}$$

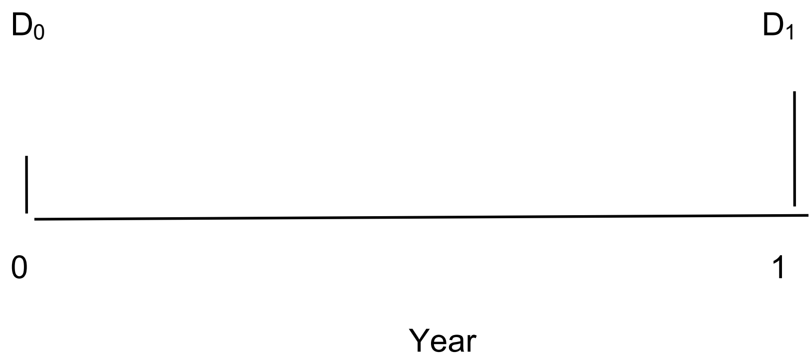
as we suggested earlier.

Quarterly DCF Model

The Annual DCF Model assumes that dividends grow at an annual rate of g% per year (see Figure 1).

Figure 1

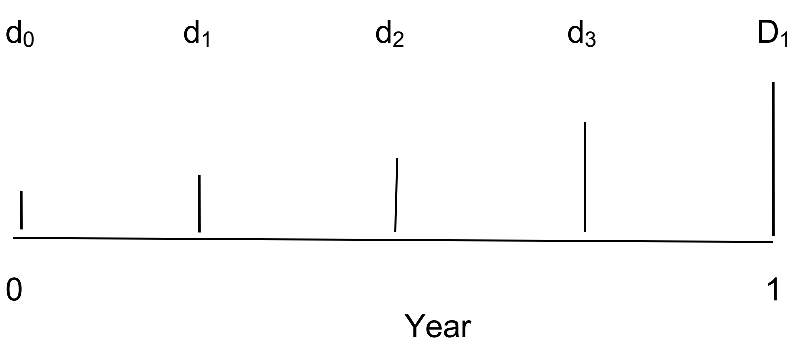
Annual DCF Model



$D_0 = 4d_0$ $\quad$ $D_1 = D_0(1 + g)$

Figure 2

Quarterly DCF Model (Constant Growth Version)



$d_1 = d_0(1+g)^{.25}$ $\quad$ $d_2 = d_0(1+g)^{.50}$

$d_3 = d_0(1+g)^{.75}$ $\quad$ $d_4 = d_0(1+g)$

In the Quarterly DCF Model, it is natural to assume that quarterly dividend payments differ from the preceding quarterly dividend by the factor $(1 + g)^{.25}$, where g is expressed in terms of percent per year and the decimal .25 indicates that the growth has

only occurred for one quarter of the year. (See Figure 2.) Using this assumption, along with the assumption of constant growth and ***k*** > ***g***, we obtain a new expression for the firm's stock price, which takes account of the quarterly payment of dividends. This expression is:

$$P_0 = \frac{d_0(1+g)^{\frac{1}{4}}}{(1+k)^{\frac{1}{4}}} + \frac{d_0(1+g)^{\frac{2}{4}}}{(1+k)^{\frac{2}{4}}} + \frac{d_0(1+g)^{\frac{3}{4}}}{(1+k)^{\frac{3}{4}}} + \dots \qquad \textbf{(6)}$$

where d_0 is the last quarterly dividend payment, rather than the last annual dividend payment. (We use a lower case d to remind the reader that this is not the annual dividend.)

Although equation (6) looks formidable at first glance, it too can be greatly simplified using the formula [equation (4)] for the sum of an infinite geometric progression. As the reader can easily verify, equation (6) can be simplified to:

$$P_0 = \frac{d_0(1+g)^{\frac{1}{4}}}{(1+k)^{\frac{1}{4}} - (1+g)^{\frac{1}{4}}} \qquad \textbf{(7)}$$

Solving equation (7) for *k*, we obtain a DCF formula for estimating the cost of equity under the quarterly dividend assumption:

$$k = \left[\frac{d_0(1+g)^{\frac{1}{4}}}{P_0} + (1+g)^{\frac{1}{4}} \right]^4 - 1 \qquad \textbf{(8)}$$

An Alternative Quarterly DCF Model

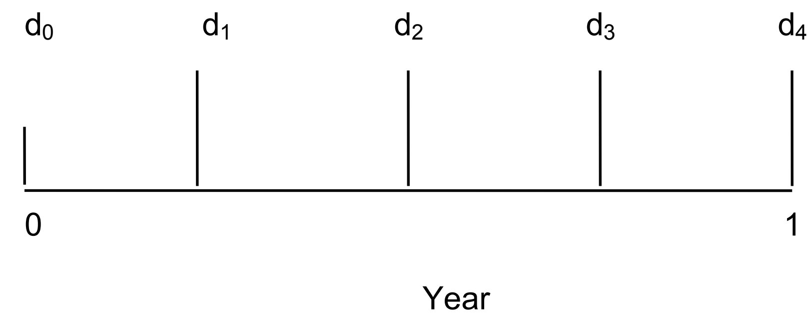
Although the constant growth Quarterly DCF Model [equation (8)] allows for the quarterly timing of dividend payments, it does require the assumption that the firm increases its dividend payments each quarter. Since this assumption is difficult for some analysts to accept, we now discuss a second Quarterly DCF Model that allows for constant quarterly dividend payments within each dividend year.

Assume then that the firm pays dividends quarterly and that each dividend payment is constant for four consecutive quarters. There are four cases to consider, with each case distinguished by varying assumptions about where we are evaluating the firm in relation to the time of its next dividend increase. (See Figure 3.)

Figure 3

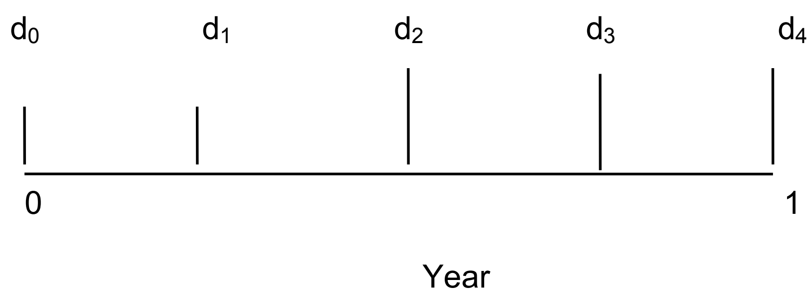
Quarterly DCF Model (Constant Dividend Version)

Case 1



$d_1 = d_2 = d_3 = d_4 = d_0(1+g)$

Case 2

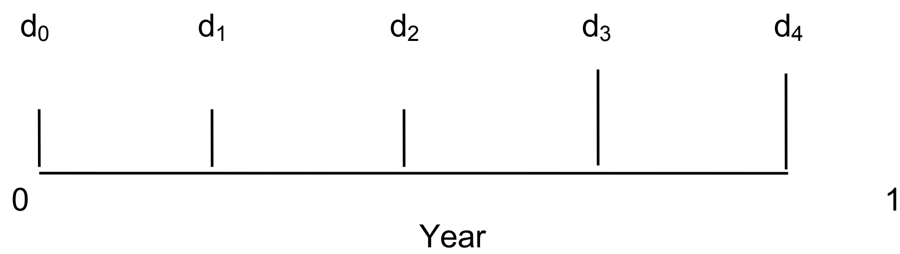


$d_1 = d_0$

$d_2 = d_3 = d_4 = d_0(1+g)$

<u>Figure 3</u> (continued)

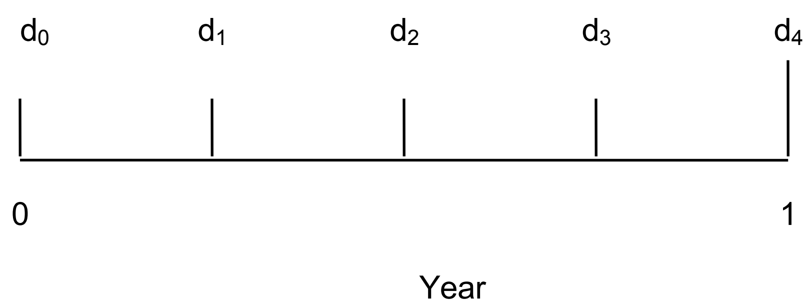
<u>Case 3</u>



$d_1 = d_2 = d_0$

$d_3 = d_4 = d_0(1+g)$

<u>Case 4</u>



$d_1 = d_2 = d_3 = d_0$

$d_4 = d_0(1+g)$

If we assume that the investor invests the quarterly dividend in an alternative investment of the same risk, then the amount accumulated by the end of the year will in all cases be given by

$$D_1^* = d_1\,(1+k)^{3/4} + d_2\,(1+k)^{1/2} + d_3\,(1+k)^{1/4} + d_4$$

where d_1, d_2, d_3 and d_4 are the four quarterly dividends. Under these new assumptions, the firm's stock price may be expressed by an Annual DCF Model of the form (2), with the exception that

$$D_1^* = d_1\,(1 + k)^{3/4} + d_2\,(1 + k)^{1/2} + d_3\,(1 + k)^{1/4} + d_4 \qquad \textbf{(9)}$$

is used in place of $D_0(1+g)$. But, we already know that the Annual DCF Model may be reduced to

$$P_0 = \frac{D_0(1+g)}{k - g}$$

Thus, under the assumptions of the second Quarterly DCF Model, the firm's cost of equity is given by

$$k = \frac{D_1^*}{P_0} + g \quad \textbf{(10)}$$

with D_1^* given by (9).

Although equation (10) looks like the Annual DCF Model, there are at least two very important practical differences. First, since D_1^* is always greater than $D_0(1+g)$, the estimates of the cost of equity are always larger (and more accurate) in the Quarterly Model (10) than in the Annual Model. Second, since D_1^* depends on k through equation (9), the unknown “k” appears on both sides of (10), and an iterative procedure is required to solve for k.

APPENDIX 3
ADJUSTING FOR FLOTATION COSTS IN DETERMINING
A PUBLIC UTILITY'S
ALLOWED RATE OF RETURN ON EQUITY

Introduction

Regulation of public utilities is guided by the principle that utility revenues should be sufficient to allow recovery of all prudently incurred expenses, including the cost of capital. As set forth in the 1944 *Hope Natural Gas* Case [*Federal Power Comm'n v. Hope Natural Gas Co*. 320 U. S. 591 (1944) at 603], the U. S. Supreme Court states:

> From the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock.…By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks.

Since the flotation costs arising from the issuance of debt and equity securities are an integral component of capital costs, this standard requires that the company's revenues be sufficient to fully recover flotation costs.

Despite the widespread agreement that flotation costs should be recovered in the regulatory process, several issues still need to be resolved. These include:

1. How is the term "flotation costs" defined? Does it include only the out-of-pocket costs associated with issuing securities (e. g., legal fees, printing costs, selling and underwriting expenses), or does it also include the reduction in a security's price that frequently accompanies flotation (i. e., market pressure)?
2. What should be the time pattern of cost recovery? Should a company be allowed to recover flotation costs immediately, or should flotation costs be recovered over the life of the issue?
3. For the purposes of regulatory accounting, should flotation costs be included as an expense? As an addition to rate base? Or as an additional element of a firm's allowed rate of return?
4. Do existing regulatory methods for flotation cost recovery allow a firm ***full*** recovery of flotation costs?

In this paper, I review the literature pertaining to the above issues and discuss my own views regarding how this literature applies to the cost of equity for a regulated firm.

Definition of Flotation Cost

The value of a firm is related to the future stream of net cash flows (revenues minus expenses measured on a cash basis) that can be derived from its assets. In the process of acquiring assets, a firm incurs certain expenses which reduce its value. Some of these expenses or costs are directly associated with revenue production in one period (e. g., wages, cost of goods sold), others are more properly associated with revenue production in many periods (e. g., the acquisition cost of plant and equipment). In either case, the word "cost" refers to any item that reduces the value of a firm.

If this concept is applied to the act of issuing new securities to finance asset purchases, many items are properly included in issuance or flotation costs. These include: (1) compensation received by investment bankers for underwriting services, (2) legal fees, (3) accounting fees, (4) engineering fees, (5) trustee's fees, (6) listing fees, (7) printing and engraving expenses, (8) SEC registration fees, (9) Federal Revenue Stamps, (10) state taxes, (11) warrants granted to underwriters as extra compensation, (12) postage expenses, (13) employees' time, (14) market pressure, and (15) the offer discount. The finance literature generally divides these flotation cost items into three categories, namely, underwriting expenses, issuer expenses, and price effects.

Magnitude of Flotation Costs

The finance literature contains several studies of the magnitude of the flotation costs associated with new debt and equity issues. These studies differ primarily with regard to the time period studied, the sample of companies included, and the source of data. The flotation cost studies generally agree, however, that for large issues, underwriting expenses represent approximately one and one-half percent of the proceeds of debt issues and three to five percent of the proceeds of seasoned equity issues. They also agree that issuer expenses represent approximately 0.5 percent of both debt and equity issues, and that the announcement of an equity issue reduces the company's stock price by at least two to three percent of the proceeds from the stock issue. Thus, total flotation costs represent approximately two percent[6] of the proceeds from debt issues, and five and one-half to eight and one-half percent of the proceeds of equity issues.

Lee *et. al.* [14] is an excellent example of the type of flotation cost studies found in the finance literature. The Lee study is a comprehensive recent study of the underwriting and issuer costs associated with debt and equity issues for both utilities and non-utilities. The results of the Lee *et. al.* study are reproduced in Tables 1 and 2. Table 1 demonstrates that the total underwriting and issuer expenses for the 1,092 debt issues in their study averaged 2.24 percent of the proceeds of the issues, while the total underwriting and issuer costs for the 1,593 seasoned equity issues in their study averaged 7.11 percent of the proceeds of the new issue. Table 1 also demonstrates that the total underwriting and issuer costs of seasoned equity offerings, as a percent of proceeds, decline with the size of the issue. For issues above $60 million, total underwriting and issuer costs amount to from three to five percent of the amount of the proceeds.

Table 2 reports the total underwriting and issuer expenses for 135 utility debt issues and 136 seasoned utility equity issues. Total underwriting and issuer expenses for utility bond offerings averaged 1.47 percent of the amount of the proceeds and for seasoned utility equity offerings averaged 4.92 percent of the amount of the proceeds. Again, there are some economies of scale associated with larger equity offerings. Total underwriting and issuer expenses for equity offerings in excess of 40 million dollars generally range from three to four percent of the proceeds.

The results of the Lee study for large equity issues are consistent with results of earlier studies by Bhagat and Frost [4], Mikkelson and Partch [17], and Smith [24]. Bhagat and Frost found that total underwriting and issuer expenses average approximately four and one-half percent of the amount of proceeds from negotiated utility offerings during the period 1973 to 1980, and approximately three and one-half percent of the amount of the proceeds from competitive utility offerings over the

[6] The two percent flotation cost on debt only recognizes the cost of newly-issued debt. When interest rates decline, many companies exercise the call provisions on higher cost debt and reissue debt at lower rates. This process involves reacquisition costs that are not included in the academic studies. If reacquisition costs were included in the academic studies, debt flotation costs could increase significantly.

same period. Mikkelson and Partch found that total underwriting and issuer expenses average five and one-half percent of the proceeds from seasoned equity offerings over the 1972 to 1982 period. Smith found that total underwriting and issuer expenses for larger equity issues generally amount to four to five percent of the proceeds of the new issue.

The finance literature also contains numerous studies of the decline in price associated with sales of large blocks of stock to the public. These articles relate to the price impact of: (1) initial public offerings; (2) the sale of large blocks of stock from one investor to another; and (3) the issuance of seasoned equity issues to the general public. All of these studies generally support the notion that the announcement of the sale of large blocks of stock produces a decline in a company's share price. The decline in share price for initial public offerings is significantly larger than the decline in share price for seasoned equity offerings; and the decline in share price for public utilities is less than the decline in share price for non-public utilities. A comprehensive study of the magnitude of the decline in share price associated specifically with the sale of new equity by public utilities is reported in Pettway [19], who found the market pressure effect for a sample of 368 public utility equity sales to be in the range of two to three percent. This decline in price is a real cost to the utility, because the proceeds to the utility depend on the stock price on the day of issue.

In addition to the price decline associated with the announcement of a new equity issue, the finance literature recognizes that there is also a price decline associated with the actual issuance of equity securities. In particular, underwriters typically sell seasoned new equity securities to investors at a price lower than the closing market price on the day preceding the issue. The Rules of Fair Practice of the National Association of Securities Dealers require that underwriters not sell shares at a price above the offer price. Since the offer price represents a binding constraint to the underwriter, the underwriter tends to set the offer price slightly below the market price on the day of issue to compensate for the risk that the price received by the underwriter may go down, but can not increase. Smith provides evidence that the offer discount tends to be between 0.5 and 0.8 percent of the proceeds of an equity issue. I am not aware of any similar studies for debt issues.

In summary, the finance literature provides strong support for the conclusion that total underwriting and issuer expenses for public utility debt offerings represent approximately two percent of the amount of the proceeds, while total underwriting and issuer expenses for public utility equity offerings represent at least four to five percent of the amount of the proceeds. In addition, the finance literature supports the conclusion that the cost associated with the decline in stock price at the announcement date represents approximately two to three percent as a result of a large public utility equity issue.

TIME PATTERN OF FLOTATION COST RECOVERY

Although flotation costs are incurred only at the time a firm issues new securities, there is no reason why an issuing firm ought to recognize the expense only in the current period. In fact, if assets purchased with the proceeds of a security issue produce revenues over many years, a sound argument can be made in favor of recognizing flotation expenses over a reasonably lengthy period of time. Such recognition is certainly consistent with the generally accepted accounting principle that the time pattern of expenses match the time pattern of revenues, and it is also consistent with the normal treatment of debt flotation expenses in both regulated and unregulated industries.

In the context of a regulated firm, it should be noted that there are many possible time patterns for the recovery of flotation expenses. However, if it is felt that flotation expenses are most

appropriately recovered over a period of years, then it should be recognized that investors must also be compensated for the passage of time. That is to say, the value of an investor's capital will be reduced if the expenses are merely distributed over time, without any allowance for the time value of money.

ACCOUNTING FOR FLOTATION COST IN A REGULATORY SETTING

In a regulatory setting, a firm's revenue requirements are determined by the equation:

Revenue Requirement = Total Expenses + Allowed Rate of Return x Rate Base

Thus, there are three ways in which an issuing firm can account for and recover its flotation expenses: (1) treat flotation expenses as a current expense and recover them immediately; (2) include flotation expenses in rate base and recover them over time; and (3) adjust the allowed rate of return upward and again recover flotation expenses over time. Before considering methods currently being used to recover flotation expenses in a regulatory setting, I shall briefly consider the advantages and disadvantages of these three basic recovery methods.

Expenses. Treating flotation costs as a current expense has several advantages. Because it allows for recovery at the time the expense occurs, it is not necessary to compute amortized balances over time and to debate which interest rate should be applied to these balances. A firm's stockholders are treated fairly, and so are the firm's customers, because they pay neither more nor less than the actual flotation expense. Since flotation costs are relatively small compared to the total revenue requirement, treatment as a current expense does not cause unusual rate hikes in the year of flotation, as would the introduction of a large generating plant in a state that does not allow Construction Work in Progress in rate base.

On the other hand, there are two major disadvantages of treating flotation costs as a current expense. First, since the asset purchased with the acquired funds will likely generate revenues for many years into the future, it seems unfair that current ratepayers should bear the full cost of issuing new securities, when future ratepayers share in the benefits. Second, this method requires an estimate of the underpricing effect on each security issue. Given the difficulties involved in measuring the extent of underpricing, it may be more accurate to estimate the average underpricing allowance for many securities than to estimate the exact figure for one security.

Rate Base. In an article in *Public Utilities Fortnightly*, Bierman and Hass [5] recommend that flotation costs be treated as an intangible asset that is included in a firm's rate base along with the assets acquired with the stock proceeds. This approach has many advantages. For ratepayers, it provides a better match between benefits and expenses: the future ratepayers who benefit from the financing costs contribute the revenues to recover these costs. For investors, if the allowed rate of return is equal to the investors' required rate of return, it is also theoretically fair since they are compensated for the opportunity cost of their investment (including both the time value of money and the investment risk).

Despite the compelling advantages of this method of cost recovery, there are several disadvantages that probably explain why it has not been used in practice. First, a firm will only recover the proper amount for flotation expenses if the rate base is multiplied by the appropriate cost of capital. To the extent that a commission under or over estimates the cost of capital, a firm will under or over recover its flotation expenses. Second, it is may be both legally and psychologically difficult for commissioners to include an intangible asset in a firm's rate base. According to established legal doctrine, assets are to be included in rate base only if they are

"used and useful" in the public service. It is unclear whether intangible assets such as flotation expenses meet this criterion.

Rate of Return. The prevailing practice among state regulators is to treat flotation expenses as an additional element of a firm's cost of capital or allowed rate of return. This method is similar to the second method above (treatment in rate base) in that some part of the initial flotation cost is amortized over time. However, it has a disadvantage not shared by the rate base method. If flotation cost is included in rate base, it is fairly easy to keep track of the flotation cost on each new equity issue and see how it is recovered over time. Using the rate of return method, it is not possible to track the flotation cost for specific issues because the flotation cost for a specific issue is never recorded. Thus, it is not clear to participants whether a current allowance is meant to recover (1) flotation costs actually incurred in a test period, (2) expected future flotation costs, or (3) past flotation costs. This confusion never arises in the treatment of debt flotation costs. Because the exact costs are recorded and explicitly amortized over time, participants recognize that current allowances for debt flotation costs are meant to recover some fraction of the flotation costs on all past debt issues.

EXISTING REGULATORY METHODS

Although most state commissions prefer to let a regulated firm recover flotation expenses through an adjustment to the allowed rate of return, there is considerable controversy about the magnitude of the required adjustment. The following are some of the most frequently asked questions: (1) Should an adjustment to the allowed return be made every year, or should the adjustment be made only in those years in which new equity is raised? (2) Should an adjusted rate of return be applied to the entire rate base, or should it be applied only to that portion of the rate base financed with paid-in capital (as opposed to retained earnings)? (3) What is the appropriate formula for adjusting the rate of return?

This section reviews several methods of allowing for flotation cost recovery. Since the regulatory methods of allowing for recovery of debt flotation costs is well known and widely accepted, I will begin my discussion of flotation cost recovery procedures by describing the widely accepted procedure of allowing for debt flotation cost recovery.

Debt Flotation Costs

Regulators uniformly recognize that companies incur flotation costs when they issue debt securities. They typically allow recovery of debt flotation costs by making an adjustment to both the cost of debt and the rate base (see Brigham [6]). Assume that: (1) a regulated company issues $100 million in bonds that mature in 10 years; (2) the interest rate on these bonds is seven percent; and (3) flotation costs represent four percent of the amount of the proceeds. Then the cost of debt for regulatory purposes will generally be calculated as follows:

$$\begin{aligned}\text{Cost of Debt} &= \frac{\text{Interest expense} + \text{Amortization of flotation costs}}{\text{Principal value - Unamortized flotation costs}} \\ &= \frac{\$7{,}000{,}000 + \$400{,}000}{\$100{,}000{,}000 - \$4{,}000{,}000} \\ &= 7.71\%\end{aligned}$$

Thus, current regulatory practice requires that the cost of debt be adjusted upward by approximately 71 basis points, in this example, to allow for the recovery of debt flotation costs. This example does not include losses on reacquisition of debt. The flotation cost allowance would increase if losses on reacquisition of debt were included.

The logic behind the traditional method of allowing for recovery of debt flotation costs is simple. Although the company has issued $100 million in bonds, it can only invest $96 million in rate base because flotation costs have reduced the amount of funds received by $4 million. If the company is not allowed to earn a 71 basis point higher rate of return on the $96 million invested in rate base, it will not generate sufficient cash flow to pay the seven percent interest on the $100 million in bonds it has issued. Thus, proper regulatory treatment is to increase the required rate of return on debt by 71 basis points.

Equity Flotation Costs

The finance literature discusses several methods of recovering equity flotation costs. Since each method stems from a specific model, (i. e., set of assumptions) of a firm and its cash flows, I will highlight the assumptions that distinguish one method from another.

Arzac and Marcus. Arzac and Marcus [2] study the proper flotation cost adjustment formula for a firm that makes continuous use of retained earnings and external equity financing and maintains a constant capital structure (debt/equity ratio). They assume at the outset that underwriting expenses and underpricing apply only to new equity obtained from external sources. They also assume that a firm has previously recovered all underwriting expenses, issuer expenses, and underpricing associated with previous issues of new equity.

To discuss and compare various equity flotation cost adjustment formulas, Arzac and Marcus make use of the following notation:

k	=	an investors' required return on equity
r	=	a utility's allowed return on equity base
S	=	value of equity in the absence of flotation costs
S_f	=	value of equity net of flotation costs
K_t	=	equity base at time t
E_t	=	total earnings in year t
D_t	=	total cash dividends at time t
b	=	$(E_t-D_t) \div E_t$ = retention rate, expressed as a fraction of earnings
h	=	new equity issues, expressed as a fraction of earnings
m	=	equity investment rate, expressed as a fraction of earnings, $m = b + h < 1$
f	=	flotation costs, expressed as a fraction of the value of an issue.

Because of flotation costs, Arzac and Marcus assume that a firm must issue a greater amount of external equity each year than it actually needs. In terms of the above notation, a firm issues $hE_t \div (1-f)$ to obtain hE_t in external equity funding. Thus, each year a firm loses:

Equation 3

$$L = \frac{hE_t}{1-f} - hE_t = \frac{f}{1-f} \times hE_t$$

due to flotation expenses. The present value, V, of all future flotation expenses is:

Equation 4

$$V = \sum_{t=1}^{\infty} \frac{fhE_t}{(1-f)(1+k)^t} = \frac{fh}{1-f} \times \frac{rK_0}{k-mr}$$

To avoid diluting the value of the initial stockholder's equity, a regulatory authority needs to find the value of r, a firm's allowed return on equity base, that equates the value of equity net of flotation costs to the initial equity base ($S_f = K_0$). Since the value of equity net of flotation costs equals the value of equity in the absence of flotation costs minus the present value of flotation costs, a regulatory authority needs to find that value of *r* that solves the following equation:

$$S_f = S - L.$$

This value is:

Equation 5

$$r = \frac{k}{1 - \frac{fh}{1-f}}$$

To illustrate the Arzac-Marcus approach to adjusting the allowed return on equity for the effect of flotation costs, suppose that the cost of equity in the absence of flotation costs is 12 percent. Furthermore, assume that a firm obtains external equity financing each year equal to 10 percent of its earnings and that flotation expenses equal 5 percent of the value of each issue. Then, according to Arzac and Marcus, the allowed return on equity should be:

$$r = \frac{.12}{1 - \frac{(.05).(.1)}{.95}} = .1206 = 12.06\%$$

Summary. With respect to the three questions raised at the beginning of this section, it is evident that Arzac and Marcus believe the flotation cost adjustment should be applied each year, since continuous external equity financing is a fundamental assumption of their model. They also believe that the adjusted rate of return should be applied to the entire equity-financed portion of the rate base because their model is based on the assumption that the flotation cost adjustment mechanism will be applied to the entire equity financed portion of the rate base. Finally, Arzac and Marcus recommend a flotation cost adjustment formula, Equation (3), that implicitly excludes recovery of financing costs associated with financing in previous periods and includes only an allowance for the fraction of equity financing obtained from external sources.

Patterson. The Arzac-Marcus flotation cost adjustment formula is significantly different from the conventional approach (found in many introductory textbooks) which recommends the adjustment equation:

Equation 6

$$r = \frac{D_t}{P_{t-1}(1-f)} + g$$

where P_{t-1} is the stock price in the previous period and g is the expected dividend growth rate. Patterson [18] compares the Arzac-Marcus adjustment formula to the conventional approach and reaches the conclusion that the Arzac-Marcus formula effectively expenses issuance costs as they are incurred, while the conventional approach effectively amortizes them over an assumed infinite life of the equity issue. Thus, the conventional formula is similar to the formula for the recovery of debt flotation costs: it is not meant to compensate investors for the flotation costs of future issues, but instead is meant to compensate investors for the flotation costs of previous issues. Patterson argues that the conventional approach is more appropriate for rate making purposes because the plant purchased with external equity funds will yield benefits over many future periods.

Illustration. To illustrate the Patterson approach to flotation cost recovery, assume that a newly organized utility sells an initial issue of stock for $100 per share, and that the utility plans to finance all new investments with retained earnings. Assume also that: (1) the initial dividend per share is six dollars; (2) the expected long-run dividend growth rate is six percent; (3) the flotation cost is five percent of the amount of the proceeds; and (4) the payout ratio is 51.28 percent. Then, the investor's required rate of return on equity is [k = (D/P) + g = 6 percent + 6 percent = 12 percent]; and the flotation-cost-adjusted cost of equity is [6 percent (1/.95) + 6 percent = 12.316 percent].

The effects of the Patterson adjustment formula on the utility's rate base, dividends, earnings, and stock price are shown in Table 3. We see that the Patterson formula allows earnings and dividends to grow at the expected six percent rate. We also see that the present value of expected future dividends, $100, is just sufficient to induce investors to part with their money. If the present value of expected future dividends were less than $100, investors would not have been willing to invest $100 in the firm. Furthermore, the present value of future dividends will only equal $100 if the firm is allowed to earn the 12.316 percent flotation-cost-adjusted cost of equity on its entire rate base.

Summary. Patterson's opinions on the three issues raised in this section are in stark contrast to those of Arzac and Marcus. He believes that: (1) a flotation cost adjustment should be applied in every year, regardless of whether a firm issues any new equity in each year; (2) a flotation cost adjustment should be applied to the entire equity-financed portion of the rate base, including that portion financed by retained earnings; and (3) the rate of return adjustment formula should allow a firm to recover an appropriate fraction of all previous flotation expenses.

CONCLUSION

Having reviewed the literature and analyzed flotation cost issues, I conclude that:

Definition of Flotation Cost: A regulated firm should be allowed to recover both the total underwriting and issuance expenses associated with issuing securities and the cost of market pressure.

Time Pattern of Flotation Cost Recovery. Shareholders are indifferent between the alternatives of immediate recovery of flotation costs and recovery over time, as long as they are fairly compensated for the opportunity cost of their money. This opportunity cost must include both the time value of money and a risk premium for equity investments of this nature.

Regulatory Recovery of Flotation Costs. The Patterson approach to recovering flotation costs is the only rate-of-return-adjustment approach that meets the *Hope* case criterion that a regulated company's revenues must be sufficient to allow the company an opportunity to recover all prudently incurred expenses, including the cost of capital. The Patterson approach is also the only rate-of-return-adjustment approach that provides an incentive for investors to invest in the regulated company.

Implementation of a Flotation Cost Adjustment. As noted earlier, prevailing regulatory practice seems to be to allow the recovery of flotation costs through an adjustment to the required rate of return. My review of the literature on this subject indicates that there are at least two recommended methods of making this adjustment: the Patterson approach and the Arzac-Marcus approach. The Patterson approach assumes that a firm's flotation expenses on new equity issues are treated in the same manner as flotation expenses on new bond issues, i. e., they are amortized over future time periods. If this assumption is true (and I believe it is), then the flotation cost adjustment should be applied to a firm's entire equity base, including retained earnings. In practical terms, the Patterson approach produces an increase in a firm's cost of equity of approximately thirty basis points. The Arzac-Marcus approach assumes that flotation costs on new equity issues are recovered entirely in the year in which the securities are sold. Under the Arzac-Marcus assumption, a firm should not be allowed any adjustments for flotation costs associated with previous flotations. Instead, a firm should be allowed only an adjustment on future security sales as they occur. Under reasonable assumptions about the rate of new equity sales, this method produces an increase in the cost of equity of approximately six basis points. Since the Arzac-Marcus approach does not allow the company to recover the entire amount of its flotation cost, I recommend that this approach be rejected and the Patterson approach be accepted.

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Table 1

Direct Costs as a Percentage of Gross Proceeds
for Equity (IPOs and SEOs) and Straight and Convertible Bonds
Offered by Domestic Operating Companies 1990—1994[7]

Equities

	IPOs				SEOs			
Proceeds ($ in millions)	No. of Issues	Gross Spreads	Other Direct Expenses	Total Direct Costs	No. of Issues	Gross Spreads	Other Direct Expenses	Total Direct Costs
2-9.99	337	9.05%	7.91%	16.96%	167	7.72%	5.56%	13.28%
10-19.99	389	7.24%	4.39%	11.63%	310	6.23%	2.49%	8.72%
20-39.99	533	7.01%	2.69%	9.70%	425	5.60%	1.33%	6.93%
40-59.99	215	6.96%	1.76%	8.72%	261	5.05%	0.82%	5.87%
60-79.99	79	6.74%	1.46%	8.20%	143	4.57%	0.61%	5.18%
80-99.99	51	6.47%	1.44%	7.91%	71	4.25%	0.48%	4.73%
100-199.99	106	6.03%	1.03%	7.06%	152	3.85%	0.37%	4.22%
200-499.99	47	5.67%	0.86%	6.53%	55	3.26%	0.21%	3.47%
500 and up	10	5.21%	0.51%	5.72%	9	3.03%	0.12%	3.15%
Total/Average	**1,767**	**7.31%**	**3.69%**	**11.00%**	**1,593**	**5.44%**	**1.67%**	**7.11%**

Bonds

	Convertible Bonds				Straight Bonds			
Proceeds ($ in millions)	No. of Issues	Gross Spreads	Other Direct Expenses	Total Direct Costs	No. of Issues	Gross Spreads	Other Direct Expenses	Total Direct Costs
2-9.99	4	6.07%	2.68%	8.75%	32	2.07%	2.32%	4.39%
10-19.99	14	5.48%	3.18%	8.66%	78	1.36%	1.40%	2.76%
20-39.99	18	4.16%	1.95%	6.11%	89	1.54%	0.88%	2.42%
40-59.99	28	3.26%	1.04%	4.30%	90	0.72%	0.60%	1.32%
60-79.99	47	2.64%	0.59%	3.23%	92	1.76%	0.58%	2.34%
80-99.99	13	2.43%	0.61%	3.04%	112	1.55%	0.61%	2.16%
100-199.99	57	2.34%	0.42%	2.76%	409	1.77%	0.54%	2.31%
200-499.99	27	1.99%	0.19%	2.18%	170	1.79%	0.40%	2.19%
500 and up	3	2.00%	0.09%	2.09%	20	1.39%	0.25%	1.64%
Total/Average	**211**	**2.92%**	**0.87%**	**3.79%**	**1,092**	**1.62%**	**0.62%**	**2.24%**

Notes:

Closed-end funds and unit offerings are excluded from the sample. Rights offerings for SEOs are also excluded. Bond offerings do not include securities backed by mortgages and issues by Federal agencies. Only firm commitment offerings and non-shelf-registered offerings are included.
Gross Spreads as a percentage of total proceeds, including management fee, underwriting fee, and selling concession.
Other Direct Expenses as a percentage of total proceeds, including management fee, underwriting fee, and selling concession.
Total Direct Costs as a percentage of total proceeds (total direct costs are the sum of gross spreads and other direct expenses).

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[7] Inmoo Lee, Scott Lochhead, Jay Ritter, and Quanshui Zhao, "The Costs of Raising Capital," *Journal of Financial Research* Vol 19 No 1 (Spring 1996) pp. 59—74.

Table 2

Direct Costs of Raising Capital 1990—1994
Utility versus Non-Utility Companies[8]

Equities

Non-Utilities	IPOs			SEOs		
Proceeds ($ in millions)	No. of Issues	Gross Spreads	Total Direct Costs	No. Of Issues	Gross Spreads	Total Direct Costs
2-9.99	332	9.04%	16.97%	154	7.91%	13.76%
10-19.99	388	7.24%	11.64%	278	6.42%	9.01%
20-39.99	528	7.01%	9.70%	399	5.70%	7.07%
40-59.99	214	6.96%	8.71%	240	5.17%	6.02%
60-79.99	78	6.74%	8.21%	131	4.68%	5.31%
80-99.99	47	6.46%	7.88%	60	4.35%	4.84%
100-199.99	101	6.01%	7.01%	137	3.97%	4.36%
200-499.99	44	5.65%	6.49%	50	3.27%	3.48%
500 and up	10	5.21%	5.72%	8	3.12%	3.25%
Total/Average	1,742	7.31%	11.01%	1,457	5.57%	7.32%
Utilities Only						
2-9.99	5	9.40%	16.54%	13	5.41%	7.68%
10-19.99	1	7.00%	8.77%	32	4.59%	6.21%
20-39.99	5	7.00%	9.86%	26	4.17%	4.96%
40-59.99	1	6.98%	11.55%	21	3.69%	4.12%
60-79.99	1	6.50%	7.55%	12	3.39%	3.72%
80-99.99	4	6.57%	8.24%	11	3.68%	4.11%
100-199.99	5	6.45%	7.96%	15	2.83%	2.98%
200-499.99	3	5.88%	7.00%	5	3.19%	3.48%
500 and up	0			1	2.25%	2.31%
Total/Average	25	7.15%	10.14%	136	4.01%	4.92%

[8] Lee *et al, op. cit*.

Table 2 (continued)
Direct Costs of Raising Capital 1990—1994
Utility versus Non-Utility Companies[9]

Bonds

Non- Utilities	Convertible Bonds			Straight Bonds		
Proceeds ($ in millions)	No. of Issues	Gross Spreads	Total Direct Costs	No. of Issues	Gross Spreads	Total Direct Costs
2-9.99	4	6.07%	8.75%	29	2.07%	4.53%
10-19.99	12	5.54%	8.65%	47	1.70%	3.28%
20-39.99	16	4.20%	6.23%	63	1.59%	2.52%
40-59.99	28	3.26%	4.30%	76	0.73%	1.37%
60-79.99	47	2.64%	3.23%	84	1.84%	2.44%
80-99.99	12	2.54%	3.19%	104	1.61%	2.25%
100-199.99	55	2.34%	2.77%	381	1.83%	2.38%
200-499.99	26	1.97%	2.16%	154	1.87%	2.27%
500 and up	3	2.00%	2.09%	19	1.28%	1.53%
Total/Average	203	2.90%	3.75%	957	1.70%	2.34%
Utilities Only						
2-9.99	0			3	2.00%	3.28%
10-19.99	2	5.13%	8.72%	31	0.86%	1.35%
20-39.99	2	3.88%	5.18%	26	1.40%	2.06%
40-59.99	0			14	0.63%	1.10%
60-79.99	0			8	0.87%	1.13%
80-99.99	1	1.13%	1.34%	8	0.71%	0.98%
100-199.99	2	2.50%	2.74%	28	1.06%	1.42%
200-499.99	1	2.50%	2.65%	16	1.00%	1.40%
500 and up	0			1	3.50%	na[10]
Total/Average	8	3.33%	4.66%	135	1.04%	1.47%

Notes:
Total proceeds raised in the United States, excluding proceeds from the exercise of over allotment options.
Gross spreads as a percentage of total proceeds (including management fee, underwriting fee, and selling concession).
Other direct expenses as a percentage of total proceeds (including registration fee and printing, legal, and auditing costs).

[9] Lee *et al, op. cit*.

[10] Not available because of missing data on other direct expenses.

Table 3
Illustration of Patterson Approach to Flotation Cost Recovery

Time Period	Rate Base	Earnings @ 12.32%	Earnings @ 12.00%	Dividends	Amortization Initial FC
0	95.00				
1	100.70	11.70	11.40	6.00	0.3000
2	106.74	12.40	12.08	6.36	0.3180
3	113.15	13.15	12.81	6.74	0.3371
4	119.94	13.93	13.58	7.15	0.3573
5	127.13	14.77	14.39	7.57	0.3787
6	134.76	15.66	15.26	8.03	0.4015
7	142.84	16.60	16.17	8.51	0.4256
8	151.42	17.59	17.14	9.02	0.4511
9	160.50	18.65	18.17	9.56	0.4782
10	170.13	19.77	19.26	10.14	0.5068
11	180.34	20.95	20.42	10.75	0.5373
12	191.16	22.21	21.64	11.39	0.5695
13	202.63	23.54	22.94	12.07	0.6037
14	214.79	24.96	24.32	12.80	0.6399
15	227.67	26.45	25.77	13.57	0.6783
16	241.33	28.04	27.32	14.38	0.7190
17	255.81	29.72	28.96	15.24	0.7621
18	271.16	31.51	30.70	16.16	0.8078
19	287.43	33.40	32.54	17.13	0.8563
20	304.68	35.40	34.49	18.15	0.9077
21	322.96	37.52	36.56	19.24	0.9621
22	342.34	39.77	38.76	20.40	1.0199
23	362.88	42.16	41.08	21.62	1.0811
24	384.65	44.69	43.55	22.92	1.1459
25	407.73	47.37	46.16	24.29	1.2147
26	432.19	50.21	48.93	25.75	1.2876
27	458.12	53.23	51.86	27.30	1.3648
28	485.61	56.42	54.97	28.93	1.4467
29	514.75	59.81	58.27	30.67	1.5335
30	545.63	63.40	61.77	32.51	1.6255
Present Value@12%		195.00	190.00	100.00	5.00

APPENDIX 4
EX ANTE RISK PREMIUM APPROACH

My ex ante risk premium method is based on studies of the DCF expected return on proxy companies compared to the interest rate on Moody's A-rated utility bonds. Specifically, for each month in my study period, I calculate the risk premium using the equation,

$$RP_{PROXY} = DCF_{PROXY} - I_A$$

where:

RP_{PROXY}	=	the required risk premium on an equity investment in the proxy group of companies,
DCF_{PROXY}	=	average DCF estimated cost of equity on a portfolio of proxy companies; and
I_A	=	the yield to maturity on an investment in A-rated utility bonds.

For my ex ante risk premium analysis, I begin with my comparable group of natural gas companies shown in Schedule 2. Previous studies have shown that the ex ante risk premium tends to vary inversely with the level of interest rates, that is, the risk premium tends to increase when interest rates decline, and decrease when interest rates go up. To test whether my studies also indicate that the ex ante risk premium varies inversely with the level of interest rates, I perform a regression analysis of the relationship between the ex ante risk premium and the yield to maturity on A-rated utility bonds, using the equation,

$$RP_{PROXY} = a + (b \times I_A) + e$$

where:

RP_{PROXY} = risk premium on proxy company group;

I_A = yield to maturity on A-rated utility bonds;

e = a random residual; and

a, b = coefficients estimated by the regression procedure.

Regression analysis assumes that the statistical residuals from the regression equation are random. My examination of the residuals reveals that there is a significant probability that the residuals are serially correlated (non-zero serial correlation indicates that the residual in one time period tends to be correlated with the residual in the previous time period). Therefore, I make adjustments to my data to correct for the possibility of serial correlation in the residuals.

The common procedure for dealing with serial correlation in the residuals is to estimate the regression coefficients in two steps. First, a multiple regression analysis is used to estimate the serial correlation coefficient, *r*. Second, the estimated serial correlation coefficient is used to transform the original variables into new variables whose serial correlation is approximately zero. The regression coefficients are then re-estimated using the transformed variables as inputs in the regression equation. Based on my knowledge of the statistical relationship between the yield to maturity on A-rated utility bonds and the required risk premium, my estimate of the ex ante risk premium on an investment in my proxy natural gas company group as compared to an investment in A-rated utility bonds is given by the equation:

$$RP_{PROXY} = \underset{(10.80)}{8.70} \quad \underset{(-4.91)}{-0.59 \times I_A}.$$ [11]

[11] The t-statistics are shown in parentheses.

Using a 5.89 percent forecasted yield to maturity on A-rated utility bonds at September 2011,[12] the regression equation produces an ex ante risk premium based on the natural gas proxy group equal to 5.19 percent (8.70 – .59 x 5.89 = 5.19).

To estimate the cost of equity using the ex ante risk premium method, one may add the estimated risk premium over the yield on A-rated utility bonds to the forecasted yield to maturity on A-rated utility bonds. As described above, my analyses produce an estimated risk premium over the yield on A-rated utility bonds equal to 5.2 percent. Adding an estimated risk premium of 5.2 percent to the 5.9 percent forecasted yield to maturity on A-rated utility bonds produces a cost of equity estimate of 11.1 percent using the ex ante risk premium method.

[12] As described in the testimony, the forecasted yield to maturity on A-rated utility bonds, 5.9 percent, is obtained by adding the thirty-nine-basis point spread between the average September 2011 yield on AAA-rated corporate bonds (4.09 percent) and A-rated utility bonds (4.48 percent) to Value Line's forecasted 5.5 percent yield on AAA-rated corporate bonds (see Value Line Selection & Opinion, August 26, 2011, p. 2047)..

APPENDIX 5
RISK PREMIUM APPROACH

Source

Stock price and yield information is obtained from Standard & Poor's Security Price publication. Standard & Poor's derives the stock dividend yield by dividing the aggregate cash dividends (based on the latest known annual rate) by the aggregate market value of the stocks in the group. The bond price information is obtained by calculating the present value of a bond due in 30 years with a $4.00 coupon and a yield to maturity of a particular year's indicated Moody's A-rated utility bond yield. The values shown on Schedules 4 and 5 are the January values of the respective indices. Standard & Poor's discontinued its S&P Utilities Index in December 2001, replacing its utilities stock index with separate indices for electric and natural gas utilities. Thus, to continue my study, I based the stock returns beginning in 2002 on the total returns for the EEI Index of U.S. shareholder-owned electric utilities, as reported by EEI on its website.
http://www.eei.org/whatwedo/DataAnalysis/IndusFinanAnalysis/Pages/QtrlyFinancialUpdates.aspx

Calculation of Stock and Bond Returns

Sample calculation of "Stock Return" column:

$$\text{StockReturn}(2010) = \left[\frac{\text{StockPrice}(2011) - \text{StockPrice}(2010) + \text{Dividend}(2010)}{\text{StockPrice}(2010)}\right]$$

where Dividend (2010) = Stock Price (2010) x Stock Div. Yield (2010)

Sample calculation of "Bond Return" column:

$$\text{Bond Return (2010)} = \left[\frac{\text{Bond Price (2011) - Bond Price (2010) + Interest (2010)}}{\text{Bond Price (2010)}}\right]$$

where Interest = $4.00.

STATE OF TENNESSEE
BEFORE THE TENNESSEE REGULATORY AUTHORITY

APPLICATION OF:	)	
TENNESSEE AMERICAN WATER COMPANY	)	**DOCKET NO.**
FOR A GENERAL INCREASE IN RATES	)	

DIRECT TESTIMONY
OF
DR. JAMES H. VANDER WEIDE
ON BEHALF OF

TENNESSEE AMERICAN WATER COMPANY

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I. WITNESS IDENTIFICATION

Q. 1 What is your name and business address?

A. 1 My name is James H. Vander Weide. I am Research Professor of Finance and Economics at Duke University, the Fuqua School of Business. I am also President of Financial Strategy Associates, a firm that provides strategic and financial consulting services to business clients. My business address is 3606 Stoneybrook Drive, Durham, North Carolina.

Q. 2 Would you please describe your educational background and prior academic experience?

A. 2 I graduated from Cornell University with a Bachelor's Degree in Economics and from Northwestern University with a Ph.D. in Finance. After joining the faculty of the School of Business at Duke University, I was named Assistant Professor, Associate Professor, and then Professor. I have published research in the areas of finance and economics and taught courses in corporate finance, investment management, and management of financial institutions at Duke for more than thirty-five years. My research publications and teaching experience are described in Appendix 1. I am now retired from my teaching duties at Duke.

Q. 3 Have you previously testified on financial or economic issues?

A. 3 Yes. As an expert on financial and economic theory and practice, I have participated in more than 400 regulatory and legal proceedings before the U.S. Congress, the Federal Energy Regulatory Commission, the National Energy Board (Canada), the Federal Communications Commission, the National Telecommunications and Information Administration, the Canadian Radio-Television and Telecommunications Commission, the public service commissions of forty-three states and four Canadian provinces, the insurance commissions of five states, the U.S. Tax Court, the Iowa State Board of Tax Review, the National Association of Securities Dealers, and the North Carolina Property Tax Commission. In addition, I have prepared expert testimony in proceedings before the U.S. District Court for the District of Nebraska; the U.S. District Court for the District of New Hampshire; the U.S. District Court for the District of Northern Illinois; the U.S. District Court for the Eastern District of North Carolina; the Montana Second Judicial District Court, Silver Bow County; the U.S. District Court for the Northern District of California; the Superior Court, North Carolina; the U.S. Bankruptcy Court for the Southern District of West Virginia; and the U. S. District Court for the Eastern District of Michigan.

II. PURPOSE OF TESTIMONY

Q. 4 What is the purpose of your testimony?

A. 4 I have been asked by Tennessee American Water Company (TAWC) to prepare an independent appraisal of its cost of equity capital and to recommend a rate of return on equity that is fair, that allows TAWC to attract capital on reasonable terms, and that allows TAWC to maintain its financial integrity.

Q. 5 How do you estimate TAWC's cost of equity?

A. 5 I estimate TAWC's cost of equity by applying several standard cost of equity estimation techniques, including the discounted cash flow (DCF) model, the risk premium method, and the Capital Asset Pricing Model (CAPM) to groups of comparable risk companies.

Q. 6 Do you generally give equal weight to the results of these standard cost of equity methods?

A. 6 I generally give equal weight to the results of these standard cost of equity methods when the average Value Line beta for the proxy companies is relatively close to 1.0, and the average company in my proxy group has a relatively large market value capitalization. If the average Value Line beta for the proxy companies is significantly less than 1.0, as it is in this present case, and/or the average market value capitalization for the proxy companies is relatively small, I generally give little or no weight to the results of the application of the CAPM.

Q. 7 Why do you give little or no weight to the result of the CAPM when the average Value Line beta is significantly less than 1.0?

A. 7 I give little or no weight to the result of the CAPM when the average Value Line beta is significantly less than 1.0 because financial research provides strong support for the conclusion that the CAPM underestimates the cost of equity for companies whose betas are

significantly less than 1.0. I present a summary of this research in the CAPM section of my testimony.

Q. 8 Why is it appropriate to give less weight to the result of the CAPM when the companies in the proxy group have small market capitalization?

A. 8 It is appropriate to give less weight to the result of the CAPM in this case because financial research also supports the conclusion that the CAPM underestimates the cost of equity for small market capitalization companies.

Q. 9 What cost of equity do you find for your comparable companies in this proceeding?

A. 9 I find that the cost of equity for my comparable companies is in the range 10.7 percent to 11.3 percent. Because the average beta of my proxy companies is significantly less than 1.0, my conclusion is based on the results of my DCF and risk premium studies.

Q. 10 What is your recommendation regarding TAWC's cost of equity?

A. 10 I recommend that TAWC be allowed a fair rate of return on common equity in the range 10.7 percent to 11.3 percent.

Q. 11 Do you have an exhibit to accompany your testimony?

A. 11 Yes. I have an Exhibit___(JVW-1), consisting of nine schedules and five appendices that were prepared by me or under my direction and supervision.

III. ECONOMIC AND LEGAL PRINCIPLES

Q. 12 How do economists define the required rate of return, or cost of capital, associated with particular investment decisions such as the decision to invest in water treatment, storage, and distribution facilities?

A. 12 Economists define the cost of capital as the return investors expect to receive on alternative investments of comparable risk.

Q. 13 How does the cost of capital affect a firm's investment decisions?

A. 13 The goal of a firm is to maximize the value of the firm. This goal can be accomplished by accepting all investments in plant and equipment with an expected rate of return greater than or equal to the cost of capital. Thus, a firm should continue to invest in plant and equipment only so long as the return on its investment is greater than or equal to its cost of capital.

Q. 14 How does the cost of capital affect investors' willingness to invest in a company?

A. 14 The cost of capital measures the return investors can expect on investments of comparable risk. The cost of capital also measures the investor's required rate of return on investment because rational investors will not invest in a particular investment opportunity if the expected return on that opportunity is less than the cost of capital. Thus, the cost of capital is a hurdle rate for both investors and the firm.

Q. 15 Do all investors have the same position in the firm?

A. 15 No. Debt investors have a fixed claim on a firm's assets and income that must be paid prior to any payment to the firm's equity investors. Since the firm's equity investors have a residual claim on the firm's assets and income, equity investments are riskier than debt investments. Thus, the cost of equity exceeds the cost of debt.

Q. 16 What is the economic definition of the cost of equity?

A. 16 As I noted above, the cost of equity is the return investors expect to receive on alternative equity investments of comparable risk. Since the return on an equity investment of comparable risk is not a contractual return, the cost of equity is more difficult to measure than the cost of debt. However, as I have already noted, the cost of equity is greater than the cost of debt. The cost of equity, like the cost of debt, is both forward looking and market based.

Q. 17 How do economists measure the percentages of debt and equity in a firm's capital structure?

A. 17 Economists measure the percentages of debt and equity in a firm's capital structure by first calculating the market value of the firm's debt and the market value of its equity. Economists then calculate the percentage of debt by the ratio of the market value of debt to the combined market value of debt and equity, and the percentage of equity by the ratio of the market value of equity to the combined market values of debt and equity. For example, if a firm's debt has a market value of $25 million and its equity has a market value of $75 million, then its total market capitalization is $100 million, and its capital structure contains 25 percent debt and 75 percent equity.

Q. 18 Why do economists measure a firm's capital structure in terms of the market values of its debt and equity?

A. 18 Economists measure a firm's capital structure in terms of the market values of its debt and equity because: (1) the weighted average cost of capital is defined as the return investors expect to earn on a portfolio of the company's debt and equity securities; (2) investors measure the expected return and risk on their portfolios using market value weights, not book value weights; and (3) market values are the best measures of the amounts of debt and equity investors have invested in the company on a going forward basis.

Q. 19 Why do investors measure the expected return and risk on their investment portfolios using market value weights rather than book value weights?

A. 19 Investors measure the expected return and risk on their investment portfolios using market value weights because market values are the best measure of the amounts the investors currently have invested in each security in the portfolio. From the point of view of investors, the historical cost or book value of their investment is irrelevant for the purpose of assessing the current risk and required return on their portfolios because if they were to sell their investments, they would receive market value, not historical cost. Thus, the return can only be measured in terms of market values.

Q. 20 Is the economic definition of the weighted average cost of capital consistent with regulators' traditional definition of the average cost of capital?

A. 20 No. The economic definition of the weighted average cost of capital is based on the market costs of debt and equity, the market value percentages of debt and equity in a company's capital structure, and the future expected risk of investing in the company. In contrast, regulators have traditionally defined the weighted average cost of capital using the embedded cost of debt and the book values of debt and equity in a company's capital structure.

Q. 21 Are these economic principles regarding the fair return for capital recognized in any Supreme Court cases?

A. 21 Yes. These economic principles, relating to the supply of and demand for capital, are recognized in two United States Supreme Court cases: (1) *Bluefield Water Works and Improvement Co. v. Public Service Comm'n.*; and (2) *Federal Power Comm'n v. Hope Natural Gas Co*. In the *Bluefield Water Works* case, the Court states:

> A public utility is entitled to such rates as will permit it to earn a return upon the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties, but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative

> ventures. The return…should be reasonably sufficient to assure confidence in the financial soundness of the utility, and should be adequate, under efficient and economical management, to maintain and support its credit, and enable it to raise the money necessary for the proper discharge of its public duties. [*Bluefield Water Works and Improvement Co. v. Public Service Comm'n.* 262 U.S. 679, 692 (1923)].

The Court clearly recognizes here that: (1) a regulated firm cannot remain financially sound unless the return it is allowed an opportunity to earn on the value of its property is at least equal to the cost of capital (the principle relating to the demand for capital); and (2) a regulated firm will not be able to attract capital if it does not offer investors an opportunity to earn a return on their investment equal to the return they expect to earn on other investments of the same risk (the principle relating to the supply of capital).

In the *Hope Natural Gas* case, the Court reiterates the financial soundness and capital attraction principles of the *Bluefield* case:

> From the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock... By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital. [*Federal Power Comm'n v. Hope Natural Gas Co*., 320 U.S. 591, 603 (1944)]

IV. BUSINESS AND FINANCIAL RISKS IN THE WATER UTILITY INDUSTRY

Q. 22 Are the returns on investment opportunities, such as an investment in TAWC, known with certainty at the time an investment is made?

A. 22 No. The return on an investment in a company depends on the company's expected future cash flows over the life of the investment. Since the company's expected future cash flows are uncertain at the time the investment is made, the return on the investment is also uncertain.

Q. 23 As you discuss above, investors require a return on investment that is equal to the return they expect to receive on other investments of similar risk. Does the required return on an investment depend on the risk of that investment?

A. 23 Yes. Since investors are averse to risk, they require a higher rate of return on investments with greater risk.

Q. 24 What fundamental risk do investors face when they invest in a company such as TAWC?

A. 24 Investors face the fundamental risk that their realized, or actual, return on investment will be less than their required return on investment.

Q. 25 How do investors measure investment risk?

A. 25 Investors generally measure investment risk by estimating the probability, or likelihood, of earning less than the required return on investment. For investments or projects with potential returns distributed symmetrically about the expected, or mean, return, investors can also measure investment risk by estimating the variance, or volatility, of the potential return on investment.

Q. 26 Do investors distinguish between business and financial risk?

A. 26 Yes. Business risk is the underlying risk that investors will earn less than their required return on investment when the investment is financed entirely with equity. Financial risk is the additional risk of earning less than the required return when the investment is financed with both fixed-cost debt and equity.

Q. 27 What are the primary determinants of a water utility's business risk?

A. 27 The business risk of investing in water utilities such as TAWC is caused by: (1) demand uncertainty; (2) operating expense uncertainty; (3) investment cost uncertainty; (4) high operating leverage; and (5) regulatory uncertainty.

Q. 28 How does demand uncertainty affect a water utility's business risk?

A. 28 Demand uncertainty affects a water utility's business risk through its impact on the variability of the company's revenues and its return on investment. The greater the uncertainty in demand, the greater is the uncertainty in the company's revenues and its return on investment.

Q. 29 What causes the demand for water services to be uncertain?

A. 29 Demand uncertainty is caused by the sensitivity of demand to (1) the state of the economy and population growth; (2) changes in rates; (3) customer efforts to conserve water usage; (4) customer use of more efficient appliances; (5) fluctuations in average temperatures and rainfall from year to year; and (6) potential service restrictions due to severe weather conditions and/or lack of water supply.

Q. 30 Why are a water utility's operating expenses uncertain?

A. 30 Operating expense uncertainty arises as a result of variability in (1) production costs such as fuel and power costs, chemical costs, purchased water and waste disposal costs; (2) employee-related costs such as salaries and wages, pensions, and insurance; (3) operating supply and service costs such as contracted services, office supplies and services, transportation and rent; (4) maintenance and materials costs; and (5) customer billing and accounting expenses.

Q. 31 Why are a water utility's investment costs uncertain?

A. 31 The water utility business requires large investments in the reservoirs and dams, water treatment plants, trunk mains, pumping stations, and distribution facilities required to deliver water service to customers. The future amounts of required investment in water plant and equipment are uncertain due to: (1) long-run demand uncertainty; (2) uncertainty of the investment costs required to comply with environmental, water quality, and health and safety laws and regulations; (3) uncertainty of the investment costs required to maintain and replace aging plant and equipment; and (4) uncertainty in the investment costs required to assure sufficient water supply to meet forecasted demand for water services.

Q. 32 You note above that high operating leverage contributes to the business risk of utilities. What is operating leverage?

A. 32 Operating leverage is the increased sensitivity of a company's earnings to sales variability that arises when some of the company's costs are fixed.

Q. 33 How do economists measure operating leverage?

A. 33 Economists typically measure operating leverage by the ratio of a company's fixed expenses to its operating margin (revenues minus variable expenses).

Q. 34 What is the difference between fixed and variable expenses?

A. 34 Fixed expenses are expenses that do not vary with output, and variable expenses are expenses that vary directly with output. For water utilities, fixed expenses include the fixed component of operating and maintenance costs, depreciation and amortization, and taxes.

Q. 35 Do water utilities typically experience high operating leverage?

A. 35 Yes. As noted above, operating leverage increases when a firm's commitment to fixed costs rises in relation to its operating margin on sales. The relatively high degree of fixed costs in the water utility business arises primarily from: (1) the average water utility's large investment in fixed plant and equipment; and (2) the relative "fixity" of a water utility's operating and maintenance costs. High operating leverage causes the average water utility's operating income to be highly sensitive to demand and revenue fluctuations.

Q. 36 How does operating leverage affect a company's business risk?

A. 36 Operating leverage affects a company's business risk through its impact on the variability of the company's profits or income. Generally speaking, the higher a company's operating leverage, the higher is the variability of the company's operating profits.

Q. 37 How does the typical water utility's operating leverage compare to the operating leverage of electric and natural gas utilities?

A. 37 Operating leverage is sometimes measured by the ratio of fixed plant and equipment to revenues. As discussed in the testimony of Company witness VerDouw, the typical water utility's ratio of fixed plant and equipment to revenues is more than twice that of a typical electric utility and nearly three times that of a typical gas distribution utility (VerDouw at page 18).

Q. 38 Does regulation create uncertainty for water utilities?

A. 38 Yes. Investors' perceptions of the business and financial risks of water utilities are strongly influenced by their views of the quality of regulation. Investors are aware that regulators in some jurisdictions may be unwilling at times to set rates that allow companies an opportunity to recover their cost of service in a timely manner and earn a fair and reasonable return on investment. If investors perceive that regulators may not provide an opportunity to earn a fair rate of return on investment, investors may demand a higher rate of return for water utilities operating in such jurisdictions. On the other hand, if investors perceive that regulators will provide a reasonable opportunity for the company to maintain its financial integrity and earn a fair rate of return on its investment, investors will view regulatory risk as minimal.

Q. 39 You note that financial leverage increases the risk of investors in water utilities such as TAWC. How do economists measure financial leverage?

A. 39 Economists generally measure financial leverage by the percentages of debt and equity in a company's market value capital structure. Companies with a high percentage of debt compared to equity are considered to have high financial leverage.

Q. 40 Why does high financial leverage affect the risk of investing in a water utility's stock?

A. 40 High financial leverage is a source of additional risk to utility stock investors because it increases the percentage of the firm's costs that are fixed, and the presence of higher fixed costs increases the variability of the equity investors' return on investment.

Q. 41 Can the risk of investing in TAWC be distinguished from the risks of investing in companies in other industries?

A. 41 Yes. The risks of investing in water utilities such as TAWC can be distinguished from the risks of investing in companies in many other industries in several ways. First, the risks of investing in water utilities are increased because of the greater capital intensity of the water utility business and the fact that most investments in water facilities are largely irreversible once they are made. Second, unlike returns in competitive industries, the returns from investment in water utilities are largely asymmetric. That is, there is little opportunity for water utilities to earn more than the required return, and a significant chance that the utilities will earn less than the required return.

Q. 42 What conclusion do you draw from your analysis of business and financial risk?

A. 42 Based on my general analysis of the risk of investing in water utilities and on Company witness Mr. VerDouw's analysis of the specific risks of investing in TAWC (see VerDouw testimony at pp. 17 – 26), I conclude that the risk of investing in TAWC is above average compared to the companies in my proxy groups of water and natural gas utilities.

V. COST OF EQUITY ESTIMATION METHODS

Q. 43 What methods do you use to estimate the cost of common equity capital for TAWC?

A. 43 I review the results of three generally accepted methods for estimating the cost of common equity. These are the Discounted Cash Flow (DCF), the risk premium method, and the Capital Asset Pricing Model (CAPM). The DCF method assumes that the current market price of a firm's stock is equal to the discounted value of all expected future cash flows. The risk premium method assumes that the investor's required return on an equity investment is equal to the interest rate on a long-term bond plus an additional equity risk premium to compensate the investor for the risks of investing in equities compared to bonds. The CAPM assumes that the investor's required rate of return on equity is equal to a risk-free rate of interest plus the product of a company-specific risk factor, beta, and the expected risk premium on the market portfolio.

VI. DISCOUNTED CASH FLOW (DCF) APPROACH

Q. 44 Please describe the DCF model.

A. 44 The DCF model is derived from the assumption that investors value an asset on the basis of the future cash flows they expect to receive from owning the asset. Thus, investors value an investment in a bond because they expect to receive a sequence of semi-annual coupon payments over the life of the bond and a terminal payment equal to the bond's face value at the time the bond matures. Likewise, investors value an investment in a firm's stock because they expect to receive a sequence of dividend payments and, perhaps, expect to sell the stock at a higher price sometime in the future.

A second fundamental principle of the DCF approach is that investors value a dollar received in the future less than a dollar received today. A future dollar is valued less than a current dollar because investors could invest a current dollar in an interest earning account and increase their wealth. This principle is called the time value of money.

Applying the two fundamental DCF principles noted above to an investment in a bond leads to the conclusion that investors value their investment in the bond on the basis of the present value of the bond's future cash flows. Thus, the price of the bond should reflect the timing, magnitude, and relative risk of the expected cash flows. Algebraically this can be expressed as:

EQUATION 1

$$P_B = \frac{C}{(1+i)} + \frac{C}{(1+i)^2} + \cdots + \frac{C+F}{(1+i)^n}$$

where:

P_B	=	Bond price;
C	=	Cash value of the constant coupon payment (assumed for notational convenience to occur annually rather than semi-annually);
F	=	Face value of the bond;
i	=	The rate of interest investors could earn by investing their money in an alternative bond of equal risk; and
n	=	The number of periods before the bond matures.

Applying these same principles to an investment in a firm's stock suggests that the price of the stock should be equal to:

EQUATION 2

$$P_s = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \cdots + \frac{D_n + P_n}{(1+k)^n}$$

where:

P_S	=	Current price of the firm's stock;
$D_1, D_2...D_n$	=	Expected annual dividend per share on the firm's stock;
P_n	=	Price per share of stock at the time the investor expects to sell the stock; and
k	=	Return the investor expects to earn on alternative investments of the same risk, i.e., the investor's required rate of return.

Equation (2) is frequently called the annual discounted cash flow model of stock valuation. Assuming that dividends grow at a constant annual rate, *g*, this equation can be solved for *k*, the cost of equity. The resulting cost of equity equation is $k = D_1/P_s + g$, where *k* is the cost of equity, D_1 is the expected next period annual dividend, P_s is the current price of the stock, and *g* is the constant annual growth rate in earnings, dividends, and book value per share. The term D_1/P_s is called the dividend yield component of the annual DCF model, and the term *g* is called the growth component of the annual DCF model. As in the case of the price of a bond, the price of a stock is related to the timing, magnitude, and relative risk of the expected cash flows.

Q. 45 Are you recommending that the annual DCF model be used to estimate TAWC's cost of equity?

A. 45 No. The DCF model assumes that a company's stock price is equal to the present discounted value of all expected future dividends. The annual DCF model is only a correct expression for the present discounted value of future dividends if dividends are paid annually at the end of each year. Since the companies in my proxy group all pay dividends quarterly, the current market price that investors are willing to pay reflects the expected quarterly receipt of dividends. Therefore, a quarterly DCF model must be used to estimate the cost of equity for these firms. The quarterly DCF model differs from the annual DCF model in that it expresses a company's price as the present discounted value of a quarterly stream of dividend payments. A complete analysis of the implications of the quarterly payment of dividends on the DCF model is provided in Exhibit__(JVW-1), Appendix 2. For the reasons cited there, I employed the quarterly DCF model throughout my calculations.

Q. 46 Please describe the quarterly DCF model you used.

A. 46 The quarterly DCF model I used is described on Exhibit___(JVW-1) Schedule 1 and in Appendix 2. The quarterly DCF equation shows that the cost of equity is: the sum of the future expected dividend yield and the growth rate, where the dividend in the dividend yield is the equivalent future value of the four quarterly dividends at the end of the year, and the growth rate is the expected growth in dividends or earnings per share.

Q. 47 In Appendix 2, you demonstrate that the quarterly DCF model provides the theoretically correct valuation of stocks when dividends are paid quarterly. Do investors, in practice, recognize the actual timing and magnitude of cash flows when they value stocks and other securities?

A. 47 Yes. In valuing long-term government or corporate bonds, investors recognize that interest is paid semi-annually. Thus, the price of a long-term government or corporate bond is simply the present value of the semi-annual interest and principal payments on these bonds. Likewise, in valuing mortgages, investors recognize that interest is paid monthly. Thus, the value of a mortgage loan is simply the present value of the monthly interest and principal payments on the loan. In valuing stock investments, stock investors correctly recognize that dividends are paid quarterly. Thus, a firm's stock price is the present value of the stream of quarterly dividends expected from owning the stock.

Q. 48 When valuing bonds, mortgages, or stocks, would investors assume that cash flows are received only at the end of the year, when, in fact, the cash flows are received semi-annually, quarterly, or monthly?

A 48 No. Assuming that cash flows are received at the end of the year when they are received semi-annually, quarterly, or monthly would lead investors to make serious mistakes in valuing investment opportunities. No rational investor would make the mistake of assuming that dividends or other cash flows are paid annually when, in fact, they are paid more frequently.

Q. 49 How do you estimate the growth component of the quarterly DCF model?

A. 49 I use the average analysts' estimates of future earnings per share (EPS) growth reported by I/B/E/S Thomson Reuters (I/B/E/S).

Q. 50 What are the analysts' estimates of future EPS growth?

A. 50 As part of their research, financial analysts working at Wall Street firms periodically estimate EPS growth for each firm they follow. The EPS forecasts for each firm are then published. Investors who are contemplating purchasing or selling shares in individual companies review the forecasts. These estimates represent five-year forecasts of EPS growth.

Q. 51 What is I/B/E/S?

A. 51 I/B/E/S is a division of Thomson Reuters that reports analysts' EPS growth forecasts for a broad group of companies. The forecasts are expressed in terms of a mean forecast and a standard deviation of forecast for each firm. Investors use the mean forecast as an estimate of future firm performance.

Q. 52 Why do you use the I/B/E/S growth estimates?

A. 52 The I/B/E/S growth rates: (1) are widely circulated in the financial community, (2) include the projections of reputable financial analysts who develop estimates of future EPS growth, (3) are reported on a timely basis to investors, and (4) are widely used by institutional and other investors.

Q. 53 Why do you rely on analysts' projections of future EPS growth in estimating the investors' expected growth rate rather than looking at historical growth rates?

A. 53 I rely on analysts' projections of future EPS growth because there is considerable empirical evidence that investors use analysts' forecasts to estimate future earnings growth.

Q. 54 Have you performed any studies concerning the use of analysts' forecasts as an estimate of investors' expected growth rate, g?

A. 54 Yes, I prepared a study in conjunction with Willard T. Carleton, Professor Emeritus of Finance at the University of Arizona, on why analysts' forecasts are the best estimate of investors' expectation of future long-term growth. This study is described in a paper entitled "Investor Growth Expectations and Stock Prices: the Analysts versus History," published in the Spring 1988 edition of *The Journal of Portfolio Management*.

Q. 55 Please summarize the results of your study.

A. 55 First, we performed a correlation analysis to identify the historically oriented growth rates which best described a firm's stock price. Then we did a regression study comparing the historical growth rates with the average analysts' forecasts. In every case, the regression equations containing the average of analysts' forecasts statistically outperformed the regression equations containing the historical growth estimates. These results are consistent with those found by Cragg and Malkiel, the early major research in this area (John G. Cragg and Burton G. Malkiel, *Expectations and the Structure of Share Prices*, University of Chicago Press, 1982). These results are also consistent with the hypothesis that investors use analysts' forecasts, rather than historically oriented growth calculations, in making stock buy and sell decisions. They provide overwhelming evidence that the analysts' forecasts of future growth are superior to historically oriented growth measures in predicting a firm's stock price.

Q. 56 Has your study been updated?

A. 56 Yes. Researchers at State Street Financial Advisors updated my study using data through year-end 2003. Their results continue to confirm that analysts' growth forecasts are superior to historically-oriented growth measures in predicting a firm's stock price.

Q. 57 What price do you use in your DCF model?

A. 57 I use a simple average of the monthly high and low stock prices for each firm for the three-month period ending March 2012. These high and low stock prices were obtained from Thomson Reuters.

Q. 58 Why do you use the three-month average stock price in applying the DCF method?

A. 58 I use the three-month average stock price in applying the DCF method because stock prices fluctuate daily, while financial analysts' forecasts for a given company are generally changed less frequently, often on a quarterly basis. Thus, to match the stock price with an earnings forecast, it is appropriate to average stock prices over a three-month period.

Q. 59 Do you include an allowance for flotation costs in your DCF analysis?

A. 59 Yes. I include a five percent allowance for flotation costs in my DCF calculations.

Q. 60 Please explain your inclusion of flotation costs.

A. 60 All firms that have sold securities in the capital markets have incurred some level of flotation costs, including underwriters' commissions, legal fees, printing expense, etc. These costs are withheld from the proceeds of the stock sale or are paid separately, and must be recovered over the life of the equity issue. Costs vary depending upon the size of the issue, the type of registration method used and other factors, but in general these costs range between three and five percent of the proceeds from the issue [see Lee, Inmoo, Scott Lochhead, Jay Ritter, and Quanshui Zhao, "The Costs of Raising Capital," *The Journal of Financial Research*, Vol. XIX No 1 (Spring 1996), 59-74, and Clifford W. Smith, "Alternative Methods for Raising Capital," *Journal of Financial Economics* 5 (1977) 273-307]. In addition to these costs, for large equity issues (in relation to outstanding equity shares), there is likely to be a decline in price associated with the sale of shares to the public. On average, the decline due to market pressure has been estimated at two to three percent [see Richard H. Pettway, "The Effects of New Equity Sales Upon Utility Share Prices," *Public Utilities Fortnightly*, May 10, 1984, 35—39]. Thus, the total flotation cost, including both issuance expense and market pressure, could range anywhere from five to eight percent of the proceeds of an equity issue. I believe a combined five percent allowance for flotation costs is a conservative estimate that should be used in applying the DCF model in this proceeding.

Q. 61 Does TAWC issue equity in the capital markets?

A. 61 No. Although TAWC does not issue equity in the capital markets, its parent must issue equity to provide TAWC the necessary financing to make investments in its water supply operations. If the parent is not able to recover its flotation costs through TAWC's rates, it will have no incentive to invest in TAWC.

Q. 62 Is a flotation cost adjustment only appropriate if a company issues stock during the test year?

A. 62 No. As described in Exhibit__(JVW-1), Appendix 3, a flotation cost adjustment is required whether or not a company issued new stock during the test year. Previously incurred flotation costs have not been recovered in previous rate cases; rather, they are a permanent cost associated with past issues of common stock. Just as an adjustment is made to the embedded cost of debt to reflect previously incurred debt issuance costs (regardless of whether additional bond issuances were made in the test year), so should an adjustment be made to the cost of equity regardless of whether additional stock was issued during the test year.

Q. 63 How do you apply the DCF approach to obtain the cost of equity capital for TAWC?

A. 63 I apply the DCF approach to the publicly-traded water companies shown on Exhibit___(JVW-1) Schedule 1 and the publicly-traded natural gas distribution companies (LDCs) shown on Exhibit___(JVW-1) Schedule 2.

Q. 64 How do you select your group of publicly-traded water companies?

A. 64 I select all the water companies included in the Value Line Investment Survey that: (1) pay dividends; (2) did not decrease dividends during any quarter of the past two years; (3) have at least two analyst's long-term growth forecasts; and (4) are not the subject of a merger that has not been completed. In addition, all of the companies included in my group have a Value Line Safety Rank of 2 or 3, where 3 is the average Safety Rank of the Value Line universe of companies.

Q. 65 Why do you eliminate companies that have either decreased or eliminated their dividend in the past two years?

A. 65 The DCF model requires the assumption that dividends will grow at a constant rate into the indefinite future. If a company has either decreased or eliminated its dividend in recent years, an assumption that the company's dividend will grow at the same rate into the indefinite future is questionable.

Q. 66 Why do you eliminate companies that do not have any analyst's long-term growth forecasts?

A. 66 As noted above, my studies indicate that the analysts' growth forecasts best approximate the growth forecasts used by investors in making stock buy and sell decisions; and thus, the average of the analysts' growth forecasts is the best available estimate of the growth term in the DCF Model. In my opinion, it is difficult to apply the DCF model to companies that do not have any analysts' long-term growth estimates.

Q. 67 Are the Value Line water companies widely followed by analysts in the investment community?

A. 67 As a result of their small size and low investor turnover, the water companies are generally followed by few analysts.

Q. 68 Recognizing the greater uncertainty associated with DCF results based on just two analysts' forecasts, do you supplement your DCF results for the water companies with a DCF analysis of an additional proxy group?

A. 68 Yes. Given the greater uncertainty in applying the DCF model to companies with fewer analysts' growth forecasts, I also apply the DCF model to an additional proxy group consisting of natural gas distribution companies ("LDCs"), and each of the companies in the LDC proxy group has at least two analysts' estimates of long-term growth.

Q. 69 Why do you eliminate companies that are being acquired in transactions that are not yet completed?

A. 69 A merger announcement generally increases the target company's stock price, but not the acquiring company's stock price. Analysts' growth forecasts for the target company, on the other hand, are necessarily related to the company as it currently exists. The use of a stock price that includes the growth-enhancing prospects of potential mergers in conjunction with growth forecasts that do not include the growth-enhancing prospects of potential mergers produces DCF results that tend to distort a company's cost of equity.

Q. 70 Please summarize the result of your application of the DCF model to your water company proxy group.

A. 70 As shown in Exhibit__(JVW-1), Schedule 1, my application of the DCF model to the Value Line water companies produces a market-weighted average DCF result of 11.8 percent and a simple average DCF result of 10.6 percent. Because American Water Works represents approximately fifty-five percent of the market capitalization of all the water companies in the group, I will use the midpoint of market-weighted and simple average results, 11.2 percent.

Q. 71 You note above that you also apply your DCF method to a proxy group of LDCs. Why do you apply your DCF model to a proxy group of LDCs?

A. 71 I apply my DCF model to a proxy group of LDCs because: (1) the sample of publicly-traded water companies with sufficient information to estimate the cost of equity is relatively small; (2) the LDCs are a conservative proxy for the risk of investing in water companies, and (3) it is useful to examine the cost of equity results for a group of companies of similar risk in order to test the reasonableness of the results obtained by applying cost of equity methodologies to the group of publicly-traded water companies. Financial theory does not require that companies be in exactly the same industry to be comparable in risk.

Q. 72 How do you select your proxy group of LDCs?

A. 72 I select all the companies in Value Line's natural gas industry groups that: (1) are in the business of natural gas distribution; (2) paid dividends during every quarter of the last two years; (3) did not decrease dividends during any quarter of the past two years; (4) have at least two analysts included in the I/B/E/S consensus growth forecast; and (5) are not the subject of a merger offer that has not been completed. In addition, all of the LDCs included in my group have an investment grade bond rating and a Value Line Safety Rank of 1, 2, or 3. The LDCs in my DCF proxy group and the average DCF result are shown on Exhibit___(JVW-1) Schedule 2.

Q. 73 How are the LDCs similar to TAWC?

A. 73 Like TAWC, the LDCs invest primarily in a capital-intensive physical network that connects the customer to the source of supply, and sell their products and services at regulated rates to customers whose demand is primarily dependent on weather and the state of the economy.

Q. 74 Does your LDC proxy group meet the standards of the *Hope* and *Bluefield* cases you cite above?

A. 74 Yes. The *Hope* and *Bluefield* standard states that a public utility should be allowed to earn a return on its investment that is commensurate with the returns investors are able to earn on investments having similar risk. The LDCs are a group of companies that meet the standards of the *Hope* and *Bluefield* cases because they are a conservative proxy for the risk of investing in TAWC.

Q. 75 Do you have any empirical evidence that the LDCs in your proxy group are a conservative proxy for TAWC?

A. 75 Yes. The average Value Line Safety Rank for my proxy group of LDCs is approximately 2, on a scale where 1 is the most safe and 5 is the least safe, whereas the water companies have an average Value Line Safety Rank of 3.

Q. 76 Please summarize the results of your application of the DCF method to the LDC proxy group.

A. 76 My application of the DCF method to the LDC proxy group produces a market-weighted average result of 10.7 percent, as shown on Exhibit___(JVW-1) Schedule 2.

VII. RISK PREMIUM APPROACH

Q. 77 Please describe the risk premium approach to estimating TAWC's cost of equity.

A. 77 The risk premium approach is based on the principle that investors expect to earn a return on an equity investment in TAWC that reflects a "premium" over and above the return they expect to earn on an investment in a portfolio of long-term bonds. This equity risk premium compensates equity investors for the additional risk they bear in making equity investments versus bond investments.

Q. 78 How do you measure the required risk premium on an equity investment in TAWC?

A. 78 I use two methods to estimate the required risk premium on an equity investment in TAWC. The first is called the ex ante risk premium method, and the second is called the ex post risk premium method.

A. Ex Ante Risk Premium Approach

Q. 79 Please describe your ex ante risk premium approach for measuring the required risk premium on an equity investment in TAWC.

A. 79 My ex ante risk premium method is based on studies of the DCF expected return on a comparable group of natural gas distribution companies, which I compared to the interest rate on Moody's A-rated utility bonds. Specifically, for each month in my study period, I calculate the risk premium using the equation,

$$RP_{PROXY} = DCF_{PROXY} - I_A$$

where:

RP_{PROXY}	=	the required risk premium on an equity investment in the proxy group of companies;
DCF_{PROXY}	=	average DCF estimated cost of equity on a portfolio of proxy companies; and
I_A	=	the yield to maturity on an investment in A-rated utility bonds.

I then perform a regression analysis to determine if there is a relationship between the calculated risk premium and interest rates. Finally, I use the results of the regression analysis to estimate the investors' required risk premium. To estimate the cost of equity, I then add the required risk premium to the interest rate on A-rated utility bonds. A detailed description of my ex ante risk premium studies is contained in Appendix 4, and the underlying DCF results and interest rates are displayed in Exhibit___(JVW-1) Schedule 3.

Q. 80 Why do you apply your ex ante risk premium study to LDCs rather than to water companies?

A. 80 I apply my ex ante risk premium approach to LDCs rather than to water companies because the LDCs are similar in risk to the water companies and there is sufficient data to apply the DCF method to the sample companies over a relatively long period of time. In contrast, there are few water utilities with consistent data extending back for a reasonably long study period.

Q. 81 What estimated risk premium do you obtain from your ex ante risk premium method?

A. 81 As described in Appendix 4, my analyses produce an estimated risk premium over the yield on A-rated utility bonds equal to 4.84 percent.

Q. 82 What cost of equity result do you obtain from your ex ante risk premium study?

A. 82 To estimate the cost of equity using the ex ante risk premium method, one may add the estimated risk premium over the yield on A-rated utility bonds to the forecasted yield to maturity on A-rated utility bonds. As noted above, one could use the yield to maturity on other debt investments to measure the interest rate component of the risk premium approach as long as one uses the yield on the same debt investment to measure the expected risk premium component of the risk premium approach. I choose to use the yield on A-rated utility bonds because it is a frequently-used benchmark for utility bond yields. I obtain the forecasted yield to maturity on A-rated utility bonds, 6.47 percent, by averaging forecast data from Value Line and Global

Insight.[1] My analyses produce an estimated risk premium over the yield on A-rated utility bonds equal to 4.84 percent. Adding an estimated risk premium of 4.8 percent to the 6.5 percent forecasted yield to maturity on A-rated utility bonds produces a cost of equity estimate of 11.3 percent using the ex ante risk premium method (see Appendix 4).

B. Ex Post Risk Premium Approach

Q. 83 Please describe your ex post risk premium approach for measuring the required risk premium on an equity investment in TAWC.

A. 83 I first perform a study of the comparable returns received by bond and stock investors over the seventy-five years of my study. I estimate the returns on stock and bond portfolios, using stock price and dividend yield data on the S&P 500 and bond yield data on Moody's A-rated Utility Bonds. My study consists of making an investment of one dollar in the S&P 500 and Moody's A-rated utility bonds at the beginning of 1937, and reinvesting the principal plus return each year to 2012. The return associated with each stock portfolio is the sum of the annual

[1] Value Line Selection & Opinion (February 24, 2012) projects a AAA-rated Corporate bond yield equal to 5.30 percent. The February 2012 average spread between A-rated utility bonds and Aaa-rated Corporate bonds is fifty-one basis points (A-rated utility, 4.36 percent, less Aaa-rated Corporate, 3.85 percent, equals fifty-one basis points). Adding fifty-one basis points to the 5.30 percent Value Line forecast equals a forecast yield of 5.81 percent. Global Insight, February 2012, forecasts a AA-rated utility bond yield equal to 6.80 percent. The average spread between AA-rated utility and A-rated utility bonds, February 2012, is thirty-four basis points (4.36 percent less 4.02 percent). Adding thirty-four basis points to the Global Insight forecast of 6.80 percent equals a forecast yield for A-rated utility bonds equal to 7.14 percent. The average of the forecasts, (5.81 percent using Value Line data and 7.14 percent using Global Insight data) is 6.47 percent.

dividend yield and capital gain (or loss) which accrued to this portfolio during the year(s) in which it was held. The return associated with the bond portfolio, on the other hand, is the sum of the annual coupon yield and capital gain (or loss) which accrued to the bond portfolio during the year(s) in which it was held. The resulting annual returns on the stock and bond portfolios purchased in each year from 1937 to 2012 are shown on Exhibit___(JVW-1) Schedule 4). The average annual return on an investment in the S&P 500 stock portfolio is 11.0 percent, while the average annual return on an investment in the Moody's A-rated utility bond portfolio is 6.7 percent. The risk premium on the S&P 500 stock portfolio is, therefore, 4.3 percent.

I also conduct a second study using stock data on the S&P Utilities rather than the S&P 500. As shown on Exhibit___(JVW-1) Schedule 5, the S&P Utility stock portfolio shows an average annual return of 10.6 percent per year. Thus, the return on the S&P Utility stock portfolio exceeds the return on the Moody's A–rated utility bond portfolio by 3.8 percent (apparent discrepancy due to rounding).

Q. 84 Why is it appropriate to perform your ex post risk premium analysis using both the S&P 500 and the S&P Utility Stock indices?

A. 84 I perform my ex post risk premium analysis on both the S&P 500 and the S&P Utilities because I believe utilities today face risks that are somewhere in between the average risk of the S&P Utilities and the

S&P 500 over the years 1937 to 2012. Thus, I use the average of the two historically-based risk premiums as my estimate of the required risk premium in my ex post risk premium method.

Q. 85 Why do you analyze investors' experiences over such a long time frame?

A. 85 Because day-to-day stock price movements can be somewhat random, it is inappropriate to rely on short-run movements in stock prices in order to derive a reliable risk premium. Rather than buying and selling frequently in anticipation of highly volatile price movements, most investors employ a strategy of buying and holding a diversified portfolio of stocks. This buy-and-hold strategy will allow an investor to achieve a much more predictable long-run return on stock investments and at the same time will minimize transaction costs. The situation is very similar to the problem of predicting the results of coin tosses. I cannot predict with any reasonable degree of accuracy the result of a single, or even a few, flips of a balanced coin; but I can predict with a good deal of confidence that approximately fifty heads will appear in one hundred tosses of this coin. Under these circumstances, it is most appropriate to estimate future experience from long-run evidence of investment performance.

Q. 86 Would your study provide a different ex post risk premium if you started with a different time period?

A. 86 Yes, the ex post risk premium results vary somewhat depending on the historical time period chosen. My policy is to go back as far in history as I can get reliable data. I believe it is most meaningful to begin after the passage and implementation of the Public Utility Holding Company Act of 1935. This Act significantly changed the structure of the public utility industry. Since the Public Utility Holding Company Act of 1935 was not implemented until the beginning of 1937, I feel that numbers taken from before this date are not comparable to those taken after. (The repeal of the 1935 Act does not have a material impact on the structure of the public utility industry; thus, the Act's repeal does not have any impact on my choice of time period.)

Q. 87 Why is it necessary to examine the yield from debt investments in order to determine the investors' required rate of return on equity capital?

A. 87 As previously explained, investors expect to earn a return on their equity investment that exceeds currently available bond yields because the return on equity, as a residual return, is less certain than the yield on bonds; and investors must be compensated for this uncertainty. Second, investors' current expectations concerning the amount by which the return on equity will exceed the bond yield will be strongly influenced by historical differences in returns to bond and stock investors. For these reasons, we can estimate investors' current expected returns on equity investments from knowledge of current bond yields and past differences between returns on stocks and bonds.

Q. 88 Has there been any significant trend in the ex post equity risk premium over the 1937 to 2012 time period of your study?

A. 88 No. Statisticians test for trends in data series by regressing the data observations against time. I have performed such a time series regression on my two data sets of historical risk premiums. As shown below in TABLE 1 and TABLE 2, there is no statistically significant trend in my risk premium data. Indeed, the coefficient on the time variable is insignificantly different from zero (if there were a trend, the coefficient on the time variable should be significantly different from zero).

TABLE 1
REGRESSION OUTPUT FOR RISK PREMIUM ON S&P 500

LINE NO.		INTERCEPT	TIME	ADJUSTED R SQUARE	F
1	Coefficient	3.013	(0.002)	0.024	2.83
2	T Statistic	1.706	(1.682)		

TABLE 2
REGRESSION OUTPUT FOR RISK PREMIUM ON S&P UTILITIES

LINE NO.		INTERCEPT	TIME	ADJUSTED R SQUARE	F
1	Coefficient	1.990	(0.001)	0.008	1.56
2	T Statistic	1.275	(1.251)		

Q. 89 Is your conclusion that there is no significant trend in the equity risk premium supported in the financial literature?

A. 89 Yes. Ibbotson® SBBI® 2012 Valuation Edition Yearbook Stocks, Bonds, Bills, and Inflation® (“Ibbotson® SBBI®”) published by Morningstar, Inc., contains an analysis of “trends” in historical risk premium data.

Ibbotson® SBBI® uses correlation analysis to determine if there is any pattern or “trend” in risk premiums over time. This analysis also demonstrates that there are no trends in risk premiums over time.

Q. 90 Why is it significant that historical risk premiums have no trend or other statistical pattern over time?

A. 90 The significance of this evidence is that the average historical risk premium is a reasonable estimate of the future expected risk premium. As noted in Ibbotson® SBBI®:

> The significance of this evidence is that the realized equity risk premium next year will not be dependent on the realized equity risk premium from this year. That is, there is no discernable pattern in the realized equity risk premium—it is virtually impossible to forecast next year’s realized risk premium based on the premium of the previous year. For example, if this year’s difference between the riskless rate and the return on the stock market is higher than last year’s, that does not imply that next year’s will be higher than this year’s. It is as likely to be higher as it is lower. The best estimate of the expected value of a variable that has behaved randomly in the past is the average (or arithmetic mean) of its past values. [Ibbotson® SBBI®, page 58.]

Q. 91 What conclusions do you draw from your ex post risk premium analyses about the required return on an equity investment in TAWC?

A. 91 My studies provide strong evidence that investors today require an equity return of approximately 3.8 to 4.3 percentage points above the expected yield on A-rated utility bonds. As discussed above, the forecast yield on A-rated utility bonds is 6.47 percent. Adding a 3.8 to 4.3 percentage point risk premium to a yield of 6.47 percent on A-rated utility bonds, I obtain an expected return on equity in the range

10.3 percent to 10.8 percent, with a midpoint of 10.5 percent. Adding a twenty-basis-point allowance for flotation costs, I obtain an estimate of 10.7 percent as the ex post risk premium cost of equity for TAWC. (I determine the flotation cost allowance by calculating the difference in my DCF results with and without a flotation cost allowance.).

VIII. CAPITAL ASSET PRICING MODEL

Q. 92 What is the CAPM?

A. 92 The CAPM is an equilibrium model of the security markets in which the expected or required return on a given security is equal to the risk-free rate of interest, plus the company equity "beta," times the market risk premium:

Cost of equity = Risk-free rate + Equity beta x Market risk premium

The risk-free rate in this equation is the expected rate of return on a risk-free government security, the equity beta is a measure of the company's risk relative to the market as a whole, and the market risk premium is the premium investors require to invest in the market basket of all securities compared to the risk-free security.

Q. 93 How do you use the CAPM to estimate the cost of equity for your proxy companies?

A. 93 The CAPM requires an estimate of the risk-free rate, the company-specific risk factor or beta, and the expected return on the market portfolio. For my estimate of the risk-free rate, I use the forecasted yield to maturity on 20-year Treasury bonds of 4.9 percent, using forecast data from Value Line and Global Insight.[2] I use the 20-year Treasury bond to estimate the risk-free rate because SBBI estimates the risk premium using 20-year Treasury bonds, and one should use the same maturity to estimate the risk-free rate as is used to estimate the risk premium on the market portfolio.

For my estimate of the company-specific risk, or beta, I use the average 0.65 Value Line beta for my proxy water companies. For my estimate of the expected risk premium on the market portfolio, I use two approaches. First, I estimate the risk premium on the market portfolio using historical risk premium data reported by SBBI. Second, I estimate the risk premium on the market portfolio from the difference between the DCF cost of equity for the S&P 500 and the forecasted yield to maturity on 20-year Treasury bonds.

Q. 94 How do you estimate the expected risk premium on the market portfolio using historical risk premium data reported by SBBI?

A. 94 I estimate the expected risk premium on the market portfolio by calculating the difference between the arithmetic mean return on the S&P 500 from 1926 through 2011 (11.77 percent) and the average

2 Value Line forecasts a yield on 10-year Treasury notes equal to 3.5 percent. The current spread between the average February 2012 yield on 10-year Treasury notes (1.97 percent) and 20-year Treasury bonds (2.75 percent) is seventy-eight basis points. Adding seventy-eight basis points to Value Line's 3.5 percent forecast produces a forecasted yield of 4.28 percent for 20-year Treasury bonds (see Value Line Investment Survey, Selection & Opinion, February 24, 2012). Global Insight forecasts a yield of 4.77 percent on 10-year Treasury notes. Adding the seventy-eight basis point spread between 10-year Treasury notes and 20-year Treasury bonds to the Global Insight forecast of 4.77 percent equals a Global Insight forecast for 20-year Treasury bonds equal to 5.55 percent. The average of the Value Line and Global Insight forecasts (4.28 percent and 5.55 percent, respectively) is 4.91 percent.

income return on 20-year U.S. Treasury bonds over the same period (5.15 percent) (see Ibbotson® SBBI® 2012 Valuation Yearbook, published by Morningstar®). Thus, my historical risk premium method produces a risk premium of 6.6 percent (11.77 – 5.15 = 6.62).

Q. 95 Why do you recommend that the risk premium on the market portfolio be estimated using the arithmetic mean return on the S&P 500?

A. 95 As explained in SBBI, the arithmetic mean return is the best approach for calculating the return investors expect to receive in the future:

> The equity risk premium data presented in this book are arithmetic average risk premia as opposed to geometric average risk premia. The arithmetic average equity risk premium can be demonstrated to be most appropriate when discounting future cash flows. For use as the expected equity risk premium in either the CAPM or the building block approach, the arithmetic mean or the simple difference of the arithmetic means of stock market returns and riskless rates is the relevant number. This is because both the CAPM and the building block approach are additive models, in which the cost of capital is the sum of its parts. The geometric average is more appropriate for reporting past performance, since it represents the compound average return. [SBBI, p. 56.]

A discussion of the importance of using arithmetic mean returns in the context of CAPM or risk premium studies is contained in Exhibit___(JVW-1) Schedule 6.

Q. 96 Why do you recommend that the risk premium on the market portfolio be estimated using the income return on 20-year Treasury bonds rather than the total return on these bonds?

A. 96 As discussed above, the CAPM requires an estimate of the risk-free rate of interest. When Treasury bonds are issued, the income return on the bond is risk free, but the total return, which includes both income and capital gains or losses, is not. Thus, the income return should be used in the CAPM because it is only the income return that is risk free.

Q. 97 What CAPM result do you obtain when you estimate the expected return on the market portfolio from the arithmetic mean difference between the return on the market and the yield on 20-year Treasury bonds?

A. 97 I obtain a CAPM estimate of 9.4 percent (see Exhibit___(JVW-1) Schedule 7).

Q. 98 What CAPM result do you obtain when you estimate the risk premium on the market portfolio by applying the DCF model to the S&P 500?

A. 98 I obtain a CAPM result of 10.3 percent (see Exhibit___(JVW-1) Schedule 8).

Q. 99 Can a reasonable application of the CAPM produce higher cost of equity results than you have just reported?

A. 99 Yes. The CAPM tends to underestimate the cost of equity for small market capitalization companies such as my water companies.

Q. 100 Does the finance literature support an adjustment to the CAPM equation to account for a company's size as measured by market capitalization supported in the finance literature?

A. 100 Yes. For example, Ibbotson® SBBI® supports such an adjustment. Their estimates of the size premium required to be added to the basic CAPM cost of equity are shown below in TABLE 3.

TABLE 3
IBBOTSON® ESTIMATES OF PREMIUMS FOR COMPANY SIZE[3]

DECILE	SMALLEST MKT. CAP. ($MILLIONS)	LARGEST MKT. CAP. ($MILLIONS)	PREMIUM
Large-Cap (No Adjustment)	>6,896.389		--
Mid-Cap (3-5)	1,621.096	6,896.389	1.14%
Low-Cap (6-8)	422.999	1,620.860	1.88%
Micro-Cap (9-10)	1.028	422.811	3.89%

Q. 101 Are there other reasons to believe that the CAPM may produce cost of equity estimates at this time that are unreasonably low?

A. 101 Yes. There is considerable evidence in the finance literature that the CAPM tends to underestimate the cost of equity for companies whose equity beta is less than 1.0 and to overestimate the cost of equity for companies whose equity beta is greater than 1.0.[4]

Q. 102 Can you briefly summarize the evidence that the CAPM underestimates the required returns for securities or portfolios

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3 2012 Ibbotson® SBBI® Valuation Yearbook.

4 *See*, for example, Fischer Black, Michael C. Jensen, and Myron Scholes, "The Capital Asset Pricing Model: Some Empirical Tests," in *Studies in the Theory of Capital Markets*, M. Jensen, ed. New York: Praeger, 1972; Eugene Fama and James MacBeth, "Risk, Return, and Equilibrium: Empirical Tests," *Journal of Political Economy* 81 (1973), pp. 607-36; Robert Litzenberger and Krishna Ramaswamy, "The Effect of Personal Taxes and Dividends on Capital Asset Prices: Theory and Empirical Evidence," *Journal of Financial Economics* 7 (1979), pp. 163-95.; Rolf Banz, "The Relationship between Return and Market Value of Common Stocks," *Journal of Financial Economics* (March 1981), pp. 3-18; and Eugene Fama and Kenneth French, "The Cross-Section of Expected Returns," *Journal of Finance* (June 1992), pp. 427-465.

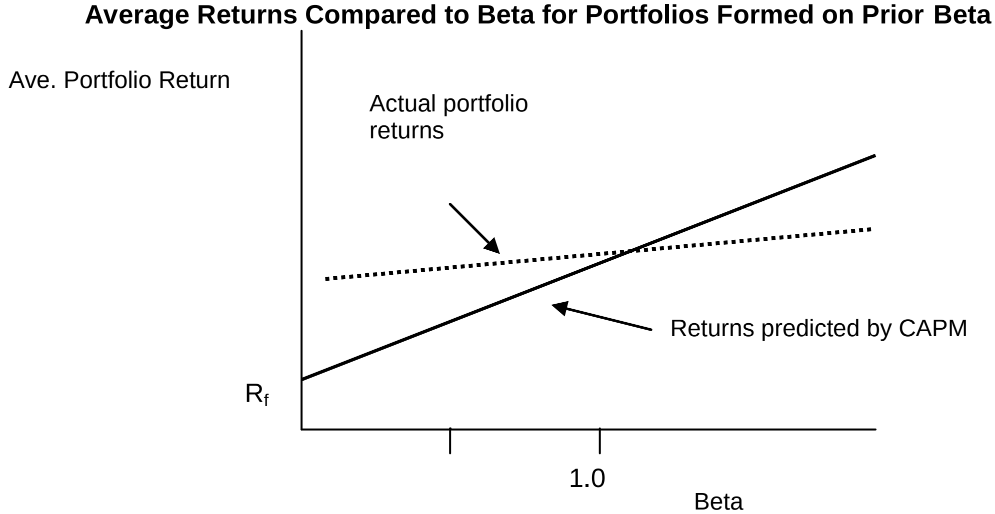
with betas less than 1.0 and overestimates required returns for securities or portfolios with betas greater than 1.0?

A. 102 Yes. The CAPM conjectures that security returns increase with increases in security betas in line with the equation

$$ER_i = R_f + \beta_i \left[ER_m - R_f\right],$$

where ER_i is the expected return on security or portfolio *i*, R_f is the risk-free rate, $ER_m - R_f$ is the expected risk premium on the market portfolio, and β_i is a measure of the risk of investing in security or portfolio *i*. If the CAPM correctly predicts the relationship between risk and return in the marketplace, then the realized returns on portfolios of securities and the corresponding portfolio betas should lie on the solid straight line with intercept R_f and slope $[R_m - R_f]$ shown below.

Figure 1
Average Returns Compared to Beta for Portfolios Formed on Prior Beta



Financial scholars have found that the relationship between realized returns and betas is inconsistent with the relationship posited by the

CAPM. As described in Fama and French (1992) and Fama and French (2004), the actual relationship between portfolio betas and returns is shown by the dotted line in the figure above. Although financial scholars disagree on the reasons why the return/beta relationship looks more like the dotted line in the figure than the solid line, they generally agree that the dotted line lies above the solid line for portfolios with betas less than 1.0 and below the solid line for portfolios with betas greater than 1.0. Thus, in practice, scholars generally agree that the CAPM underestimates portfolio returns for companies with betas less than 1.0, and overestimates portfolio returns for portfolios with betas greater than 1.0.

Q. 103 What conclusions do you reach from your review of the literature on the CAPM to predict the relationship between risk and return in the marketplace?

A. 103 I conclude that the financial literature strongly supports the proposition that the CAPM underestimates the cost of equity for companies such as public utilities with betas less than 1.0. I also conclude that the results of the CAPM should be given little or no weight in this proceeding because the average beta for my proxy group of water companies is significantly less than 1.0.

IX. FAIR RATE OF RETURN ON EQUITY

Q. 104 Please summarize your findings concerning TAWC's cost of equity.

A. 104 Based on my application of several cost of equity methods to my comparable companies, I conclude that my comparable companies' cost of equity is in the range 10.7 percent to 11.3 percent.

TABLE 4
COST OF EQUITY MODEL RESULTS

METHOD	MODEL RESULT
DCF—Water	11.2%
DCF—LDC	10.7%
Ex Ante Risk Premium	11.3%
Ex Post Risk Premium	10.7%
Range of Results	10.7% - 11.3%

Q. 105 What is your recommendation as to a fair rate of return on common equity for TAWC?

A. 105 I recommend that TAWC be allowed a fair rate of return on common equity in the range 10.7 percent to 11.3 percent.

Q. 106 What capital structure is TAWC proposing in this proceeding?

A. 106 TAWC is proposing a capital structure containing 3.65 percent short-term debt, 51.35 percent long-term debt, and 45.00 percent common equity (see testimony of Company witness VerDouw, page 13, and Schedule CS-1.1, Page 1 of 4, of <u>Petitioner's Exhibit CS-1-Capital Structure-GMV</u>).

Q. 107 How does TAWC's proposed capital structure compare to the average capital structure of your comparable group of water utilities?

A. 107 The average capital structure of my proxy group of water utilities contains 5.22 percent short-term debt, 48.49 percent long-term debt, 0.05 percent preferred equity, and 46.24 percent common equity (see Exhibit___(JVW-1) Schedule 9). Thus, TAWC's proposed capital structure has slightly more debt and slightly less equity than the average capital structure of my proxy group of water utilities.

Q. 108 Does this conclude your testimony?

A. 108 Yes, it does.

LIST OF SCHEDULES AND APPENDICES

Schedule 1	Summary of Discounted Cash Flow Analysis for Water Companies
Schedule 2	Summary of Discounted Cash Flow Analysis for Natural Gas Companies
Schedule 3	Comparison of the DCF Expected Return on an Investment in Natural Gas Companies to the Interest Rate on Moody's A-Rated Utility Bonds
Schedule 4	Comparative Returns on S&P 500 Stock Index and Moody's A-Rated Bonds 1937—2012
Schedule 5	Comparative Returns on S&P Utility Stock Index and Moody's A-Rated Bonds 1937—2012
Schedule 6	Using the Arithmetic Mean to Estimate the Cost of Equity Capital
Schedule 7	Calculation of Capital Asset Pricing Model Cost of Equity Using the Ibbotson® SBBI® 6.6 Percent Risk Premium
Schedule 8	Calculation of Capital Asset Pricing Model Cost of Equity Using DCF Estimate of the Expected Rate of Return on the Market Portfolio
Schedule 9	Average Book Value Capital Structure of Comparable Water Utilities
Appendix 1	Qualifications of James H. Vander Weide
Appendix 2	Derivation of the Quarterly DCF Model
Appendix 3	Adjusting for Flotation Costs in Determining a Public Utility's Allowed Rate of Return on Equity
Appendix 4	Ex Ante Risk Premium Method
Appendix 5	Ex Post Risk Premium Method

TENNESSEE AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 1
SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS
FOR PROXY WATER COMPANY COMPANIES

LINE NO.	COMPANY	d_0	3-MO. AVE. PRICE	I/B/E/S GROWTH	COST OF EQUITY
1	Amer. States Water	0.280	36.365	5.70%	9.2%
2	Amer. Water Works	0.230	33.464	9.22%	12.5%
3	Aqua America	0.165	22.012	7.52%	10.9%
4	Artesian Res. 'A'	0.193	19.000	4.40%	9.0%
5	California Water	0.158	18.481	9.93%	14.0%
6	Connecticut Water Service, Inc.	0.238	29.715	4.55%	8.2%
7	Average				10.6%
8	Market-weighted Average				11.8%

Notes:

d_0 = Most recent quarterly dividend.
d_1, d_2, d_3, d_4 = Next four quarterly dividends, calculated by multiplying the last four quarterly dividends per *Value Line* and Yahoo Finance, by the factor (1 + g).
P_0 = Average of the monthly high and low stock prices during the three months ending March 2012 per Thomson Reuters.
FC = Flotation costs expressed as a percent of gross proceeds.
g = Average of I/B/E/S and Value Line forecasts of future earnings growth March 2012.
k = Cost of equity using the quarterly version of the DCF model shown by the formula below:

$$k = \frac{d_1(1+k)^{.75} + d_2(1+k)^{.50} + d_3(1+k)^{.25} + d_4}{P_0(1-FC)} + g$$

TENNESSEE AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 2
SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS
FOR NATURAL GAS DISTRIBUTION COMPANIES

LINE NO.	COMPANY	d_0	P_0	GROWTH	COST OF EQUITY
1	AGL Resources	0.460	40.587	3.27%	8.3%
2	Atmos Energy	0.345	31.915	3.53%	8.4%
3	NiSource Inc.	0.230	23.568	8.37%	13.0%
4	Northwest Nat. Gas	0.445	46.930	3.25%	7.4%
5	ONEOK	0.610	83.822	9.99%	13.2%
5	Piedmont Natural Gas	0.300	32.820	4.55%	8.6%
6	Questar Corp.	0.163	19.593	4.95%	8.6%
7	South Jersey Inds.	0.403	53.625	8.50%	11.9%
8	WGL Holdings Inc.	0.388	42.242	4.50%	8.7%
9	Market-weighted Average				10.7%

Notes:

d_0	=	Most recent quarterly dividend.
d_1,d_2,d_3,d_4	=	Next four quarterly dividends, calculated by multiplying the last four quarterly dividends per *Value Line* and Yahoo Finance by the factor (1 + g).
P_0	=	Average of the monthly high and low stock prices during the three months ending March 2012 from Thomson Reuters.
FC	=	Flotation costs expressed as a percent of gross proceeds.
g	=	I/B/E/S forecast of future earnings growth March 2012.
k	=	Cost of equity using the quarterly version of the DCF model shown by the formula below:

$$k = \frac{d_1(1+k)^{.75} + d_2(1+k)^{.50} + d_3(1+k)^{.25} + d_4}{P_0(1-FC)} + g$$

TENNESSEE AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 3
COMPARISON OF DCF EXPECTED RETURN
ON AN EQUITY INVESTMENT IN NATURAL GAS DISTRIBUTION COMPANIES
TO THE INTEREST RATE ON A-RATED UTILITY BONDS

LINE NO.	DATE	DCF	BOND YIELD	RISK PREMIUM
1	Jun-98	0.1154	0.0703	0.0451
2	Jul-98	0.1186	0.0703	0.0483
3	Aug-98	0.1234	0.0700	0.0534
4	Sep-98	0.1273	0.0693	0.0580
5	Oct-98	0.1260	0.0696	0.0564
6	Nov-98	0.1211	0.0703	0.0508
7	Dec-98	0.1185	0.0691	0.0494
8	Jan-99	0.1195	0.0697	0.0498
9	Feb-99	0.1243	0.0709	0.0534
10	Mar-99	0.1257	0.0726	0.0531
11	Apr-99	0.1260	0.0722	0.0538
12	May-99	0.1221	0.0747	0.0474
13	Jun-99	0.1208	0.0774	0.0434
14	Jul-99	0.1222	0.0771	0.0451
15	Aug-99	0.1220	0.0791	0.0429
16	Sep-99	0.1226	0.0793	0.0433
17	Oct-99	0.1233	0.0806	0.0427
18	Nov-99	0.1240	0.0794	0.0446
19	Dec-99	0.1280	0.0814	0.0466
20	Jan-00	0.1301	0.0835	0.0466
21	Feb-00	0.1344	0.0825	0.0519
22	Mar-00	0.1344	0.0828	0.0516
23	Apr-00	0.1316	0.0829	0.0487
24	May-00	0.1292	0.0870	0.0422
25	Jun-00	0.1295	0.0836	0.0459
26	Jul-00	0.1317	0.0825	0.0492
27	Aug-00	0.1290	0.0813	0.0477
28	Sep-00	0.1257	0.0823	0.0434
29	Oct-00	0.1260	0.0814	0.0446
30	Nov-00	0.1251	0.0811	0.0440
31	Dec-00	0.1239	0.0784	0.0455
32	Jan-01	0.1261	0.0780	0.0481
33	Feb-01	0.1261	0.0774	0.0487
34	Mar-01	0.1275	0.0768	0.0507

LINE NO.	DATE	DCF	BOND YIELD	RISK PREMIUM
35	Apr-01	0.1227	0.0794	0.0433
36	May-01	0.1302	0.0799	0.0503
37	Jun-01	0.1304	0.0785	0.0519
38	Jul-01	0.1338	0.0778	0.0560
39	Aug-01	0.1327	0.0759	0.0568
40	Sep-01	0.1268	0.0775	0.0493
41	Oct-01	0.1268	0.0763	0.0505
42	Nov-01	0.1268	0.0757	0.0511
43	Dec-01	0.1254	0.0783	0.0471
44	Jan-02	0.1236	0.0766	0.0470
45	Feb-02	0.1241	0.0754	0.0487
46	Mar-02	0.1189	0.0776	0.0413
47	Apr-02	0.1159	0.0757	0.0402
48	May-02	0.1162	0.0752	0.0410
49	Jun-02	0.1170	0.0741	0.0429
50	Jul-02	0.1242	0.0731	0.0511
51	Aug-02	0.1234	0.0717	0.0517
52	Sep-02	0.1260	0.0708	0.0552
53	Oct-02	0.1250	0.0723	0.0527
54	Nov-02	0.1221	0.0714	0.0507
55	Dec-02	0.1216	0.0707	0.0509
56	Jan-03	0.1219	0.0706	0.0513
57	Feb-03	0.1232	0.0693	0.0539
58	Mar-03	0.1195	0.0679	0.0516
59	Apr-03	0.1162	0.0664	0.0498
60	May-03	0.1126	0.0636	0.0490
61	Jun-03	0.1114	0.0621	0.0493
62	Jul-03	0.1127	0.0657	0.0470
63	Aug-03	0.1139	0.0678	0.0461
64	Sep-03	0.1127	0.0656	0.0471
65	Oct-03	0.1123	0.0643	0.0480
66	Nov-03	0.1089	0.0637	0.0452
67	Dec-03	0.1071	0.0627	0.0444
68	Jan-04	0.1059	0.0615	0.0444
69	Feb-04	0.1039	0.0615	0.0424
70	Mar-04	0.1037	0.0597	0.0440
71	Apr-04	0.1041	0.0635	0.0406
72	May-04	0.1045	0.0662	0.0383
73	Jun-04	0.1036	0.0646	0.0390
74	Jul-04	0.1011	0.0627	0.0384
75	Aug-04	0.1008	0.0614	0.0394
76	Sep-04	0.0976	0.0598	0.0378
77	Oct-04	0.0974	0.0594	0.0380
78	Nov-04	0.0962	0.0597	0.0365
79	Dec-04	0.0970	0.0592	0.0378
80	Jan-05	0.0990	0.0578	0.0412
81	Feb-05	0.0979	0.0561	0.0418
82	Mar-05	0.0979	0.0583	0.0396
83	Apr-05	0.0988	0.0564	0.0424

LINE NO.	DATE	DCF	BOND YIELD	RISK PREMIUM
84	May-05	0.0981	0.0553	0.0427
85	Jun-05	0.0976	0.0540	0.0436
86	Jul-05	0.0966	0.0551	0.0415
87	Aug-05	0.0969	0.0550	0.0419
88	Sep-05	0.0980	0.0552	0.0428
89	Oct-05	0.0990	0.0579	0.0411
90	Nov-05	0.1049	0.0588	0.0461
91	Dec-05	0.1045	0.0580	0.0465
92	Jan-06	0.0982	0.0575	0.0407
93	Feb-06	0.1124	0.0582	0.0542
94	Mar-06	0.1127	0.0598	0.0529
95	Apr-06	0.1100	0.0629	0.0471
96	May-06	0.1056	0.0642	0.0414
97	Jun-06	0.1049	0.0640	0.0409
98	Jul-06	0.1087	0.0637	0.0450
99	Aug-06	0.1041	0.0620	0.0421
100	Sep-06	0.1053	0.0600	0.0453
101	Oct-06	0.1030	0.0598	0.0432
102	Nov-06	0.1033	0.0580	0.0453
103	Dec-06	0.1035	0.0581	0.0454
104	Jan-07	0.1013	0.0596	0.0417
105	Feb-07	0.1018	0.0590	0.0428
106	Mar-07	0.1018	0.0585	0.0433
107	Apr-07	0.1007	0.0597	0.0410
108	May-07	0.0967	0.0599	0.0368
109	Jun-07	0.0970	0.0630	0.0340
110	Jul-07	0.1006	0.0625	0.0381
111	Aug-07	0.1021	0.0624	0.0397
112	Sep-07	0.1014	0.0618	0.0396
113	Oct-07	0.1080	0.0611	0.0469
114	Nov-07	0.1083	0.0597	0.0486
115	Dec-07	0.1084	0.0616	0.0468
116	Jan-08	0.1113	0.0602	0.0511
117	Feb-08	0.1139	0.0621	0.0518
118	Mar-08	0.1147	0.0621	0.0526
119	Apr-08	0.1167	0.0629	0.0538
120	May-08	0.1069	0.0627	0.0442
121	Jun-08	0.1062	0.0638	0.0424
122	Jul-08	0.1086	0.0640	0.0446
123	Aug-08	0.1123	0.0637	0.0486
124	Sep-08	0.1130	0.0649	0.0481
125	Oct-08	0.1213	0.0756	0.0457
126	Nov-08	0.1221	0.0760	0.0461
127	Dec-08	0.1162	0.0654	0.0508
128	Jan-09	0.1131	0.0639	0.0492
129	Feb-09	0.1155	0.0630	0.0524
130	Mar-09	0.1198	0.0642	0.0556
131	Apr-09	0.1146	0.0648	0.0498
132	May-09	0.1225	0.0649	0.0576
133	Jun-09	0.1208	0.0620	0.0588

LINE NO.	DATE	DCF	BOND YIELD	RISK PREMIUM
134	Jul-09	0.1145	0.0597	0.0548
135	Aug-09	0.1109	0.0571	0.0538
136	Sep-09	0.1109	0.0553	0.0556
137	Oct-09	0.1146	0.0555	0.0592
138	Nov-09	0.1148	0.0564	0.0584
139	Dec-09	0.1123	0.0579	0.0544
140	Jan-10	0.1198	0.0577	0.0621
141	Feb-10	0.1167	0.0587	0.0580
142	Mar-10	0.1074	0.0584	0.0490
143	Apr-10	0.0934	0.0582	0.0352
144	May-10	0.0970	0.0552	0.0418
145	Jun-10	0.0953	0.0546	0.0407
146	Jul-10	0.1050	0.0526	0.0524
147	Aug-10	0.1038	0.0501	0.0537
148	Sep-10	0.1034	0.0501	0.0533
149	Oct-10	0.1050	0.0510	0.0540
150	Nov-10	0.1041	0.0536	0.0505
151	Dec-10	0.1029	0.0557	0.0472
152	Jan-11	0.1019	0.0557	0.0462
153	Feb-11	0.1004	0.0568	0.0436
154	Mar-11	0.1014	0.0556	0.0458
155	Apr-11	0.1031	0.0555	0.0476
156	May-11	0.1018	0.0532	0.0486
157	Jun-11	0.1020	0.0526	0.0494
158	Jul-11	0.1035	0.0527	0.0508
159	Aug-11	0.1179	0.0469	0.0710
160	Sep-11	0.1155	0.0448	0.0707
161	Oct-11	0.1150	0.0452	0.0698
162	Nov-11	0.1120	0.0452	0.0668
163	Dec-11	0.1092	0.0452	0.0640
164	Jan-12	0.1078	0.0452	0.0626
165	Feb-12	0.1081	0.0452	0.0629
166	Mar-12	0.1081	0.0452	0.0629

Notes: A-rated utility bond yield information from the Mergent Bond Record. DCF results are calculated using a quarterly DCF model as follows:

D_0 = Latest quarterly dividend per *Value Line* and Yahoo Finance.
P_0 = Average of the monthly high and low stock prices for each month from Thomson Reuters.
FC = Flotation costs expressed as a percent of gross proceeds.
g = I/B/E/S forecast of future earnings growth for each month.
k = Cost of equity using the quarterly version of the DCF model shown by the formula below:

$$k = \left[\frac{d_0 (1+g)^{\frac{1}{4}}}{P_0} \right]^4 - 1$$

TENNESSEE AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 4
COMPARATIVE RETURNS ON S&P 500 STOCK INDEX
AND MOODY'S A-RATED BONDS 1937 – 2012

LINE NO.	YEAR	S&P 500 STOCK PRICE	STOCK DIVIDEND YIELD	STOCK RETURN	A-RATED BOND PRICE	BOND RETURN	RISK PREMIUM
1	2012	1,300.58	0.0214		$94.36		
2	2011	1,282.62	0.0185	3.25%	$77.36	27.14%	-23.89%
3	2010	1,123.58	0.0203	16.18%	$75.02	8.44%	7.74%
4	2009	865.58	0.0310	32.91%	$68.43	15.48%	17.43%
5	2008	1,378.76	0.0206	-35.16%	$72.25	0.24%	-35.40%
6	2007	1,424.16	0.0181	-1.38%	$72.91	4.59%	-5.97%
7	2006	1,278.72	0.0183	13.20%	$75.25	2.20%	11.01%
8	2005	1,181.41	0.0177	10.01%	$74.91	5.80%	4.21%
9	2004	1,132.52	0.0162	5.94%	$70.87	11.34%	-5.40%
10	2003	895.84	0.0180	28.22%	$62.26	20.27%	7.95%
11	2002	1,140.21	0.0138	-20.05%	$57.44	15.35%	-35.40%
12	2001	1,335.63	0.0116	-13.47%	$56.40	8.93%	-22.40%
13	2000	1,425.59	0.0118	-5.13%	$52.60	14.82%	-19.95%
14	1999	1,248.77	0.0130	15.46%	$63.03	-10.20%	25.66%
15	1998	963.35	0.0162	31.25%	$62.43	7.38%	23.87%
16	1997	766.22	0.0195	27.68%	$56.62	17.32%	10.36%
17	1996	614.42	0.0231	27.02%	$60.91	-0.48%	27.49%
18	1995	465.25	0.0287	34.93%	$50.22	29.26%	5.68%
19	1994	472.99	0.0269	1.05%	$60.01	-9.65%	10.71%
20	1993	435.23	0.0288	11.56%	$53.13	20.48%	-8.93%
21	1992	416.08	0.0290	7.50%	$49.56	15.27%	-7.77%
22	1991	325.49	0.0382	31.65%	$44.84	19.44%	12.21%
23	1990	339.97	0.0341	-0.85%	$45.60	7.11%	-7.96%
24	1989	285.41	0.0364	22.76%	$43.06	15.18%	7.58%
25	1988	250.48	0.0366	17.61%	$40.10	17.36%	0.25%
26	1987	264.51	0.0317	-2.13%	$48.92	-9.84%	7.71%
27	1986	208.19	0.0390	30.95%	$39.98	32.36%	-1.41%
28	1985	171.61	0.0451	25.83%	$32.57	35.05%	-9.22%
29	1984	166.39	0.0427	7.41%	$31.49	16.12%	-8.72%
30	1983	144.27	0.0479	20.12%	$29.41	20.65%	-0.53%
31	1982	117.28	0.0595	28.96%	$24.48	36.48%	-7.51%
32	1981	132.97	0.0480	-7.00%	$29.37	-3.01%	-3.99%
33	1980	110.87	0.0541	25.34%	$34.69	-3.81%	29.16%
34	1979	99.71	0.0533	16.52%	$43.91	-11.89%	28.41%
35	1978	90.25	0.0532	15.80%	$49.09	-2.40%	18.20%
36	1977	103.80	0.0399	-9.06%	$50.95	4.20%	-13.27%
37	1976	96.86	0.0380	10.96%	$43.91	25.13%	-14.17%
38	1975	72.56	0.0507	38.56%	$41.76	14.75%	23.81%
39	1974	96.11	0.0364	-20.86%	$52.54	-12.91%	-7.96%

LINE NO.	YEAR	S&P 500 STOCK PRICE	STOCK DIVIDEND YIELD	STOCK RETURN	A-RATED BOND PRICE	BOND RETURN	RISK PREMIUM
40	1973	118.40	0.0269	-16.14%	$58.51	-3.37%	-12.77%
41	1972	103.30	0.0296	17.58%	$56.47	10.69%	6.89%
42	1971	93.49	0.0332	13.81%	$53.93	12.13%	1.69%
43	1970	90.31	0.0356	7.08%	$50.46	14.81%	-7.73%
44	1969	102.00	0.0306	-8.40%	$62.43	-12.76%	4.36%
45	1968	95.04	0.0313	10.45%	$66.97	-0.81%	11.26%
46	1967	84.45	0.0351	16.05%	$78.69	-9.81%	25.86%
47	1966	93.32	0.0302	-6.48%	$86.57	-4.48%	-2.00%
48	1965	86.12	0.0299	11.35%	$91.40	-0.91%	12.26%
49	1964	76.45	0.0305	15.70%	$92.01	3.68%	12.02%
50	1963	65.06	0.0331	20.82%	$93.56	2.61%	18.20%
51	1962	69.07	0.0297	-2.84%	$89.60	8.89%	-11.73%
52	1961	59.72	0.0328	18.94%	$89.74	4.29%	14.64%
53	1960	58.03	0.0327	6.18%	$84.36	11.13%	-4.95%
54	1959	55.62	0.0324	7.57%	$91.55	-3.49%	11.06%
55	1958	41.12	0.0448	39.74%	$101.22	-5.60%	45.35%
56	1957	45.43	0.0431	-5.18%	$100.70	4.49%	-9.67%
57	1956	44.15	0.0424	7.14%	$113.00	-7.35%	14.49%
58	1955	35.60	0.0438	28.40%	$116.77	0.20%	28.20%
59	1954	25.46	0.0569	45.52%	$112.79	7.07%	38.45%
60	1953	26.18	0.0545	2.70%	$114.24	2.24%	0.46%
61	1952	24.19	0.0582	14.05%	$113.41	4.26%	9.79%
62	1951	21.21	0.0634	20.39%	$123.44	-4.89%	25.28%
63	1950	16.88	0.0665	32.30%	$125.08	1.89%	30.41%
64	1949	15.36	0.0620	16.10%	$119.82	7.72%	8.37%
65	1948	14.83	0.0571	9.28%	$118.50	4.49%	4.79%
66	1947	15.21	0.0449	1.99%	$126.02	-2.79%	4.79%
67	1946	18.02	0.0356	-12.03%	$126.74	2.59%	-14.63%
68	1945	13.49	0.0460	38.18%	$119.82	9.11%	29.07%
69	1944	11.85	0.0495	18.79%	$119.82	3.34%	15.45%
70	1943	10.09	0.0554	22.98%	$118.50	4.49%	18.49%
71	1942	8.93	0.0788	20.87%	$117.63	4.14%	16.73%
72	1941	10.55	0.0638	-8.98%	$116.34	4.55%	-13.52%
73	1940	12.30	0.0458	-9.65%	$112.39	7.08%	-16.73%
74	1939	12.50	0.0349	1.89%	$105.75	10.05%	-8.16%
75	1938	11.31	0.0784	18.36%	$99.83	9.94%	8.42%
76	1937	17.59	0.0434	-31.36%	$103.18	0.63%	-31.99%
77	Average			11.0%		6.7%	4.3%

Note: See Appendix 5 for an explanation of how stock and bond returns are derived and the source of the data presented.

TENNESSEE AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 5
COMPARATIVE RETURNS ON S&P UTILITY STOCK INDEX
AND MOODY'S A-RATED BONDS 1937 – 2012

LINE NO.	YEAR	S&P UTILITY STOCK PRICE	STOCK DIVIDEND YIELD	STOCK RETURN	A-RATED BOND PRICE	BOND RETURN	RISK PREMIUM
1	2012				$94.36		
2	2011			19.99%	$77.36	27.14%	-7.15%
3	2010			7.04%	$75.02	8.44%	-1.40%
4	2009			10.71%	$68.43	15.48%	-4.77%
5	2008			-25.90%	$72.25	0.24%	-26.14%
6	2007			16.56%	$72.91	4.59%	11.96%
7	2006			20.76%	$75.25	2.20%	18.56%
8	2005			16.05%	$74.91	5.80%	10.25%
9	2004			22.84%	$70.87	11.34%	11.50%
10	2003			23.48%	$62.26	20.27%	3.21%
11	2002			-14.73%	$57.44	15.35%	-30.08%
11	2001	307.70	0.0287	-17.90%	$56.40	8.93%	-26.83%
12	2000	239.17	0.0413	32.78%	$52.60	14.82%	17.96%
13	1999	253.52	0.0394	-1.72%	$63.03	-10.20%	8.48%
14	1998	228.61	0.0457	15.47%	$62.43	7.38%	8.09%
15	1997	201.14	0.0492	18.58%	$56.62	17.32%	1.26%
16	1996	202.57	0.0454	3.83%	$60.91	-0.48%	4.31%
17	1995	153.87	0.0584	37.49%	$50.22	29.26%	8.23%
18	1994	168.70	0.0496	-3.83%	$60.01	-9.65%	5.82%
19	1993	159.79	0.0537	10.95%	$53.13	20.48%	-9.54%
20	1992	149.70	0.0572	12.46%	$49.56	15.27%	-2.81%
21	1991	138.38	0.0607	14.25%	$44.84	19.44%	-5.19%
22	1990	146.04	0.0558	0.33%	$45.60	7.11%	-6.78%
23	1989	114.37	0.0699	34.68%	$43.06	15.18%	19.51%
24	1988	106.13	0.0704	14.80%	$40.10	17.36%	-2.55%
25	1987	120.09	0.0588	-5.74%	$48.92	-9.84%	4.10%
26	1986	92.06	0.0742	37.87%	$39.98	32.36%	5.51%
27	1985	75.83	0.0860	30.00%	$32.57	35.05%	-5.04%
28	1984	68.50	0.0925	19.95%	$31.49	16.12%	3.83%
29	1983	61.89	0.0948	20.16%	$29.41	20.65%	-0.49%
30	1982	51.81	0.1074	30.20%	$24.48	36.48%	-6.28%
31	1981	52.01	0.0978	9.40%	$29.37	-3.01%	12.41%
32	1980	50.26	0.0953	13.01%	$34.69	-3.81%	16.83%
33	1979	50.33	0.0893	8.79%	$43.91	-11.89%	20.68%
34	1978	52.40	0.0791	3.96%	$49.09	-2.40%	6.36%
35	1977	54.01	0.0714	4.16%	$50.95	4.20%	-0.04%
36	1976	46.99	0.0776	22.70%	$43.91	25.13%	-2.43%
37	1975	38.19	0.0920	32.24%	$41.76	14.75%	17.49%
38	1974	48.60	0.0713	-14.29%	$52.54	-12.91%	-1.38%
39	1973	60.01	0.0556	-13.45%	$58.51	-3.37%	-10.08%
40	1972	60.19	0.0542	5.12%	$56.47	10.69%	-5.57%
41	1971	63.43	0.0504	-0.07%	$53.93	12.13%	-12.19%
42	1970	55.72	0.0561	19.45%	$50.46	14.81%	4.64%

LINE NO.	YEAR	S&P UTILITY STOCK PRICE	STOCK DIVIDEND YIELD	STOCK RETURN	A-RATED BOND PRICE	BOND RETURN	RISK PREMIUM
43	1969	68.65	0.0445	-14.38%	$62.43	-12.76%	-1.62%
44	1968	68.02	0.0435	5.28%	$66.97	-0.81%	6.08%
45	1967	70.63	0.0392	0.22%	$78.69	-9.81%	10.03%
46	1966	74.50	0.0347	-1.72%	$86.57	-4.48%	2.76%
47	1965	75.87	0.0315	1.34%	$91.40	-0.91%	2.25%
48	1964	67.26	0.0331	16.11%	$92.01	3.68%	12.43%
49	1963	63.35	0.0330	9.47%	$93.56	2.61%	6.86%
50	1962	62.69	0.0320	4.25%	$89.60	8.89%	-4.64%
51	1961	52.73	0.0358	22.47%	$89.74	4.29%	18.18%
52	1960	44.50	0.0403	22.52%	$84.36	11.13%	11.39%
53	1959	43.96	0.0377	5.00%	$91.55	-3.49%	8.49%
54	1958	33.30	0.0487	36.88%	$101.22	-5.60%	42.48%
55	1957	32.32	0.0487	7.90%	$100.70	4.49%	3.41%
56	1956	31.55	0.0472	7.16%	$113.00	-7.35%	14.51%
57	1955	29.89	0.0461	10.16%	$116.77	0.20%	9.97%
58	1954	25.51	0.0520	22.37%	$112.79	7.07%	15.30%
59	1953	24.41	0.0511	9.62%	$114.24	2.24%	7.38%
60	1952	22.22	0.0550	15.36%	$113.41	4.26%	11.10%
61	1951	20.01	0.0606	17.10%	$123.44	-4.89%	21.99%
62	1950	20.20	0.0554	4.60%	$125.08	1.89%	2.71%
63	1949	16.54	0.0570	27.83%	$119.82	7.72%	20.10%
64	1948	16.53	0.0535	5.41%	$118.50	4.49%	0.92%
65	1947	19.21	0.0354	-10.41%	$126.02	-2.79%	-7.62%
66	1946	21.34	0.0298	-7.00%	$126.74	2.59%	-9.59%
67	1945	13.91	0.0448	57.89%	$119.82	9.11%	48.79%
68	1944	12.10	0.0569	20.65%	$119.82	3.34%	17.31%
69	1943	9.22	0.0621	37.45%	$118.50	4.49%	32.96%
70	1942	8.54	0.0940	17.36%	$117.63	4.14%	13.22%
71	1941	13.25	0.0717	-28.38%	$116.34	4.55%	-32.92%
72	1940	16.97	0.0540	-16.52%	$112.39	7.08%	-23.60%
73	1939	16.05	0.0553	11.26%	$105.75	10.05%	1.21%
74	1938	14.30	0.0730	19.54%	$99.83	9.94%	9.59%
75	1937	24.34	0.0432	-36.93%	$103.18	0.63%	-37.55%
76	Average			10.6%		6.7%	3.8%

See Appendix 5 for an explanation of how stock and bond returns are derived and the source of the data presented. Standard & Poor’s discontinued its S&P Utilities Index in December 2001 and replaced its utilities stock index with separate indices for electric and natural gas utilities. In this study, the stock returns beginning in 2002 are based on the total returns for the EEI Index of U.S. shareholder-owned electric utilities, as reported by EEI on its website.
http://www.eei.org/whatwedo/DataAnalysis/IndusFinanAnalysis/Pages/QtrlyFinancialUpdates.aspx

TENNESSEE AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 6
USING THE ARITHMETIC MEAN TO ESTIMATE THE COST OF EQUITY CAPITAL

Consider an investment that in a given year generates a return of 30 percent with probability equal to .5 and a return of -10 percent with a probability equal to .5. For each one dollar invested, the possible outcomes of this investment at the end of year one are:

Ending Wealth	Probability
$1.30	0.50
$0.90	0.50

At the end of year two, the possible outcomes are:

Ending Wealth			Probability	Value x Probability
(1.30) (1.30)	=	$1.69	0.25	0.4225
(1.30) (.9)	=	$1.17	0.50	0.5850
(.9) (.9)	=	$0.81	0.25	0.2025
Expected Wealth	=			$1.21

The expected value of this investment at the end of year two is $1.21. In a competitive capital market, the cost of equity is equal to the expected rate of return on an investment. In the above example, the cost of equity is that rate of return which will make the initial investment of one dollar grow to the expected value of $1.21 at the end of two years. Thus, the cost of equity is the solution to the equation:

$$1(1+k)^2 = 1.21 \text{ or}$$

$$k = (1.21/1)^{.5} - 1 = 10\%.$$

The arithmetic mean of this investment is:

$$(30\%)\ (.5) + (-10\%)\ (.5) = 10\%.$$

Thus, the arithmetic mean is equal to the cost of equity capital.

The geometric mean of this investment is:

$$[(1.3)\ (.9)]^{.5} - 1 = .082 = 8.2\%.$$

Thus, the geometric mean is not equal to the cost of equity capital.

The lesson is obvious: for an investment with an uncertain outcome, the arithmetic mean is the best measure of the cost of equity capital.

TENNESSEE AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 7
CALCULATION OF CAPITAL ASSET PRICING MODEL COST OF EQUITY
USING THE IBBOTSON® SBBI® 6.6 PERCENT RISK PREMIUM

LINE NO.	FACTOR	VALUE	DESCRIPTION
1	Risk-free Rate	4.91%	Long-term Treasury bond yield forecast
2	Beta	0.65	Average Beta Comparable Water Companies
3	Risk Premium	6.62%	Long-horizon SBBI risk premium
4	Beta x Risk Premium	4.30%	
5	Flotation	0.20%	
6	CAPM cost of equity	9.4%	

Ibbotson SBBI risk premium from 2012 Ibbotson® SBBI® Stocks, Bonds, Bills, and Inflation® Valuation Yearbook; Value Line beta for comparable companies from Value Line March 2012. Forecast 20-year Treasury bond yield using data from Value Line Selection & Opinion, February 24, 2012, and Global Insight February 2012.

COMPARABLE COMPANY BETAS

LINE NO.	COMPANY	BETA	MARKET CAP $ (MIL)
1	Amer. States Water	0.70	696
2	Amer. Water Works	0.65	6052
3	Aqua America	0.65	3129
4	Artesian Res. 'A'	0.55	149
5	California Water	0.65	767
6	Connecticut Water Service, Inc.	0.75	249
7	Market-weighted Average	0.65	
8	Average	0.66	

Data from Value Line March 2012.

TENNESSEE AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 8
CALCULATION OF CAPITAL ASSET PRICING MODEL COST OF EQUITY
USING DCF ESTIMATE OF THE EXPECTED RATE OF RETURN
ON THE MARKET PORTFOLIO

LINE NO.	FACTOR	VALUE	DESCRIPTION
1	Risk-free Rate	4.91%	Long-term Treasury bond yield forecast
2	Beta	0.65	Average Beta Comparable Water Companies
3	DCF S&P 500	12.85%	DCF Cost of Equity S&P 500 (see following)
4	Risk Premium	7.94%	
5	Beta * Risk Premium	5.16%	
6	Flotation cost	0.20%	
7	Cost of Equity	10.27%	

Value Line beta for comparable companies from Value Line March 2012. Forecast 20-year Treasury bond yield using data from Value Line Selection & Opinion, February 24, 2012, and Global Insight February 2012.

TENNESSEE AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 8 (CONTINUED)
CALCULATION OF CAPITAL ASSET PRICING MODEL COST OF EQUITY
USING DCF ESTIMATE OF THE EXPECTED RATE OF RETURN
ON THE MARKET PORTFOLIO
SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS FOR S&P 500 COMPANIES

COMPANY	P_0	D_0	GROWTH	COST OF EQUITY
AON CLASS A	47.67	0.60	9.42%	10.8%
GENERAL MILLS	39.39	1.22	7.44%	10.8%
MICROSOFT	30.42	0.80	7.96%	10.8%
GAMESTOP 'A'	23.99	0.60	8.10%	10.8%
SEALED AIR	19.60	0.52	7.94%	10.8%
SAFEWAY	21.54	0.58	7.93%	10.9%
CMS ENERGY	21.76	0.96	6.12%	10.9%
VALERO ENERGY	24.51	0.60	8.29%	11.0%
JP MORGAN CHASE & CO.	39.12	1.20	7.63%	11.0%
BEMIS	31.52	1.00	7.56%	11.0%
SPECTRA ENERGY	31.24	1.12	7.13%	11.0%
EXPEDIA	32.35	0.36	9.81%	11.0%
GENERAL DYNAMICS	71.21	2.04	7.92%	11.0%
PEPSICO	64.88	2.06	7.60%	11.1%
THE HERSHEY COMPANY	60.86	1.52	8.35%	11.1%
LINCOLN NAT.	23.57	0.32	9.63%	11.1%
WELLS FARGO & CO	30.84	0.48	9.55%	11.3%
ROCKWELL COLLINS	58.57	0.96	9.48%	11.3%
BAXTER INTL.	56.30	1.34	8.71%	11.3%
COLGATE-PALM.	92.41	2.48	8.40%	11.3%
UNUM GROUP	22.98	0.42	9.33%	11.3%
GAP	21.91	0.50	8.84%	11.3%
ALTERA	39.03	0.32	10.48%	11.4%
METLIFE	36.56	0.74	9.20%	11.4%
VULCAN MATERIALS	43.74	0.04	11.33%	11.4%
MCCORMICK & CO NV.	51.43	1.24	8.80%	11.4%
CLOROX	68.51	2.40	7.73%	11.6%
WELLPOINT	67.58	1.15	9.71%	11.6%
SUNTRUST BANKS	21.79	0.20	10.60%	11.6%
AMGEN	67.34	1.44	9.36%	11.7%
COVIDIEN	51.26	0.90	9.83%	11.8%
GANNETT	14.99	0.80	6.02%	11.8%
MOLEX	26.78	0.80	8.61%	11.9%
PEABODY ENERGY	34.96	0.34	10.89%	12.0%
FMC	95.54	0.72	11.16%	12.0%
WAL MART STORES	60.23	1.59	9.10%	12.0%
DISCOVER FINANCIAL SVS.	29.00	0.40	10.50%	12.0%
WALGREEN	33.94	0.90	9.14%	12.1%

COMPANY	P_0	D_0	GROWTH	COST OF EQUITY
BB&T	28.53	0.64	9.59%	12.1%
SOUTHWEST AIRLINES	8.98	0.02	11.92%	12.2%
PROCTER & GAMBLE	65.70	2.10	8.67%	12.2%
ABBOTT LABORATORIES	56.56	2.04	8.27%	12.2%
UNITEDHEALTH GP.	53.95	0.65	10.90%	12.2%
ASSURANT	41.18	0.72	10.33%	12.3%
ANALOG DEVICES	38.90	1.20	8.88%	12.3%
HJ HEINZ	53.09	1.92	8.32%	12.3%
EQUIFAX	41.09	0.72	10.37%	12.3%
QUEST DIAGNOSTICS	58.38	0.68	11.02%	12.3%
AMERICAN EXPRESS	52.32	0.80	10.62%	12.3%
ALLSTATE	30.32	0.88	9.13%	12.3%
PERKINELMER	25.00	0.28	11.12%	12.4%
XL GROUP	20.42	0.44	10.00%	12.4%
RAYTHEON 'B'	50.15	2.00	8.16%	12.5%
INTERNATIONAL BUS.MCHS.	194.41	3.00	10.82%	12.5%
STRYKER	53.76	0.85	10.79%	12.6%
ST.JUDE MEDICAL	40.85	0.92	10.07%	12.6%
AETNA	45.42	0.70	10.88%	12.6%
AMPHENOL 'A'	54.41	0.42	11.75%	12.6%
ORACLE	28.60	0.24	11.69%	12.6%
NISOURCE	23.57	0.92	8.37%	12.7%
KRAFT FOODS	38.17	1.16	9.33%	12.7%
CF INDUSTRIES HDG.	176.95	1.60	11.68%	12.7%
TOTAL SYSTEM SERVICES	21.65	0.40	10.65%	12.7%
KROGER	24.02	0.46	10.61%	12.7%
KLA TENCOR	50.19	1.40	9.67%	12.8%
STAPLES	15.43	0.44	9.64%	12.8%
NUCOR	43.33	1.46	9.12%	12.8%
NOBLE	36.87	0.57	11.14%	12.9%
MARATHON PETROLEUM	40.39	1.00	10.12%	12.9%
CVS CAREMARK	43.55	0.65	11.29%	13.0%
MONSANTO	78.95	1.20	11.26%	13.0%
STATE STREET	42.04	0.96	10.48%	13.0%
LINEAR TECH.	32.87	1.00	9.67%	13.0%
E I DU PONT DE NEMOURS	50.51	1.64	9.45%	13.0%
MEAD JOHNSON NUTRITION	76.87	1.20	11.30%	13.0%
INGERSOLL-RAND	37.21	0.64	11.15%	13.1%
M&T BK.	81.41	2.80	9.28%	13.1%
3M	86.78	2.36	10.07%	13.1%
MCDONALDS	99.17	2.80	9.97%	13.1%
PATTERSON COMPANIES	31.74	0.56	11.16%	13.1%
ACCENTURE	58.45	1.35	10.60%	13.2%
ONEOK	83.82	2.44	9.99%	13.2%
AUTOMATIC DATA PROC.	54.95	1.58	10.03%	13.2%
DEERE	83.69	1.84	10.82%	13.3%

COMPANY	P_0	D_0	GROWTH	COST OF EQUITY
THERMO FISHER SCIENTIFIC	53.93	0.52	12.20%	13.3%
AFLAC	46.83	1.32	10.16%	13.3%
DOW CHEMICAL	33.26	1.00	9.97%	13.3%
ESTEE LAUDER COS.'A'	58.30	0.52	12.40%	13.4%
MCGRAW-HILL	46.45	1.02	10.97%	13.4%
OMNICOM GP.	47.68	1.20	10.66%	13.5%
SCRIPPS NETWORKS INTACT. 'A'	44.94	0.48	12.32%	13.5%
TE CONNECTIVITY	34.97	0.72	11.23%	13.5%
PRAXAIR	108.70	2.20	11.35%	13.6%
AIR PRDS.& CHEMS.	89.90	2.56	10.46%	13.6%
TJX COS.	35.54	0.46	12.20%	13.7%
TARGET	53.69	1.20	11.18%	13.7%
ALLERGAN	89.20	0.20	13.46%	13.7%
BEAM	54.09	0.82	12.02%	13.7%
US BANCORP	29.19	0.78	10.74%	13.7%
WESTERN UNION	18.36	0.40	11.29%	13.7%
NORDSTROM	51.75	1.08	11.49%	13.8%
WYNN RESORTS	118.31	2.00	11.98%	13.9%
RYDER SYSTEM	54.58	1.16	11.50%	13.9%
BOSTON PROPERTIES	102.98	2.20	11.51%	13.9%
CARNIVAL	31.34	1.00	10.36%	13.9%
ZIONS BANCORP.	18.82	0.04	13.70%	13.9%
COSTCO WHOLESALE	85.22	0.96	12.68%	14.0%
BANK OF NEW YORK MELLON	21.82	0.52	11.28%	14.0%
PRINCIPAL FINL.GP.	27.07	0.72	11.07%	14.1%
FEDEX	91.31	0.52	13.41%	14.1%
WALT DISNEY	40.89	0.60	12.42%	14.1%
CARDINAL HEALTH	42.33	0.86	11.86%	14.1%
OCCIDENTAL PTL.	99.99	2.16	11.72%	14.2%
AT&T	30.34	1.76	7.78%	14.2%
CINTAS	37.98	0.54	12.64%	14.3%
SARA LEE	19.98	0.46	11.68%	14.3%
EXPEDITOR INTL.OF WASH.	43.93	0.50	13.00%	14.3%
ROSS STORES	52.87	0.56	13.13%	14.3%
LEGG MASON	26.91	0.32	13.03%	14.4%
PAYCHEX	31.49	1.28	9.93%	14.5%
NIKE 'B'	105.22	1.44	13.03%	14.6%
ILLINOIS TOOL WORKS	53.95	1.44	11.62%	14.6%
AMERISOURCEBERGEN	38.29	0.52	13.10%	14.6%
ROCKWELL AUTOMATION	79.75	1.70	12.25%	14.7%
CME GROUP	264.02	8.92	10.88%	14.7%
UNITED TECHNOLOGIES	80.86	1.92	12.00%	14.7%
PERRIGO	99.74	0.32	14.39%	14.8%
CHARLES SCHWAB	13.16	0.24	12.72%	14.8%
WW GRAINGER	203.22	2.64	13.32%	14.8%
NYSE EURONEXT	28.49	1.20	10.18%	14.9%

COMPANY	P_0	D_0	GROWTH	COST OF EQUITY
MACY'S	36.30	0.80	12.40%	14.9%
PREC.CASTPARTS	170.16	0.12	14.83%	14.9%
YUM! BRANDS	64.85	1.14	12.93%	14.9%
CONSOL EN.	35.23	0.50	13.40%	15.0%
V F	140.08	2.88	12.69%	15.0%
CA	25.65	1.00	10.67%	15.0%
TIME WARNER	37.34	1.04	11.91%	15.1%
INTL.GAME TECH.	16.03	0.24	13.38%	15.1%
MARSH & MCLENNAN	31.91	0.88	11.98%	15.1%
AGILENT TECHS.	42.62	0.40	14.07%	15.1%
PPG INDUSTRIES	90.60	2.28	12.31%	15.2%
INTEL	26.65	0.84	11.61%	15.2%
CHESAPEAKE ENERGY	23.30	0.35	13.60%	15.3%
TYCO INTERNATIONAL	51.22	1.00	13.10%	15.3%
INVESCO	23.64	0.49	13.01%	15.4%
EMERSON ELECTRIC	50.83	1.60	11.90%	15.5%
LIMITED BRANDS	44.12	1.00	12.91%	15.5%
MURPHY OIL	60.72	1.10	13.45%	15.5%
EATON	49.64	1.52	12.08%	15.6%
RALPH LAUREN CL.A	162.14	0.80	15.06%	15.6%
Market-weighted Average				12.8%

Notes: In applying the DCF model to the S&P 500, I included in the DCF analysis only those companies in the S&P 500 group which pay a dividend, have a positive growth rate, and have at least three analysts' long-term growth estimates. To be conservative, I also eliminated those 25% of companies with the highest and lowest DCF results.

D_0 = Current dividend per Thomson Reuters.
P_0 = Average of the monthly high and low stock prices during the three months ending March 2012 per Thomson Reuters.
g = I/B/E/S forecast of future earnings growth March 2012.
k = Cost of equity using the quarterly version of the DCF model shown below:

$$k = \left[\frac{d_0 (1+g)^{\frac{1}{4}}}{P_0} \right]^4 - 1$$

TENNESSEE AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 9
AVERAGE BOOK VALUE CAPITAL STRUCTURE
OF COMPARABLE WATER UTILITIES

COMPANY	SHORT-TERM DEBT	LONG-TERM DEBT	PREFERRED EQUITY	COMMON EQUITY	TOTAL BOOK CAPITAL WITH SHORT-TERM DEBT	% SHORT-TERM DEBT	% LONG-TERM DEBT	% PREFERRED	% COMMON EQUITY
Amer. States Water	2.3	340.4	0.0	408.7	751.4	0.30%	45.30%	0.00%	54.39%
Amer. Water Works	543.9	5,340.0	4.6	4,235.8	10,124.3	5.37%	52.74%	0.04%	41.84%
Aqua America	188.2	1,395.5	0.0	1,251.3	2,835.0	6.64%	49.22%	0.00%	44.14%
Artesian Res. 'A'	13.5	106.5	0.0	113.0	233.0	5.78%	45.73%	0.00%	48.50%
California Water	53.7	481.6	0.0	449.8	985.1	5.45%	48.89%	0.00%	45.66%
Connecticut Water Service, Inc.	21.4	135.3	0.8	118.2	275.6	7.76%	49.08%	0.28%	42.89%
Average						5.22%	48.49%	0.05%	46.24%

APPENDIX 1
QUALIFICATIONS OF JAMES H. VANDER WEIDE, PH.D.

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James H. Vander Weide is Research Professor of Finance and Economics at Duke University, the Fuqua School of Business. Dr. Vander Weide is also founder and President of Financial Strategy Associates, a consulting firm that provides strategic, financial, and economic consulting services to corporate clients, including cost of capital and valuation studies.

Educational Background and Prior Academic Experience

Dr. Vander Weide holds a Ph.D. in Finance from Northwestern University and a Bachelor of Arts in Economics from Cornell University. He joined the faculty at Duke University and was named Assistant Professor, Associate Professor, Professor, and then Research Professor of Finance and Economics.

Since joining the faculty at Duke, Dr. Vander Weide has taught courses in corporate finance, investment management, and management of financial institutions. He has also taught courses in statistics, economics, and operations research, and a Ph.D. seminar on the theory of public utility pricing. In addition, Dr. Vander Weide has been active in executive education at Duke and Duke Corporate Education, leading executive development seminars on topics including financial analysis, cost of capital, creating shareholder value, mergers and acquisitions, real options, capital budgeting, cash management, measuring corporate performance, valuation, short-run financial planning, depreciation policies, financial strategy, and competitive strategy. Dr. Vander Weide has designed and served as Program Director for several executive education programs, including the Advanced Management Program, Competitive Strategies in Telecommunications, and the Duke Program for Manager Development for managers from the former Soviet Union.

Publications

Dr. Vander Weide has written a book entitled *Managing Corporate Liquidity: An Introduction to Working Capital Management* published by John Wiley and Sons, Inc. He has also written a chapter titled, “Financial Management in the Short Run” for *The Handbook of Modern Finance*; a chapter titled “Principles for Lifetime Portfolio Selection: Lessons from Portfolio Theory” for *The Handbook of Portfolio Construction: Contemporary Applications of*

Markowitz Techniques; and written research papers on such topics as portfolio management, capital budgeting, investments, the effect of regulation on the performance of public utilities, and cash management. His articles have been published in *American Economic Review, Financial Management, International Journal of Industrial Organization, Journal of Finance, Journal of Financial and Quantitative Analysis, Journal of Bank Research, Journal of Portfolio Management, Journal of Accounting Research, Journal of Cash Management, Management Science, Atlantic Economic Journal, Journal of Economics and Business,* and *Computers and Operations Research*.

Professional Consulting Experience

Dr. Vander Weide has provided financial and economic consulting services to firms in the telecommunications, electric, gas, insurance, and water industries for more than twenty-five years. He has testified on the cost of capital, competition, risk, incentive regulation, forward-looking economic cost, economic pricing guidelines, depreciation, accounting, valuation, and other financial and economic issues in more than 400 cases before the United States Congress, the Canadian Radio-Television and Telecommunications Commission, the Federal Communications Commission, the National Energy Board (Canada), the National Telecommunications and Information Administration, the Federal Energy Regulatory Commission, the public service commissions of forty-three states, the District of Columbia, four Canadian provinces, the insurance commissions of five states, the Iowa State Board of Tax Review, the National Association of Securities Dealers, and the North Carolina Property Tax Commission. In addition, he has testified as an expert witness in telecommunications-related proceedings before the United States District Court for the District of New Hampshire, United States District Court for the Northern District of California, United States District Court for the Northern District of Illinois, Montana Second Judicial District Court Silver Bow County, the United States Bankruptcy Court for the Southern District of West Virginia, and United States District Court for the Eastern District of Michigan. He also testified as an expert before the United States Tax Court, United States District Court for the Eastern District of North Carolina; United States District Court for the District of Nebraska, and Superior Court of North Carolina. Dr. Vander Weide has testified in thirty states on issues relating to the pricing of unbundled network elements and universal service cost studies and has consulted with Bell Canada, Deutsche Telekom, and Telefónica on similar issues. He has also provided expert testimony on issues related to electric and natural gas restructuring. He has worked for Bell Canada/Nortel on a special task force to study the effects of vertical integration in the Canadian telephone industry and has worked for Bell Canada as an expert witness on the cost of capital. Dr. Vander Weide has provided consulting and expert witness testimony to the following companies:

ELECTRIC, GAS, WATER, OIL COMPANIES	
Alcoa Power Generating, Inc.	Kinder Morgan Energy Partners
Alliant Energy and subsidiaries	Maritimes & Northeast Pipeline
AltaLink, L.P.	MidAmerican Energy and subsidiaries
Ameren	National Fuel Gas
American Water Works	Nevada Power Company
Atmos Energy and subsidiaries	NICOR
BP p.l.c.	North Carolina Natural Gas
Central Illinois Public Service	North Shore Gas
Centurion Pipeline L.P.	Northern Natural Gas Company
Citizens Utilities	NOVA Gas Transmission Ltd.
Consolidated Natural Gas and subsidiaries	PacifiCorp
Dominion Resources and subsidiaries	Peoples Energy and its subsidiaries
Duke Energy and subsidiaries	PG&E
Empire District Electric Company	Progress Energy
EPCOR Distribution & Transmission Inc.	PSE&G
EPCOR Energy Alberta Inc.	Public Service Company of North Carolina
FortisAlberta Inc.	Sempra Energy/San Diego Gas and Electric
Hope Natural Gas	South Carolina Electric and Gas
Interstate Power Company	Southern Company and subsidiaries
Iberdrola Renewables	Tennessee-American Water Company
Iowa Southern	The Peoples Gas, Light and Coke Co.
Iowa-American Water Company	TransCanada
Iowa-Illinois Gas and Electric	Trans Québec & Maritimes Pipeline Inc.
Kentucky Power Company	Union Gas
Kentucky-American Water Company	United Cities Gas Company
Newfoundland Power Inc.	Virginia-American Water Company
	Xcel Energy

TELECOMMUNICATIONS COMPANIES	
ALLTEL and subsidiaries	Phillips County Cooperative Tel. Co.
Ameritech (now AT&T new)	Pine Drive Cooperative Telephone Co.
AT&T (old)	Roseville Telephone Company (SureWest)
Bell Canada/Nortel	SBC Communications (now AT&T new)
BellSouth and subsidiaries	Sherburne Telephone Company
Centel and subsidiaries	Siemens
Cincinnati Bell (Broadwing)	Southern New England Telephone
Cisco Systems	Sprint/United and subsidiaries

TELECOMMUNICATIONS COMPANIES	
Citizens Telephone Company	Telefónica
Concord Telephone Company	Tellabs, Inc.
Contel and subsidiaries	The Stentor Companies
Deutsche Telekom	U S West (Qwest)
GTE and subsidiaries (now Verizon)	Union Telephone Company
Heins Telephone Company	United States Telephone Association
JDS Uniphase	Valor Telecommunications (Windstream)
Lucent Technologies	Verizon (Bell Atlantic) and subsidiaries
Minnesota Independent Equal Access Corp.	Woodbury Telephone Company
NYNEX and subsidiaries (Verizon)	
Pacific Telesis and subsidiaries	

INSURANCE COMPANIES
Allstate
North Carolina Rate Bureau
United Services Automobile Association (USAA)
The Travelers Indemnity Company
Gulf Insurance Company

Other Professional Experience

Dr. Vander Weide conducts in-house seminars and training sessions on topics such as creating shareholder value, financial analysis, competitive strategy, cost of capital, real options, financial strategy, managing growth, mergers and acquisitions, valuation, measuring corporate performance, capital budgeting, cash management, and financial planning. Among the firms for whom he has designed and taught tailored programs and training sessions are ABB Asea Brown Boveri, Accenture, Allstate, Ameritech, AT&T, Bell Atlantic/Verizon, BellSouth, Progress Energy/Carolina Power & Light, Contel, Fisons, GlaxoSmithKline, GTE, Lafarge, MidAmerican Energy, New Century Energies, Norfolk Southern, Pacific Bell Telephone, The Rank Group, Siemens, Southern New England Telephone, TRW, and Wolseley Plc. Dr. Vander Weide has also hosted a nationally prominent conference/workshop on estimating the cost of capital. In 1989, at the request of Mr. Fuqua, Dr. Vander Weide designed the Duke Program for Manager Development for managers from the former Soviet Union, the first in the United States designed exclusively for managers from Russia and the former Soviet republics.

Early in his career, Dr. Vander Weide helped found University Analytics, Inc., which was one of the fastest growing small firms in the country. As an officer at University Analytics, he designed cash management models, databases, and software packages that are still used by most major U.S. banks in consulting with their corporate clients. Having sold his interest in University Analytics, Dr. Vander Weide now concentrates on strategic and financial consulting, academic research, and executive education.

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APPENDIX 2
THE QUARTERLY DCF MODEL

The simple DCF Model assumes that a firm pays dividends only at the end of each year. Since firms in fact pay dividends quarterly and investors appreciate the time value of money, the annual version of the DCF Model generally underestimates the value investors are willing to place on the firm's expected future dividend stream. In this appendix, we review two alternative formulations of the DCF Model that allow for the quarterly payment of dividends.

When dividends are assumed to be paid annually, the DCF Model suggests that the current price of the firm's stock is given by the expression:

$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \ldots + \frac{D_n + P_n}{(1+k)^n} \quad \textbf{(1)}$$

where

P_0	=	current price per share of the firm's stock,
$D_1, D_2,...,D_n$	=	expected annual dividends per share on the firm's stock,
P_n	=	price per share of stock at the time investors expect to sell the stock, and
k	=	return investors expect to earn on alternative investments of the same risk, i.e., the investors' required rate of return.

Unfortunately, expression (1) is rather difficult to analyze, especially for the purpose of estimating k. Thus, most analysts make a number of simplifying assumptions. First, they assume that dividends are expected to grow at the constant rate g into the indefinite future. Second, they assume that the stock price at time n is simply the present value of all dividends expected in periods subsequent to n. Third, they assume that the investors' required rate of return, k, exceeds the expected dividend growth rate g. Under the above simplifying assumptions, a firm's stock price may be written as the following sum:

$$P_0 = \frac{D_0(1+g)}{(1+k)} + \frac{D_0(1+g)^2}{(1+k)^2} + \frac{D_0(1+g)^3}{(1+k)^3} + \ldots , \qquad \textbf{(2)}$$

where the three dots indicate that the sum continues indefinitely.

As we shall demonstrate shortly, this sum may be simplified to:

$$P_0 = \frac{D_0(1+g)}{(k - g)}$$

First, however, we need to review the very useful concept of a geometric progression.

Geometric Progression

Consider the sequence of numbers 3, 6, 12, 24,…, where each number after the first is obtained by multiplying the preceding number by the factor 2. Obviously, this sequence of numbers may also be expressed as the sequence 3, 3 x 2, 3 x 2^2, 3 x 2^3, etc. This sequence is an example of a geometric progression.

Definition: A geometric progression is a sequence in which each term after the first is obtained by multiplying some fixed number, called the common ratio, by the preceding term.

A general notation for geometric progressions is: a, the first term, r, the common ratio, and n, the number of terms. Using this notation, any geometric progression may be represented by the sequence:

$$a, ar, ar^2, ar^3, \ldots, ar^{n-1}.$$

In studying the DCF Model, we will find it useful to have an expression for the sum of n terms of a geometric progression. Call this sum S_n. Then

$$S_n = a + ar + \ldots + ar^{n-1}. \qquad \textbf{(3)}$$

However, this expression can be simplified by multiplying both sides of equation (3) by r and then subtracting the new equation from the old. Thus,

$$rS_n = ar + ar^2 + ar^3 + \ldots + ar^n$$

and

$$S_n - rS_n = a - ar^n \quad ,$$

or

$$(1 - r)\, S_n = a\,(1 - r^n) \quad .$$

Solving for S_n, we obtain:

$$S_n = \frac{a(1 - r^n)}{(1 - r)} \qquad \textbf{(4)}$$

as a simple expression for the sum of n terms of a geometric progression. Furthermore, if $|r| < 1$, then S_n is finite, and as n approaches infinity, S_n approaches a ÷ (1-r). Thus, for a geometric progression with an infinite number of terms and $|r| < 1$, equation (4) becomes:

$$S = \frac{a}{1 - r} \qquad \textbf{(5)}$$

<u>Application to DCF Model</u>

Comparing equation (2) with equation (3), we see that the firm's stock price (under the DCF assumption) is the sum of an infinite geometric progression with the first term

$$a = \frac{D_0(1+g)}{(1+k)}$$

and common factor

$$r = \frac{(1+g)}{(1+k)}$$

Applying equation (5) for the sum of such a geometric progression, we obtain

$$S = a \bullet \frac{1}{(1 - r)} = \frac{D_0(1+g)}{(1+k)} \bullet \frac{1}{1 - \frac{1+g}{1+k}} = \frac{D_0(1+g)}{(1+k)} \bullet \frac{1+k}{k - g} = \frac{D_0(1+g)}{k - g}$$

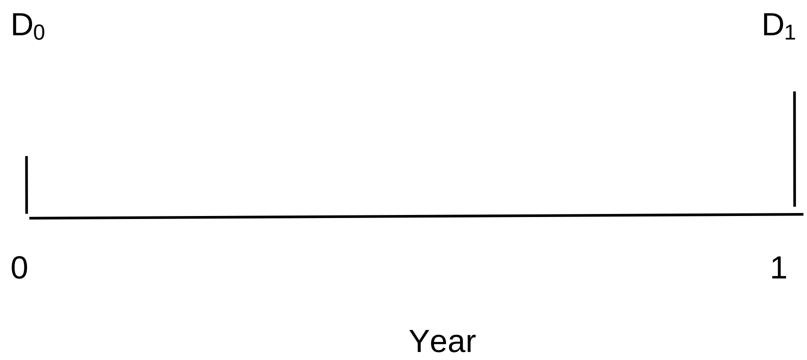
as we suggested earlier.

Quarterly DCF Model

The Annual DCF Model assumes that dividends grow at an annual rate of g% per year (see Figure 1).

Figure 1

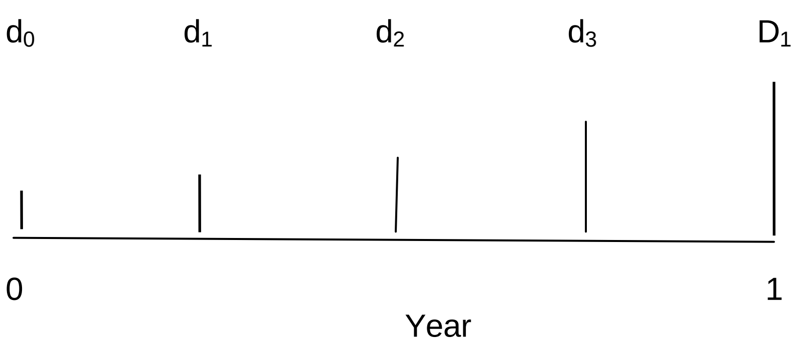
Annual DCF Model



$D_0 = 4d_0$ $\qquad$ $D_1 = D_0(1 + g)$

Figure 2

Quarterly DCF Model (Constant Growth Version)



$d_1 = d_0(1+g)^{.25}$ $\qquad$ $d_2 = d_0(1+g)^{.50}$

$d_3 = d_0(1+g)^{.75}$ $\qquad$ $d_4 = d_0(1+g)$

In the Quarterly DCF Model, it is natural to assume that quarterly dividend payments differ from the preceding quarterly dividend by the factor $(1 + g)^{.25}$, where g is expressed in terms of percent per year and the decimal .25 indicates that the growth has

only occurred for one quarter of the year. (See Figure 2.) Using this assumption, along with the assumption of constant growth and ***k*** > ***g***, we obtain a new expression for the firm's stock price, which takes account of the quarterly payment of dividends. This expression is:

$$P_0 = \frac{d_0(1+g)^{\frac{1}{4}}}{(1+k)^{\frac{1}{4}}} + \frac{d_0(1+g)^{\frac{2}{4}}}{(1+k)^{\frac{2}{4}}} + \frac{d_0(1+g)^{\frac{3}{4}}}{(1+k)^{\frac{3}{4}}} + \dots \qquad \textbf{(6)}$$

where d_0 is the last quarterly dividend payment, rather than the last annual dividend payment. (We use a lower case d to remind the reader that this is not the annual dividend.)

Although equation (6) looks formidable at first glance, it too can be greatly simplified using the formula [equation (4)] for the sum of an infinite geometric progression. As the reader can easily verify, equation (6) can be simplified to:

$$P_0 = \frac{d_0(1+g)^{\frac{1}{4}}}{(1+k)^{\frac{1}{4}} - (1+g)^{\frac{1}{4}}} \qquad \textbf{(7)}$$

Solving equation (7) for *k*, we obtain a DCF formula for estimating the cost of equity under the quarterly dividend assumption:

$$k = \left[\frac{d_0(1+g)^{\frac{1}{4}}}{P_0} + (1+g)^{\frac{1}{4}} \right]^4 - 1 \qquad \textbf{(8)}$$

An Alternative Quarterly DCF Model

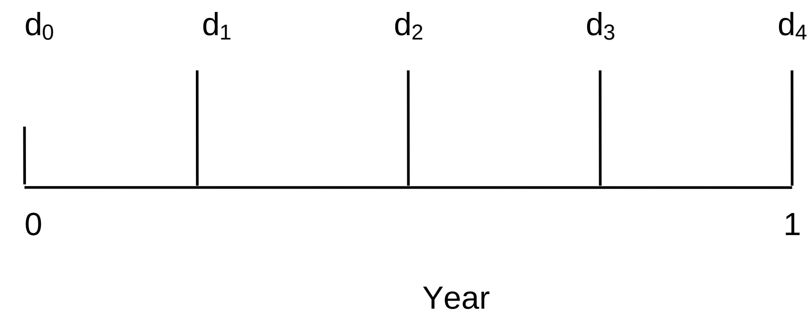
Although the constant growth Quarterly DCF Model [equation (8)] allows for the quarterly timing of dividend payments, it does require the assumption that the firm increases its dividend payments each quarter. Since this assumption is difficult for some analysts to accept, we now discuss a second Quarterly DCF Model that allows for constant quarterly dividend payments within each dividend year.

Assume then that the firm pays dividends quarterly and that each dividend payment is constant for four consecutive quarters. There are four cases to consider, with each case distinguished by varying assumptions about where we are evaluating the firm in relation to the time of its next dividend increase. (See Figure 3.)

Figure 3

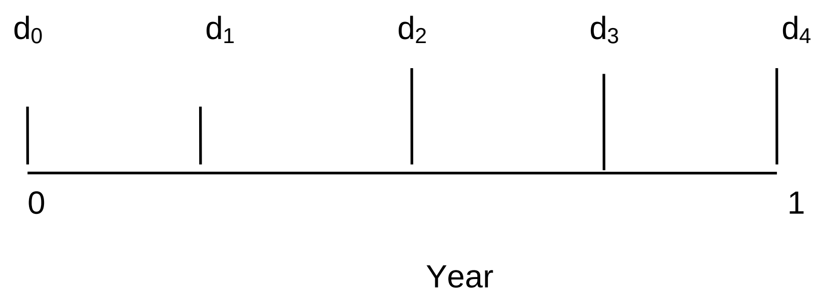
Quarterly DCF Model (Constant Dividend Version)

Case 1



$$d_1 = d_2 = d_3 = d_4 = d_0(1+g)$$

Case 2

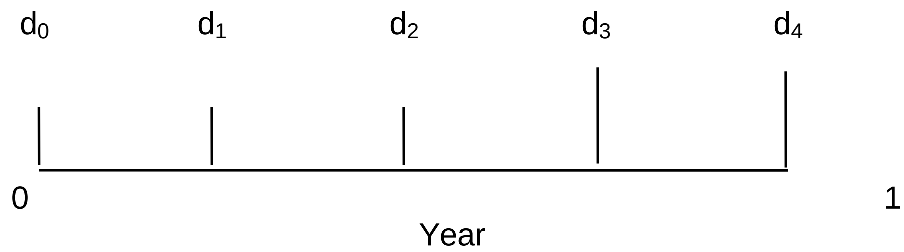


$$d_1 = d_0$$

$$d_2 = d_3 = d_4 = d_0(1+g)$$

<u>Figure 3</u> (continued)

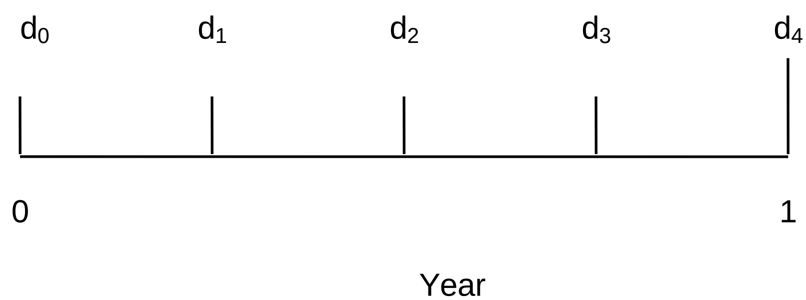
<u>Case 3</u>



$d_1 = d_2 = d_0$

$d_3 = d_4 = d_0(1+g)$

<u>Case 4</u>



$d_1 = d_2 = d_3 = d_0$

$d_4 = d_0(1+g)$

If we assume that the investor invests the quarterly dividend in an alternative investment of the same risk, then the amount accumulated by the end of the year will in all cases be given by

$$D_1^* = d_1\,(1+k)^{3/4} + d_2\,(1+k)^{1/2} + d_3\,(1+k)^{1/4} + d_4$$

where d_1, d_2, d_3 and d_4 are the four quarterly dividends. Under these new assumptions, the firm's stock price may be expressed by an Annual DCF Model of the form (2), with the exception that

$$D_1^* = d_1\,(1 + k)^{3/4} + d_2\,(1 + k)^{1/2} + d_3\,(1 + k)^{1/4} + d_4 \qquad \textbf{(9)}$$

is used in place of $D_0(1+g)$. But, we already know that the Annual DCF Model may be reduced to

$$P_0 = \frac{D_0(1+g)}{k-g}$$

Thus, under the assumptions of the second Quarterly DCF Model, the firm's cost of equity is given by

$$k = \frac{D_1^*}{P_0} + g \quad \textbf{(10)}$$

with D_1^* given by (9).

Although equation (10) looks like the Annual DCF Model, there are at least two very important practical differences. First, since D_1^* is always greater than $D_0(1+g)$, the estimates of the cost of equity are always larger (and more accurate) in the Quarterly Model (10) than in the Annual Model. Second, since D_1^* depends on k through equation (9), the unknown “k” appears on both sides of (10), and an iterative procedure is required to solve for k.

APPENDIX 3
ADJUSTING FOR FLOTATION COSTS IN DETERMINING
A PUBLIC UTILITY'S
ALLOWED RATE OF RETURN ON EQUITY

Introduction

Regulation of public utilities is guided by the principle that utility revenues should be sufficient to allow recovery of all prudently incurred expenses, including the cost of capital. As set forth in the 1944 *Hope Natural Gas* Case [*Federal Power Comm'n v. Hope Natural Gas Co*. 320 U. S. 591 (1944) at 603], the U. S. Supreme Court states:

> From the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock.…By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks.

Since the flotation costs arising from the issuance of debt and equity securities are an integral component of capital costs, this standard requires that the company's revenues be sufficient to fully recover flotation costs.

Despite the widespread agreement that flotation costs should be recovered in the regulatory process, several issues still need to be resolved. These include:

1. How is the term "flotation costs" defined? Does it include only the out-of-pocket costs associated with issuing securities (e. g., legal fees, printing costs, selling and underwriting expenses), or does it also include the reduction in a security's price that frequently accompanies flotation (i. e., market pressure)?
2. What should be the time pattern of cost recovery? Should a company be allowed to recover flotation costs immediately, or should flotation costs be recovered over the life of the issue?
3. For the purposes of regulatory accounting, should flotation costs be included as an expense? As an addition to rate base? Or as an additional element of a firm's allowed rate of return?
4. Do existing regulatory methods for flotation cost recovery allow a firm ***full*** recovery of flotation costs?

In this paper, I review the literature pertaining to the above issues and discuss my own views regarding how this literature applies to the cost of equity for a regulated firm.

Definition of Flotation Cost

The value of a firm is related to the future stream of net cash flows (revenues minus expenses measured on a cash basis) that can be derived from its assets. In the process of acquiring assets, a firm incurs certain expenses which reduce its value. Some of these expenses or costs are directly associated with revenue production in one period (e. g., wages, cost of goods sold), others are more properly associated with revenue production in many periods (e. g., the acquisition cost of plant and equipment). In either case, the word "cost" refers to any item that reduces the value of a firm.

If this concept is applied to the act of issuing new securities to finance asset purchases, many items are properly included in issuance or flotation costs. These include: (1) compensation received by investment bankers for underwriting services, (2) legal fees, (3) accounting fees, (4) engineering fees, (5) trustee's fees, (6) listing fees, (7) printing and engraving expenses, (8) SEC registration fees, (9) Federal Revenue Stamps, (10) state taxes, (11) warrants granted to underwriters as extra compensation, (12) postage expenses, (13) employees' time, (14) market pressure, and (15) the offer discount. The finance literature generally divides these flotation cost items into three categories, namely, underwriting expenses, issuer expenses, and price effects.

Magnitude of Flotation Costs

The finance literature contains several studies of the magnitude of the flotation costs associated with new debt and equity issues. These studies differ primarily with regard to the time period studied, the sample of companies included, and the source of data. The flotation cost studies generally agree, however, that for large issues, underwriting expenses represent approximately one and one-half percent of the proceeds of debt issues and three to five percent of the proceeds of seasoned equity issues. They also agree that issuer expenses represent approximately 0.5 percent of both debt and equity issues, and that the announcement of an equity issue reduces the company's stock price by at least two to three percent of the proceeds from the stock issue. Thus, total flotation costs represent approximately two percent[5] of the proceeds from debt issues, and five and one-half to eight and one-half percent of the proceeds of equity issues.

Lee *et. al.* [14] is an excellent example of the type of flotation cost studies found in the finance literature. The Lee study is a comprehensive recent study of the underwriting and issuer costs associated with debt and equity issues for both utilities and non-utilities. The results of the Lee *et. al.* study are reproduced in Tables 1 and 2. Table 1 demonstrates that the total underwriting and issuer expenses for the 1,092 debt issues in their study averaged 2.24 percent of the proceeds of the issues, while the total underwriting and issuer costs for the 1,593 seasoned equity issues in their study averaged 7.11 percent of the proceeds of the new issue. Table 1 also demonstrates that the total underwriting and issuer costs of seasoned equity offerings, as a percent of proceeds, decline with the size of the issue. For issues above $60 million, total underwriting and issuer costs amount to from three to five percent of the amount of the proceeds.

Table 2 reports the total underwriting and issuer expenses for 135 utility debt issues and 136 seasoned utility equity issues. Total underwriting and issuer expenses for utility bond offerings averaged 1.47 percent of the amount of the proceeds and for seasoned utility equity offerings averaged 4.92 percent of the amount of the proceeds. Again, there are some economies of scale associated with larger equity offerings. Total underwriting and issuer expenses for equity offerings in excess of 40 million dollars generally range from three to four percent of the proceeds.

The results of the Lee study for large equity issues are consistent with results of earlier studies by Bhagat and Frost [4], Mikkelson and Partch [17], and Smith [24]. Bhagat and Frost found that total underwriting and issuer expenses average approximately four and one-half percent of the amount of proceeds from negotiated utility offerings during the period 1973 to 1980, and approximately three and one-half percent of the amount of the proceeds from competitive utility offerings over the

[5] The two percent flotation cost on debt only recognizes the cost of newly-issued debt. When interest rates decline, many companies exercise the call provisions on higher cost debt and reissue debt at lower rates. This process involves reacquisition costs that are not included in the academic studies. If reacquisition costs were included in the academic studies, debt flotation costs could increase significantly.

same period. Mikkelson and Partch found that total underwriting and issuer expenses average five and one-half percent of the proceeds from seasoned equity offerings over the 1972 to 1982 period. Smith found that total underwriting and issuer expenses for larger equity issues generally amount to four to five percent of the proceeds of the new issue.

The finance literature also contains numerous studies of the decline in price associated with sales of large blocks of stock to the public. These articles relate to the price impact of: (1) initial public offerings; (2) the sale of large blocks of stock from one investor to another; and (3) the issuance of seasoned equity issues to the general public. All of these studies generally support the notion that the announcement of the sale of large blocks of stock produces a decline in a company's share price. The decline in share price for initial public offerings is significantly larger than the decline in share price for seasoned equity offerings; and the decline in share price for public utilities is less than the decline in share price for non-public utilities. A comprehensive study of the magnitude of the decline in share price associated specifically with the sale of new equity by public utilities is reported in Pettway [19], who found the market pressure effect for a sample of 368 public utility equity sales to be in the range of two to three percent. This decline in price is a real cost to the utility, because the proceeds to the utility depend on the stock price on the day of issue.

In addition to the price decline associated with the announcement of a new equity issue, the finance literature recognizes that there is also a price decline associated with the actual issuance of equity securities. In particular, underwriters typically sell seasoned new equity securities to investors at a price lower than the closing market price on the day preceding the issue. The Rules of Fair Practice of the National Association of Securities Dealers require that underwriters not sell shares at a price above the offer price. Since the offer price represents a binding constraint to the underwriter, the underwriter tends to set the offer price slightly below the market price on the day of issue to compensate for the risk that the price received by the underwriter may go down, but can not increase. Smith provides evidence that the offer discount tends to be between 0.5 and 0.8 percent of the proceeds of an equity issue. I am not aware of any similar studies for debt issues.

In summary, the finance literature provides strong support for the conclusion that total underwriting and issuer expenses for public utility debt offerings represent approximately two percent of the amount of the proceeds, while total underwriting and issuer expenses for public utility equity offerings represent at least four to five percent of the amount of the proceeds. In addition, the finance literature supports the conclusion that the cost associated with the decline in stock price at the announcement date represents approximately two to three percent as a result of a large public utility equity issue.

TIME PATTERN OF FLOTATION COST RECOVERY

Although flotation costs are incurred only at the time a firm issues new securities, there is no reason why an issuing firm ought to recognize the expense only in the current period. In fact, if assets purchased with the proceeds of a security issue produce revenues over many years, a sound argument can be made in favor of recognizing flotation expenses over a reasonably lengthy period of time. Such recognition is certainly consistent with the generally accepted accounting principle that the time pattern of expenses match the time pattern of revenues, and it is also consistent with the normal treatment of debt flotation expenses in both regulated and unregulated industries.

In the context of a regulated firm, it should be noted that there are many possible time patterns for the recovery of flotation expenses. However, if it is felt that flotation expenses are most

appropriately recovered over a period of years, then it should be recognized that investors must also be compensated for the passage of time. That is to say, the value of an investor's capital will be reduced if the expenses are merely distributed over time, without any allowance for the time value of money.

ACCOUNTING FOR FLOTATION COST IN A REGULATORY SETTING

In a regulatory setting, a firm's revenue requirements are determined by the equation:

Revenue Requirement = Total Expenses + Allowed Rate of Return x Rate Base

Thus, there are three ways in which an issuing firm can account for and recover its flotation expenses: (1) treat flotation expenses as a current expense and recover them immediately; (2) include flotation expenses in rate base and recover them over time; and (3) adjust the allowed rate of return upward and again recover flotation expenses over time. Before considering methods currently being used to recover flotation expenses in a regulatory setting, I shall briefly consider the advantages and disadvantages of these three basic recovery methods.

Expenses. Treating flotation costs as a current expense has several advantages. Because it allows for recovery at the time the expense occurs, it is not necessary to compute amortized balances over time and to debate which interest rate should be applied to these balances. A firm's stockholders are treated fairly, and so are the firm's customers, because they pay neither more nor less than the actual flotation expense. Since flotation costs are relatively small compared to the total revenue requirement, treatment as a current expense does not cause unusual rate hikes in the year of flotation, as would the introduction of a large generating plant in a state that does not allow Construction Work in Progress in rate base.

On the other hand, there are two major disadvantages of treating flotation costs as a current expense. First, since the asset purchased with the acquired funds will likely generate revenues for many years into the future, it seems unfair that current ratepayers should bear the full cost of issuing new securities, when future ratepayers share in the benefits. Second, this method requires an estimate of the underpricing effect on each security issue. Given the difficulties involved in measuring the extent of underpricing, it may be more accurate to estimate the average underpricing allowance for many securities than to estimate the exact figure for one security.

Rate Base. In an article in *Public Utilities Fortnightly*, Bierman and Hass [5] recommend that flotation costs be treated as an intangible asset that is included in a firm's rate base along with the assets acquired with the stock proceeds. This approach has many advantages. For ratepayers, it provides a better match between benefits and expenses: the future ratepayers who benefit from the financing costs contribute the revenues to recover these costs. For investors, if the allowed rate of return is equal to the investors' required rate of return, it is also theoretically fair since they are compensated for the opportunity cost of their investment (including both the time value of money and the investment risk).

Despite the compelling advantages of this method of cost recovery, there are several disadvantages that probably explain why it has not been used in practice. First, a firm will only recover the proper amount for flotation expenses if the rate base is multiplied by the appropriate cost of capital. To the extent that a commission under or over estimates the cost of capital, a firm will under or over recover its flotation expenses. Second, it is may be both legally and psychologically difficult for commissioners to include an intangible asset in a firm's rate base. According to established legal doctrine, assets are to be included in rate base only if they are

"used and useful" in the public service. It is unclear whether intangible assets such as flotation expenses meet this criterion.

Rate of Return. The prevailing practice among state regulators is to treat flotation expenses as an additional element of a firm's cost of capital or allowed rate of return. This method is similar to the second method above (treatment in rate base) in that some part of the initial flotation cost is amortized over time. However, it has a disadvantage not shared by the rate base method. If flotation cost is included in rate base, it is fairly easy to keep track of the flotation cost on each new equity issue and see how it is recovered over time. Using the rate of return method, it is not possible to track the flotation cost for specific issues because the flotation cost for a specific issue is never recorded. Thus, it is not clear to participants whether a current allowance is meant to recover (1) flotation costs actually incurred in a test period, (2) expected future flotation costs, or (3) past flotation costs. This confusion never arises in the treatment of debt flotation costs. Because the exact costs are recorded and explicitly amortized over time, participants recognize that current allowances for debt flotation costs are meant to recover some fraction of the flotation costs on all past debt issues.

EXISTING REGULATORY METHODS

Although most state commissions prefer to let a regulated firm recover flotation expenses through an adjustment to the allowed rate of return, there is considerable controversy about the magnitude of the required adjustment. The following are some of the most frequently asked questions: (1) Should an adjustment to the allowed return be made every year, or should the adjustment be made only in those years in which new equity is raised? (2) Should an adjusted rate of return be applied to the entire rate base, or should it be applied only to that portion of the rate base financed with paid-in capital (as opposed to retained earnings)? (3) What is the appropriate formula for adjusting the rate of return?

This section reviews several methods of allowing for flotation cost recovery. Since the regulatory methods of allowing for recovery of debt flotation costs is well known and widely accepted, I will begin my discussion of flotation cost recovery procedures by describing the widely accepted procedure of allowing for debt flotation cost recovery.

Debt Flotation Costs

Regulators uniformly recognize that companies incur flotation costs when they issue debt securities. They typically allow recovery of debt flotation costs by making an adjustment to both the cost of debt and the rate base (see Brigham [6]). Assume that: (1) a regulated company issues $100 million in bonds that mature in 10 years; (2) the interest rate on these bonds is seven percent; and (3) flotation costs represent four percent of the amount of the proceeds. Then the cost of debt for regulatory purposes will generally be calculated as follows:

$$\begin{aligned}\text{Cost of Debt} &= \frac{\text{Interest expense} + \text{Amortization of flotation costs}}{\text{Principal value - Unamortized flotation costs}}\\ &= \frac{\$7{,}000{,}000 + \$400{,}000}{\$100{,}000{,}000 - \$4{,}000{,}000}\\ &= 7.71\%\end{aligned}$$

Thus, current regulatory practice requires that the cost of debt be adjusted upward by approximately 71 basis points, in this example, to allow for the recovery of debt flotation costs. This example does not include losses on reacquisition of debt. The flotation cost allowance would increase if losses on reacquisition of debt were included.

The logic behind the traditional method of allowing for recovery of debt flotation costs is simple. Although the company has issued $100 million in bonds, it can only invest $96 million in rate base because flotation costs have reduced the amount of funds received by $4 million. If the company is not allowed to earn a 71 basis point higher rate of return on the $96 million invested in rate base, it will not generate sufficient cash flow to pay the seven percent interest on the $100 million in bonds it has issued. Thus, proper regulatory treatment is to increase the required rate of return on debt by 71 basis points.

Equity Flotation Costs

The finance literature discusses several methods of recovering equity flotation costs. Since each method stems from a specific model, (i. e., set of assumptions) of a firm and its cash flows, I will highlight the assumptions that distinguish one method from another.

Arzac and Marcus. Arzac and Marcus [2] study the proper flotation cost adjustment formula for a firm that makes continuous use of retained earnings and external equity financing and maintains a constant capital structure (debt/equity ratio). They assume at the outset that underwriting expenses and underpricing apply only to new equity obtained from external sources. They also assume that a firm has previously recovered all underwriting expenses, issuer expenses, and underpricing associated with previous issues of new equity.

To discuss and compare various equity flotation cost adjustment formulas, Arzac and Marcus make use of the following notation:

k	=	an investors' required return on equity
r	=	a utility's allowed return on equity base
S	=	value of equity in the absence of flotation costs
S_f	=	value of equity net of flotation costs
K_t	=	equity base at time t
E_t	=	total earnings in year t
D_t	=	total cash dividends at time t
b	=	$(E_t-D_t) \div E_t$ = retention rate, expressed as a fraction of earnings
h	=	new equity issues, expressed as a fraction of earnings
m	=	equity investment rate, expressed as a fraction of earnings, $m = b + h < 1$
f	=	flotation costs, expressed as a fraction of the value of an issue.

Because of flotation costs, Arzac and Marcus assume that a firm must issue a greater amount of external equity each year than it actually needs. In terms of the above notation, a firm issues $hE_t \div (1\text{-}f)$ to obtain hE_t in external equity funding. Thus, each year a firm loses:

Equation 3

$$L = \frac{hE_t}{1-f} - hE_t = \frac{f}{1-f} \times hE_t$$

due to flotation expenses. The present value, V, of all future flotation expenses is:

Equation 4

$$V = \sum_{t=1}^{\infty} \frac{fhE_t}{(1-f)(1+k)^t} = \frac{fh}{1-f} \times \frac{rK_0}{k-mr}$$

To avoid diluting the value of the initial stockholder's equity, a regulatory authority needs to find the value of r, a firm's allowed return on equity base, that equates the value of equity net of flotation costs to the initial equity base ($S_f = K_0$). Since the value of equity net of flotation costs equals the value of equity in the absence of flotation costs minus the present value of flotation costs, a regulatory authority needs to find that value of *r* that solves the following equation:

$$S_f = S - L.$$

This value is:

Equation 5

$$r = \frac{k}{1 - \frac{fh}{1-f}}$$

To illustrate the Arzac-Marcus approach to adjusting the allowed return on equity for the effect of flotation costs, suppose that the cost of equity in the absence of flotation costs is 12 percent. Furthermore, assume that a firm obtains external equity financing each year equal to 10 percent of its earnings and that flotation expenses equal 5 percent of the value of each issue. Then, according to Arzac and Marcus, the allowed return on equity should be:

$$r = \frac{.12}{1 - \frac{(.05).(.1)}{.95}} = .1206 = 12.06\%$$

<u>Summary</u>. With respect to the three questions raised at the beginning of this section, it is evident that Arzac and Marcus believe the flotation cost adjustment should be applied each year, since continuous external equity financing is a fundamental assumption of their model. They also believe that the adjusted rate of return should be applied to the entire equity-financed portion of the rate base because their model is based on the assumption that the flotation cost adjustment mechanism will be applied to the entire equity financed portion of the rate base. Finally, Arzac and Marcus recommend a flotation cost adjustment formula, Equation (3), that implicitly excludes recovery of financing costs associated with financing in previous periods and includes only an allowance for the fraction of equity financing obtained from external sources.

Patterson. The Arzac-Marcus flotation cost adjustment formula is significantly different from the conventional approach (found in many introductory textbooks) which recommends the adjustment equation:

Equation 6

$$r = \frac{D_t}{P_{t-1}(1-f)} + g$$

where P_{t-1} is the stock price in the previous period and g is the expected dividend growth rate. Patterson [18] compares the Arzac-Marcus adjustment formula to the conventional approach and reaches the conclusion that the Arzac-Marcus formula effectively expenses issuance costs as they are incurred, while the conventional approach effectively amortizes them over an assumed infinite life of the equity issue. Thus, the conventional formula is similar to the formula for the recovery of debt flotation costs: it is not meant to compensate investors for the flotation costs of future issues, but instead is meant to compensate investors for the flotation costs of previous issues. Patterson argues that the conventional approach is more appropriate for rate making purposes because the plant purchased with external equity funds will yield benefits over many future periods.

Illustration. To illustrate the Patterson approach to flotation cost recovery, assume that a newly organized utility sells an initial issue of stock for $100 per share, and that the utility plans to finance all new investments with retained earnings. Assume also that: (1) the initial dividend per share is six dollars; (2) the expected long-run dividend growth rate is six percent; (3) the flotation cost is five percent of the amount of the proceeds; and (4) the payout ratio is 51.28 percent. Then, the investor's required rate of return on equity is [k = (D/P) + g = 6 percent + 6 percent = 12 percent]; and the flotation-cost-adjusted cost of equity is [6 percent (1/.95) + 6 percent = 12.316 percent].

The effects of the Patterson adjustment formula on the utility's rate base, dividends, earnings, and stock price are shown in Table 3. We see that the Patterson formula allows earnings and dividends to grow at the expected six percent rate. We also see that the present value of expected future dividends, $100, is just sufficient to induce investors to part with their money. If the present value of expected future dividends were less than $100, investors would not have been willing to invest $100 in the firm. Furthermore, the present value of future dividends will only equal $100 if the firm is allowed to earn the 12.316 percent flotation-cost-adjusted cost of equity on its entire rate base.

Summary. Patterson's opinions on the three issues raised in this section are in stark contrast to those of Arzac and Marcus. He believes that: (1) a flotation cost adjustment should be applied in every year, regardless of whether a firm issues any new equity in each year; (2) a flotation cost adjustment should be applied to the entire equity-financed portion of the rate base, including that portion financed by retained earnings; and (3) the rate of return adjustment formula should allow a firm to recover an appropriate fraction of all previous flotation expenses.

CONCLUSION

Having reviewed the literature and analyzed flotation cost issues, I conclude that:

Definition of Flotation Cost: A regulated firm should be allowed to recover both the total underwriting and issuance expenses associated with issuing securities and the cost of market pressure.

Time Pattern of Flotation Cost Recovery. Shareholders are indifferent between the alternatives of immediate recovery of flotation costs and recovery over time, as long as they are fairly compensated for the opportunity cost of their money. This opportunity cost must include both the time value of money and a risk premium for equity investments of this nature.

Regulatory Recovery of Flotation Costs. The Patterson approach to recovering flotation costs is the only rate-of-return-adjustment approach that meets the *Hope* case criterion that a regulated company's revenues must be sufficient to allow the company an opportunity to recover all prudently incurred expenses, including the cost of capital. The Patterson approach is also the only rate-of-return-adjustment approach that provides an incentive for investors to invest in the regulated company.

Implementation of a Flotation Cost Adjustment. As noted earlier, prevailing regulatory practice seems to be to allow the recovery of flotation costs through an adjustment to the required rate of return. My review of the literature on this subject indicates that there are at least two recommended methods of making this adjustment: the Patterson approach and the Arzac-Marcus approach. The Patterson approach assumes that a firm's flotation expenses on new equity issues are treated in the same manner as flotation expenses on new bond issues, i. e., they are amortized over future time periods. If this assumption is true (and I believe it is), then the flotation cost adjustment should be applied to a firm's entire equity base, including retained earnings. In practical terms, the Patterson approach produces an increase in a firm's cost of equity of approximately thirty basis points. The Arzac-Marcus approach assumes that flotation costs on new equity issues are recovered entirely in the year in which the securities are sold. Under the Arzac-Marcus assumption, a firm should not be allowed any adjustments for flotation costs associated with previous flotations. Instead, a firm should be allowed only an adjustment on future security sales as they occur. Under reasonable assumptions about the rate of new equity sales, this method produces an increase in the cost of equity of approximately six basis points. Since the Arzac-Marcus approach does not allow the company to recover the entire amount of its flotation cost, I recommend that this approach be rejected and the Patterson approach be accepted.

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Table 1

Direct Costs as a Percentage of Gross Proceeds
for Equity (IPOs and SEOs) and Straight and Convertible Bonds
Offered by Domestic Operating Companies 1990—1994[6]

Equities

	IPOs				SEOs			
Proceeds ($ in millions)	No. of Issues	Gross Spreads	Other Direct Expenses	Total Direct Costs	No. of Issues	Gross Spreads	Other Direct Expenses	Total Direct Costs
2-9.99	337	9.05%	7.91%	16.96%	167	7.72%	5.56%	13.28%
10-19.99	389	7.24%	4.39%	11.63%	310	6.23%	2.49%	8.72%
20-39.99	533	7.01%	2.69%	9.70%	425	5.60%	1.33%	6.93%
40-59.99	215	6.96%	1.76%	8.72%	261	5.05%	0.82%	5.87%
60-79.99	79	6.74%	1.46%	8.20%	143	4.57%	0.61%	5.18%
80-99.99	51	6.47%	1.44%	7.91%	71	4.25%	0.48%	4.73%
100-199.99	106	6.03%	1.03%	7.06%	152	3.85%	0.37%	4.22%
200-499.99	47	5.67%	0.86%	6.53%	55	3.26%	0.21%	3.47%
500 and up	10	5.21%	0.51%	5.72%	9	3.03%	0.12%	3.15%
Total/Average	**1,767**	**7.31%**	**3.69%**	**11.00%**	**1,593**	**5.44%**	**1.67%**	**7.11%**

Bonds

	Convertible Bonds				Straight Bonds			
Proceeds ($ in millions)	No. of Issues	Gross Spreads	Other Direct Expenses	Total Direct Costs	No. of Issues	Gross Spreads	Other Direct Expenses	Total Direct Costs
2-9.99	4	6.07%	2.68%	8.75%	32	2.07%	2.32%	4.39%
10-19.99	14	5.48%	3.18%	8.66%	78	1.36%	1.40%	2.76%
20-39.99	18	4.16%	1.95%	6.11%	89	1.54%	0.88%	2.42%
40-59.99	28	3.26%	1.04%	4.30%	90	0.72%	0.60%	1.32%
60-79.99	47	2.64%	0.59%	3.23%	92	1.76%	0.58%	2.34%
80-99.99	13	2.43%	0.61%	3.04%	112	1.55%	0.61%	2.16%
100-199.99	57	2.34%	0.42%	2.76%	409	1.77%	0.54%	2.31%
200-499.99	27	1.99%	0.19%	2.18%	170	1.79%	0.40%	2.19%
500 and up	3	2.00%	0.09%	2.09%	20	1.39%	0.25%	1.64%
Total/Average	**211**	**2.92%**	**0.87%**	**3.79%**	**1,092**	**1.62%**	**0.62%**	**2.24%**

Notes:

Closed-end funds and unit offerings are excluded from the sample. Rights offerings for SEOs are also excluded. Bond offerings do not include securities backed by mortgages and issues by Federal agencies. Only firm commitment offerings and non-shelf-registered offerings are included.
Gross Spreads as a percentage of total proceeds, including management fee, underwriting fee, and selling concession.
Other Direct Expenses as a percentage of total proceeds, including management fee, underwriting fee, and selling concession.
Total Direct Costs as a percentage of total proceeds (total direct costs are the sum of gross spreads and other direct expenses).

[6] Inmoo Lee, Scott Lochhead, Jay Ritter, and Quanshui Zhao, “The Costs of Raising Capital,” *Journal of Financial Research* Vol 19 No 1 (Spring 1996) pp. 59—74.

Table 2

Direct Costs of Raising Capital 1990—1994
Utility versus Non-Utility Companies[7]

Equities

Non-Utilities	IPOs			SEOs		
Proceeds ($ in millions)	No. of Issues	Gross Spreads	Total Direct Costs	No. Of Issues	Gross Spreads	Total Direct Costs
2-9.99	332	9.04%	16.97%	154	7.91%	13.76%
10-19.99	388	7.24%	11.64%	278	6.42%	9.01%
20-39.99	528	7.01%	9.70%	399	5.70%	7.07%
40-59.99	214	6.96%	8.71%	240	5.17%	6.02%
60-79.99	78	6.74%	8.21%	131	4.68%	5.31%
80-99.99	47	6.46%	7.88%	60	4.35%	4.84%
100-199.99	101	6.01%	7.01%	137	3.97%	4.36%
200-499.99	44	5.65%	6.49%	50	3.27%	3.48%
500 and up	10	5.21%	5.72%	8	3.12%	3.25%
Total/Average	1,742	7.31%	11.01%	1,457	5.57%	7.32%
Utilities Only						
2-9.99	5	9.40%	16.54%	13	5.41%	7.68%
10-19.99	1	7.00%	8.77%	32	4.59%	6.21%
20-39.99	5	7.00%	9.86%	26	4.17%	4.96%
40-59.99	1	6.98%	11.55%	21	3.69%	4.12%
60-79.99	1	6.50%	7.55%	12	3.39%	3.72%
80-99.99	4	6.57%	8.24%	11	3.68%	4.11%
100-199.99	5	6.45%	7.96%	15	2.83%	2.98%
200-499.99	3	5.88%	7.00%	5	3.19%	3.48%
500 and up	0			1	2.25%	2.31%
Total/Average	25	7.15%	10.14%	136	4.01%	4.92%

[7] Lee *et al, op. cit*.

Table 2 (continued)
Direct Costs of Raising Capital 1990—1994
Utility versus Non-Utility Companies[8]

Bonds

Non- Utilities	Convertible Bonds			Straight Bonds		
Proceeds ($ in millions)	No. of Issues	Gross Spreads	Total Direct Costs	No. of Issues	Gross Spreads	Total Direct Costs
2-9.99	4	6.07%	8.75%	29	2.07%	4.53%
10-19.99	12	5.54%	8.65%	47	1.70%	3.28%
20-39.99	16	4.20%	6.23%	63	1.59%	2.52%
40-59.99	28	3.26%	4.30%	76	0.73%	1.37%
60-79.99	47	2.64%	3.23%	84	1.84%	2.44%
80-99.99	12	2.54%	3.19%	104	1.61%	2.25%
100-199.99	55	2.34%	2.77%	381	1.83%	2.38%
200-499.99	26	1.97%	2.16%	154	1.87%	2.27%
500 and up	3	2.00%	2.09%	19	1.28%	1.53%
Total/Average	203	2.90%	3.75%	957	1.70%	2.34%
Utilities Only						
2-9.99	0			3	2.00%	3.28%
10-19.99	2	5.13%	8.72%	31	0.86%	1.35%
20-39.99	2	3.88%	5.18%	26	1.40%	2.06%
40-59.99	0			14	0.63%	1.10%
60-79.99	0			8	0.87%	1.13%
80-99.99	1	1.13%	1.34%	8	0.71%	0.98%
100-199.99	2	2.50%	2.74%	28	1.06%	1.42%
200-499.99	1	2.50%	2.65%	16	1.00%	1.40%
500 and up	0			1	3.50%	na[9]
Total/Average	8	3.33%	4.66%	135	1.04%	1.47%

Notes:
Total proceeds raised in the United States, excluding proceeds from the exercise of over allotment options.
Gross spreads as a percentage of total proceeds (including management fee, underwriting fee, and selling concession).
Other direct expenses as a percentage of total proceeds (including registration fee and printing, legal, and auditing costs).

[8] Lee *et al, op. cit*.

[9] Not available because of missing data on other direct expenses.

Table 3
Illustration of Patterson Approach to Flotation Cost Recovery

Time Period	Rate Base	Earnings @ 12.32%	Earnings @ 12.00%	Dividends	Amortization Initial FC
0	95.00				
1	100.70	11.70	11.40	6.00	0.3000
2	106.74	12.40	12.08	6.36	0.3180
3	113.15	13.15	12.81	6.74	0.3371
4	119.94	13.93	13.58	7.15	0.3573
5	127.13	14.77	14.39	7.57	0.3787
6	134.76	15.66	15.26	8.03	0.4015
7	142.84	16.60	16.17	8.51	0.4256
8	151.42	17.59	17.14	9.02	0.4511
9	160.50	18.65	18.17	9.56	0.4782
10	170.13	19.77	19.26	10.14	0.5068
11	180.34	20.95	20.42	10.75	0.5373
12	191.16	22.21	21.64	11.39	0.5695
13	202.63	23.54	22.94	12.07	0.6037
14	214.79	24.96	24.32	12.80	0.6399
15	227.67	26.45	25.77	13.57	0.6783
16	241.33	28.04	27.32	14.38	0.7190
17	255.81	29.72	28.96	15.24	0.7621
18	271.16	31.51	30.70	16.16	0.8078
19	287.43	33.40	32.54	17.13	0.8563
20	304.68	35.40	34.49	18.15	0.9077
21	322.96	37.52	36.56	19.24	0.9621
22	342.34	39.77	38.76	20.40	1.0199
23	362.88	42.16	41.08	21.62	1.0811
24	384.65	44.69	43.55	22.92	1.1459
25	407.73	47.37	46.16	24.29	1.2147
26	432.19	50.21	48.93	25.75	1.2876
27	458.12	53.23	51.86	27.30	1.3648
28	485.61	56.42	54.97	28.93	1.4467
29	514.75	59.81	58.27	30.67	1.5335
30	545.63	63.40	61.77	32.51	1.6255
Present Value@12%		195.00	190.00	100.00	5.00

APPENDIX 4
EX ANTE RISK PREMIUM APPROACH

My ex ante risk premium method is based on studies of the DCF expected return on proxy companies compared to the interest rate on Moody's A-rated utility bonds. Specifically, for each month in my study period, I calculate the risk premium using the equation,

$$RP_{PROXY} = DCF_{PROXY} - I_A$$

where:

RP_{PROXY}	=	the required risk premium on an equity investment in the proxy group of companies,
DCF_{PROXY}	=	average DCF estimated cost of equity on a portfolio of proxy companies; and
I_A	=	the yield to maturity on an investment in A-rated utility bonds.

For my ex ante risk premium analysis, I begin with my comparable group of natural gas companies shown in Schedule 2. Previous studies have shown that the ex ante risk premium tends to vary inversely with the level of interest rates, that is, the risk premium tends to increase when interest rates decline, and decrease when interest rates go up. To test whether my studies also indicate that the ex ante risk premium varies inversely with the level of interest rates, I perform a regression analysis of the relationship between the ex ante risk premium and the yield to maturity on A-rated utility bonds, using the equation,

$$RP_{PROXY} = a + (b \times I_A) + e$$

where:

RP_{PROXY} = risk premium on proxy company group;

I_A = yield to maturity on A-rated utility bonds;

e = a random residual; and

a, b = coefficients estimated by the regression procedure.

Regression analysis assumes that the statistical residuals from the regression equation are random. My examination of the residuals reveals that there is a significant probability that the residuals are serially correlated (non-zero serial correlation indicates that the residual in one time period tends to be correlated with the residual in the previous time period). Therefore, I make adjustments to my data to correct for the possibility of serial correlation in the residuals.

The common procedure for dealing with serial correlation in the residuals is to estimate the regression coefficients in two steps. First, a multiple regression analysis is used to estimate the serial correlation coefficient, *r*. Second, the estimated serial correlation coefficient is used to transform the original variables into new variables whose serial correlation is approximately zero. The regression coefficients are then re-estimated using the transformed variables as inputs in the regression equation. Based on my knowledge of the statistical relationship between the yield to maturity on A-rated utility bonds and the required risk premium, my estimate of the ex ante risk premium on an investment in my proxy natural gas company group as compared to an investment in A-rated utility bonds is given by the equation:

$$RP_{PROXY} = \underset{(12.40)}{8.80} \quad \underset{(-6.13)}{-0.613 \times I_A}.$$ [10]

[10] The t-statistics are shown in parentheses.

Using a 6.47 percent forecasted yield to maturity on A-rated utility bonds at March 2012,[11] the regression equation produces an ex ante risk premium based on the natural gas proxy group equal to 4.84 percent (8.80 – .613 x 6.47= 4.84).

To estimate the cost of equity using the ex ante risk premium method, one may add the estimated risk premium over the yield on A-rated utility bonds to the forecasted yield to maturity on A-rated utility bonds. As described above, my analyses produce an estimated risk premium over the yield on A-rated utility bonds equal to 4.84 percent. Adding an estimated risk premium of 4.84 percent to the 6.47 percent forecasted yield to maturity on A-rated utility bonds produces a cost of equity estimate of 11.3 percent using the ex ante risk premium method.

[11] As described above, I obtain the forecasted bond yield using data from Value Line and Global Insight. Value Line Selection & Opinion (February 24, 2012) projects a AAA-rated Corporate bond yield equal to 5.30 percent. The February 2012 average spread between A-rated utility bonds and Aaa-rated Corporate bonds is fifty-one basis points (A-rated utility, 4.36 percent, less Aaa-rated Corporate, 3.85 percent, equals fifty-one basis points). Adding fifty-one basis points to the 5.30 percent Value Line forecast equals a forecast yield of 5.81 percent. Global Insight, February 2012, forecasts a AA-rated utility bonds yield equal to 6.80 percent. The average spread between AA-rated utility and A-rated utility bonds, February 2012, is thirty-four basis points (4.36 percent less 4.02 percent). Adding thirty-four basis points to the Global Insight forecast of 6.80 percent equals a forecast yield for A-rated utility bonds equal to 7.14 percent. The average of the forecasts, (5.81 percent using Value Line data and 7.14 percent using Global Insight data) is 6.47 percent.

APPENDIX 5
RISK PREMIUM APPROACH

Source

Stock price and yield information is obtained from Standard & Poor's Security Price publication. Standard & Poor's derives the stock dividend yield by dividing the aggregate cash dividends (based on the latest known annual rate) by the aggregate market value of the stocks in the group. The bond price information is obtained by calculating the present value of a bond due in 30 years with a $4.00 coupon and a yield to maturity of a particular year's indicated Moody's A-rated utility bond yield. The values shown on Schedules 4 and 5 are the January values of the respective indices. Standard & Poor's discontinued its S&P Utilities Index in December 2001, replacing its utilities stock index with separate indices for electric and natural gas utilities. Thus, to continue my study, I based the stock returns beginning in 2002 on the total returns for the EEI Index of U.S. shareholder-owned electric utilities, as reported by EEI on its website.
http://www.eei.org/whatwedo/DataAnalysis/IndusFinanAnalysis/Pages/QtrlyFinancialUpdates.aspx

Calculation of Stock and Bond Returns

Sample calculation of "Stock Return" column:

$$\text{StockReturn(2010)} = \left[\frac{\text{StockPrice(2011)} - \text{StockPrice(2010)} + \text{Dividend(2010)}}{\text{StockPrice(2010)}}\right]$$

where Dividend (2010) = Stock Price (2010) x Stock Div. Yield (2010)

Sample calculation of "Bond Return" column:

$$\text{Bond Return (2010)} = \left[\frac{\text{Bond Price (2011) - Bond Price (2010) + Interest (2010)}}{\text{Bond Price (2010)}}\right]$$

where Interest = $4.00.

STATE OF NORTH CAROLINA

COUNTY OF DURHAM

BEFORE ME, the undersigned authority, duly commissioned and qualified in and for the State and County aforesaid, personally came and appeared Dr. James Vander Weide, being by me first duly sworn deposed and said that:

He is appearing as a witness on behalf of Tennessee-American Water Company before the Tennessee Regulatory Authority, and if present before the Authority and duly sworn, his testimony would set forth in the annexed transcript.

Dr. James Vander Weide

Dr. James Vander Weide

Sworn to and subscribed before me
this 24th day of May, 2012.

Sandra W. Bumpass

Notary Public Commission Expires 05-11-2013

SANDRA W. BUMPASS
NOTARY
PUBLIC
DURHAM COUNTY, NC

115583.142475/4063717.1

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:	)	
	)	
THE APPLICATION OF KENTUCKY-AMERICAN	)	**CASE NO. 2010-00036**
WATER COMPANY FOR AN ADJUSTMENT OF	)	
RATES ON AND AFTER MARCH 28, 2010	)	

DIRECT TESTIMONY OF JAMES H. VANDER WEIDE

February 26, 2010

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I. WITNESS IDENTIFICATION

Q. 1 What is your name and business address?

A. 1 My name is James H. Vander Weide. I am Research Professor of Finance and Economics at Duke University, the Fuqua School of Business. I am also President of Financial Strategy Associates, a firm that provides strategic and financial consulting services to business clients. My business address is 3606 Stoneybrook Drive, Durham, North Carolina.

Q. 2 Would you please describe your educational background and prior academic experience?

A. 2 I graduated from Cornell University with a Bachelor's Degree in Economics and from Northwestern University with a Ph.D. in Finance. After joining the faculty of the School of Business at Duke University, I was named Assistant Professor, Associate Professor, and then Professor. I have published research in the areas of finance and economics and taught courses in corporate finance, investment management, and management of financial institutions at Duke for more than 35 years. My research publications and teaching experience are described in Appendix 1. I am now retired from my teaching duties at Duke.

Q. 3 Have you previously testified on financial or economic issues?

A. 3 Yes. As an expert on financial and economic theory and practice, I have participated in more than 400 regulatory and legal proceedings

before the U.S. Congress, the Canadian Radio-Television and Telecommunications Commission, the Federal Communications Commission, the National Telecommunications and Information Administration, the Federal Energy Regulatory Commission, the National Energy Board (Canada), the public service commissions of 43 states and three Canadian provinces, the insurance commissions of five states, the Iowa State Board of Tax Review, the National Association of Securities Dealers, and the North Carolina Property Tax Commission. In addition, I have prepared expert testimony in proceedings before the U.S. District Court for the District of Nebraska; the U.S. District Court for the District of New Hampshire; the U.S. District Court for the District of Northern Illinois; the U.S. District Court for the Eastern District of North Carolina; the U.S. District Court for the Northern District of California; Montana Second Judicial District Court, Silver Bow County; the Superior Court, North Carolina; the U.S. Bankruptcy Court for the Southern District of West Virginia; and the U.S. District Court for the Eastern District of Michigan.

II. PURPOSE OF TESTIMONY

Q. 4 What is the purpose of your testimony?

A. 4 I have been asked by Kentucky American Water Company (KAWC) to prepare an independent appraisal of its cost of equity capital and to recommend a rate of return on equity that is fair, that allows KAWC to attract capital on reasonable terms, and that allows KAWC to maintain its financial integrity.

Q. 5 How do you estimate KAWC's cost of equity?

A. 5 I estimate KAWC's cost of equity by applying several standard cost of equity estimation techniques, including the discounted cash flow (DCF) model, the risk premium method, and the Capital Asset Pricing Model (CAPM) to groups of comparable risk companies.

Q. 6 Do you generally give equal weight to the results of these standard cost of equity methods?

A. 6 I generally give equal weight to the results of these standard cost of equity methods when the average Value Line beta for the proxy companies is relatively close to 1.0, and the average company in my proxy group has a relatively large market value capitalization. If the average Value Line beta for the proxy companies is significantly less than 1.0, as it is in this present case, and/or the average market value capitalization for the proxy companies is relatively small, I generally give little or no weight to the results of the application of the CAPM.

Q. 7 Why do you give little or no weight to the result of the CAPM when the average Value Line beta is significantly less than 1.0?

A. 7 I give little or no weight to the result of the CAPM when the average Value Line beta is significantly less than 1.0 because financial research provides strong support for the conclusion that the CAPM underestimates the cost of equity for companies whose betas are

significantly less than 1.0. I present a summary of this research in the CAPM section of my testimony.

Q. 8 Why is it appropriate to give less weight to the result of the CAPM when the companies in the proxy group have small market capitalization?

A. 8 It is appropriate to give less weight to the result of the CAPM in this case because financial research also supports the conclusion that the CAPM underestimates the cost of equity for small market capitalization companies.

Q. 9 What cost of equity do you find for your comparable companies in this proceeding?

A. 9 I find that the cost of equity for my comparable companies is in the range 10.8 percent to 12.1 percent. Because the average beta of my proxy companies is significantly less than 1.0, my conclusion is based on the results of my DCF and risk premium studies.

Q. 10 What is your recommendation regarding KAWC's cost of equity?

A. 10 I conservatively recommend that KAWC be allowed a fair rate of return on common equity in the range 10.8 percent to 12.1 percent. My recommended return on equity is conservative in that I use: (1) the lower simple average DCF result for the proxy water companies, even though a market-value weighted average is generally more appropriate for estimating the cost of equity; and (2) the lower average result for the LDC proxy group obtained by eliminating outlier low and high results.

Q. 11 Do you have an exhibit to accompany your testimony?

A. 11 Yes. I have an Exhibit___(JVW-1), consisting of eight schedules and five appendices that were prepared by me or under my direction and supervision.

III. ECONOMIC AND LEGAL PRINCIPLES

Q. 12 How do economists define the required rate of return, or cost of capital, associated with particular investment decisions such as the decision to invest in water treatment, storage, and distribution facilities?

A. 12 Economists define the cost of capital as the return investors expect to receive on alternative investments of comparable risk.

Q. 13 How does the cost of capital affect a firm's investment decisions?

A. 13 The goal of a firm is to maximize the value of the firm. This goal can be accomplished by accepting all investments in plant and equipment with an expected rate of return greater than or equal to the cost of capital. Thus, a firm should continue to invest in plant and equipment only so long as the return on its investment is greater than or equal to its cost of capital.

Q. 14 How does the cost of capital affect investors' willingness to invest in a company?

A. 14 The cost of capital measures the return investors can expect on investments of comparable risk. The cost of capital also measures the investor's required rate of return on investment because rational investors will not invest in a particular investment opportunity if the expected return on that opportunity is less than the cost of capital. Thus, the cost of capital is a hurdle rate for both investors and the firm.

Q. 15 Do all investors have the same position in the firm?

A. 15 No. Debt investors have a fixed claim on a firm's assets and income that must be paid prior to any payment to the firm's equity investors. Since the firm's equity investors have a residual claim on the firm's assets and income, equity investments are riskier than debt investments. Thus, the cost of equity exceeds the cost of debt.

Q. 16 What is the economic definition of the cost of equity?

A. 16 As I noted above, the cost of equity is the return investors expect to receive on alternative equity investments of comparable risk. Since the return on an equity investment of comparable risk is not a contractual return, the cost of equity is more difficult to measure than the cost of debt. However, as I have already noted, the cost of equity is greater than the cost of debt. The cost of equity, like the cost of debt, is both forward looking and market based.

Q. 17 How do economists measure the percentages of debt and equity in a firm's capital structure?

A. 17 Economists measure the percentages of debt and equity in a firm's capital structure by first calculating the market value of the firm's debt and the market value of its equity. Economists then calculate the percentage of debt by the ratio of the market value of debt to the combined market value of debt and equity, and the percentage of equity by the ratio of the market value of equity to the combined market values of debt and equity. For example, if a firm's debt has a market value of $25 million and its equity has a market value of $75 million, then its total market capitalization is $100 million, and its capital structure contains 25 percent debt and 75 percent equity.

Q. 18 Why do economists measure a firm's capital structure in terms of the market values of its debt and equity?

A. 18 Economists measure a firm's capital structure in terms of the market values of its debt and equity because: (1) the weighted average cost of capital is defined as the return investors expect to earn on a portfolio of the company's debt and equity securities; (2) investors measure the expected return and risk on their portfolios using market value weights, not book value weights; and (3) market values are the best measures of the amounts of debt and equity investors have invested in the company on a going forward basis.

Q. 19 Why do investors measure the expected return and risk on their investment portfolios using market value weights rather than book value weights?

A. 19 Investors measure the expected return and risk on their investment portfolios using market value weights because market values are the best measure of the amounts the investors currently have invested in each security in the portfolio. From the point of view of investors, the historical cost or book value of their investment is irrelevant to the current risk and required return on their portfolios because if they were to sell their investments, they would receive market value, not historical cost. Thus, the return can only be measured in terms of market values.

Q. 20 Is the economic definition of the weighted average cost of capital consistent with regulators' traditional definition of the average cost of capital?

A. 20 No. The economic definition of the weighted average cost of capital is based on the market costs of debt and equity, the market value percentages of debt and equity in a company's capital structure, and the future expected risk of investing in the company. In contrast, regulators have traditionally defined the weighted average cost of capital using the embedded cost of debt and the book values of debt and equity in a company's capital structure.

Q. 21 Does the required rate of return on an investment vary with the risk of that investment?

A. 21 Yes. Since investors are averse to risk, they require a higher rate of return on investments with greater risk.

Q. 22 Are these economic principles regarding the fair return for capital recognized in any Supreme Court cases?

A. 22 Yes. These economic principles, relating to the supply of and demand for capital, are recognized in two United States Supreme Court cases: (1) *Bluefield Water Works and Improvement Co. v. Public Service*

Comm'n.; and (2) *Federal Power Comm'n v. Hope Natural Gas Co*. In the *Bluefield Water Works* case, the Court states:

> A public utility is entitled to such rates as will permit it to earn a return upon the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties, but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures. The return…should be reasonably sufficient to assure confidence in the financial soundness of the utility, and should be adequate, under efficient and economical management, to maintain and support its credit, and enable it to raise the money necessary for the proper discharge of its public duties. [*Bluefield Water Works and Improvement Co. v. Public Service Comm'n.* 262 U.S. 679, 692 (1923)].

The Court clearly recognizes here that: (1) a regulated firm cannot remain financially sound unless the return it is allowed an opportunity to earn on the value of its property is at least equal to the cost of capital (the principle relating to the demand for capital); and (2) a regulated firm will not be able to attract capital if it does not offer investors an opportunity to earn a return on their investment equal to the return they expect to earn on other investments of the same risk (the principle relating to the supply of capital).

In the *Hope Natural Gas* case, the Court reiterates the financial soundness and capital attraction principles of the *Bluefield* case:

> From the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock... By that standard the return to the equity owner should be commensurate with returns on investments in

> other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital. [*Federal Power Comm'n v. Hope Natural Gas Co*., 320 U.S. 591, 603 (1944)]

IV. BUSINESS AND FINANCIAL RISKS IN THE WATER UTILITY INDUSTRY

Q. 23 What are the major factors that affect business risk in the water utility industry?

A. 23 Business risk in the water utility industry is affected by the following economic factors:

1. <u>High Operating Leverage</u>. The water utility business requires a large commitment to fixed costs in relation to variable costs, a situation called high operating leverage. The relatively high degree of fixed costs in the water utility business arises because of the average water company's large investment in fixed, long-lived water treatment, storage, and distribution facilities. High operating leverage causes the average water company's net income to be highly sensitive to sales fluctuations.

2. <u>Demand Uncertainty</u>. The business risk of the water utility business is increased by the high degree of demand uncertainty in the industry. Demand uncertainty is caused primarily by: (i) wide fluctuations in average temperature and rainfall from year to year; (ii) the state of the economy; and (iii) customer growth in the service territory.

3. Supply Uncertainty. The risk of the water utility business is further increased by the need to assure a safe and reliable supply of water to meet customer needs on any given day of the year. The Safe Drinking Water Act Amendments of 1996 authorize the Environmental Protection Agency (EPA) to periodically test the drinking water for impurities and to issue regulations requiring water utilities to reduce drinking water contaminants to an acceptable level. The EPA has exercised its authority by requiring the water utilities to meet increasingly stringent drinking water standards over time. The rising costs and uncertainty of meeting ever more stringent drinking water standards is a major risk facing the water utilities.

V. COST OF EQUITY ESTIMATION METHODS

Q. 24 What methods do you use to estimate the cost of common equity capital for KAWC?

A. 24 I review the results of three generally accepted methods for estimating the cost of common equity. These are the Discounted Cash Flow (DCF), the risk premium method, and the Capital Asset Pricing Model (CAPM). The DCF method assumes that the current market price of a firm's stock is equal to the discounted value of all expected future cash flows. The risk premium method assumes that the investor's required return on an equity investment is equal to the interest rate on a long-term bond plus an additional equity risk premium to compensate the investor for the risks of investing in equities compared to bonds. The CAPM assumes that the investor's required rate of return on equity is equal to a risk-free rate of interest plus the product of a company-specific risk factor, beta, and the expected risk premium on the market portfolio.

VI. DISCOUNTED CASH FLOW (DCF) APPROACH

Q. 25 Please describe the DCF model.

A. 25 The DCF model is based on the assumption that investors value an asset on the basis of the future cash flows they expect to receive from owning the asset. Thus, investors value an investment in a bond because they expect to receive a sequence of semi-annual coupon payments over the life of the bond and a terminal payment equal to the bond's face value at the time the bond matures. Likewise, investors value an investment in a firm's stock because they expect to receive a sequence of dividend payments and, perhaps, expect to sell the stock at a higher price sometime in the future.

A second fundamental principle of the DCF approach is that investors value a dollar received in the future less than a dollar received today. A future dollar is valued less than a current dollar because investors could invest a current dollar in an interest earning account and increase their wealth. This principle is called the time value of money.

Applying the two fundamental DCF principles noted above to an investment in a bond leads to the conclusion that investors value their investment in the bond on the basis of the present value of the bond's future cash flows. Thus, the price of the bond should reflect the timing, magnitude, and relative risk of the expected cash flows. Algebraically this can be expressed as:

EQUATION 1

$$P_B = \frac{C}{(1+i)} + \frac{C}{(1+i)^2} + \cdots + \frac{C+F}{(1+i)^n}$$

where:

P_B	=	Bond price;
C	=	Cash value of the constant coupon payment (assumed for notational convenience to occur annually rather than semi-annually);
F	=	Face value of the bond;
i	=	The rate of interest investors could earn by investing their money in an alternative bond of equal risk; and
n	=	The number of periods before the bond matures.

Applying these same principles to an investment in a firm's stock suggests that the price of the stock should be equal to:

EQUATION 2

$$P_s = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \cdots + \frac{D_n + P_n}{(1+k)^n}$$

where:

P_S	=	Current price of the firm's stock;
$D_1, D_2 ... D_n$	=	Expected annual dividend per share on the firm's stock;

P_n = Price per share of stock at the time the investor expects to sell the stock; and

k = Return the investor expects to earn on alternative investments of the same risk, i.e., the investor's required rate of return.

Equation (2) is frequently called the annual discounted cash flow model of stock valuation. Assuming that dividends grow at a constant annual rate, *g*, this equation can be solved for *k*, the cost of equity. The resulting cost of equity equation is $k = D_1/P_s + g$, where *k* is the cost of equity, D_1 is the expected next period annual dividend, P_s is the current price of the stock, and *g* is the constant annual growth rate in earnings, dividends, and book value per share. The term D_1/P_s is called the dividend yield component of the annual DCF model, and the term *g* is called the growth component of the annual DCF model. As in the case of the price of a bond, the price of a stock is related to the timing, magnitude, and relative risk of the expected cash flows.

Q. 26 Are you recommending that the annual DCF model be used to estimate KAWC's cost of equity?

A. 26 No. The DCF model assumes that a company's stock price is equal to the present discounted value of all expected future dividends. The annual DCF model is only a correct expression for the present discounted value of future dividends if dividends are paid annually at the end of each year. Since the companies in my proxy group all pay dividends quarterly, the current market price that investors are willing to pay reflects the expected quarterly receipt of dividends. Therefore, a quarterly DCF model must be used to estimate the cost of equity for these firms. The quarterly DCF model differs from the annual DCF model in that it expresses a company's price as the present discounted value of a quarterly stream of dividend payments. A complete analysis of the implications of the quarterly payment of dividends on the DCF model is provided in Exhibit__(JVW-1), Appendix 2. For the reasons cited there, I employed the quarterly DCF model throughout my calculations.

Q. 27 Please describe the quarterly DCF model you used.

A. 27 The quarterly DCF model I used is described on Exhibit__(JVW-1), Schedule 1 and in Appendix 2. The quarterly DCF equation shows that the cost of equity is: the sum of the future expected dividend yield and the growth rate, where the dividend in the dividend yield is the equivalent future value of the four quarterly dividends at the end of the year, and the growth rate is the expected growth in dividends or earnings per share.

Q. 28 In Appendix 2, you demonstrate that the quarterly DCF model provides the theoretically correct valuation of stocks when dividends are paid quarterly. Do investors, in practice, recognize the actual timing and magnitude of cash flows when they value stocks and other securities?

A. 28 Yes. In valuing long-term government or corporate bonds, investors recognize that interest is paid semi-annually. Thus, the price of a long-term government or corporate bond is simply the present value of the semi-annual interest and principal payments on these bonds. Likewise, in valuing mortgages, investors recognize that interest is paid monthly. Thus, the value of a mortgage loan is simply the present value of the monthly interest and principal payments on the loan. In valuing stock investments, stock investors correctly recognize that dividends are paid quarterly. Thus, a firm's stock price is the present value of the stream of quarterly dividends expected from owning the stock.

Q. 29 When valuing bonds, mortgages, or stocks, would investors assume that cash flows are received only at the end of the year, when, in fact, the cash flows are received semi-annually, quarterly, or monthly?

A 29 No. Assuming that cash flows are received at the end of the year when they are received semi-annually, quarterly, or monthly would lead investors to make serious mistakes in valuing investment opportunities. No rational investor would make the mistake of assuming that dividends or other cash flows are paid annually when, in fact, they are paid more frequently.

Q. 30 How do you estimate the growth component of the quarterly DCF model?

A. 30 I use both the average analysts' estimates of future earnings per share (EPS) growth reported by I/B/E/S Thomson Reuters (I/B/E/S) and the estimate of future earnings per share growth reported by Value Line.

Q. 31 Do you generally rely on EPS growth estimates from both I/B/E/S and Value Line?

A. 31 In applying the DCF model, I generally rely on the analysts' estimates reported by I/B/E/S. However, as I discuss in this testimony, the water companies have such small market capitalization that there are generally only one or two I/B/E/S analysts' long-term growth forecasts available. To supplement the available I/B/E/S growth forecasts, I therefore also rely on the earnings growth forecasts reported by Value Line for American States, Aqua America, California Water, Connecticut Water, Middlesex Water, SJW, and York.

Q. 32 What are the analysts' estimates of future EPS growth?

A. 32 As part of their research, financial analysts working at Wall Street firms periodically estimate EPS growth for each firm they follow. The EPS forecasts for each firm are then published. Investors who are contemplating purchasing or selling shares in individual companies review the forecasts. These estimates represent five-year forecasts of EPS growth.

Q. 33 What is I/B/E/S?

A. 33 I/B/E/S is a division of Thomson Reuters that reports analysts' EPS growth forecasts for a broad group of companies. The forecasts are expressed in terms of a mean forecast and a standard deviation of forecast for each firm. Investors use the mean forecast as an estimate of future firm performance.

Q. 34 Why do you use the I/B/E/S growth estimates?

A. 34 The I/B/E/S growth rates: (1) are widely circulated in the financial community, (2) include the projections of reputable financial analysts who develop estimates of future EPS growth, (3) are reported on a timely basis to investors, and (4) are widely used by institutional and other investors.

Q. 35 Why do you rely on analysts' projections of future EPS growth in estimating the investors' expected growth rate rather than looking at historical growth rates?

A. 35 I rely on analysts' projections of future EPS growth because there is considerable empirical evidence that investors use analysts' forecasts to estimate future earnings growth.

Q. 36 Have you performed any studies concerning the use of analysts' forecasts as an estimate of investors' expected growth rate, g?

A. 36 Yes, I prepared a study in conjunction with Willard T. Carleton, Professor Emeritus of Finance at the University of Arizona, on why analysts' forecasts are the best estimate of investors' expectation of future long-term growth. This study is described in a paper entitled "Investor Growth Expectations and Stock Prices: the Analysts versus History," published in the Spring 1988 edition of *The Journal of Portfolio Management*.

Q. 37 Please summarize the results of your study.

A. 37 First, we performed a correlation analysis to identify the historically oriented growth rates which best described a firm's stock price. Then we did a regression study comparing the historical growth rates with the average analysts' forecasts. In every case, the regression equations containing the average of analysts' forecasts statistically outperformed the regression equations containing the historical growth estimates. These results are consistent with those found by Cragg and Malkiel, the early major research in this area (John G. Cragg and Burton G. Malkiel, *Expectations and the Structure of Share Prices*, University of Chicago Press, 1982). These results are also consistent with the hypothesis that investors use analysts' forecasts, rather than historically oriented growth calculations, in making stock buy and sell decisions. They provide overwhelming evidence that the analysts' forecasts of future growth are superior to historically oriented growth measures in predicting a firm's stock price.

Q. 38 Has your study been updated to include more recent data?

A. 38 Yes. Researchers at State Street Financial Advisors updated my study using data through year-end 2003. Their results continue to confirm that analysts' growth forecasts are superior to historically-oriented growth measures in predicting a firm's stock price.

Q. 39 What price do you use in your DCF model?

A. 39 I use a simple average of the monthly high and low stock prices for each firm for the three-month period ending December 2009. These high and low stock prices were obtained from Thomson Reuters.

Q. 40 Why do you use the three-month average stock price in applying the DCF method?

A. 40 I use the three-month average stock price in applying the DCF method because stock prices fluctuate daily, while financial analysts' forecasts for a given company are generally changed less frequently, often on a quarterly basis. Thus, to match the stock price with an earnings forecast, it is appropriate to average stock prices over a three-month period.

Q. 41 Do you include an allowance for flotation costs in your DCF analysis?

A. 41 Yes. I include a five percent allowance for flotation costs in my DCF calculations.

Q. 42 Please explain your inclusion of flotation costs.

A. 42 All firms that have sold securities in the capital markets have incurred some level of flotation costs, including underwriters' commissions, legal fees, printing expense, etc. These costs are withheld from the proceeds of the stock sale or are paid separately, and must be recovered over the life of the equity issue. Costs vary depending upon the size of the issue, the type of registration method used and other factors, but in general these costs range between three and five percent of the proceeds from the issue [see Lee, Inmoo, Scott Lochhead, Jay Ritter, and Quanshui Zhao, "The Costs of Raising Capital," *The Journal of Financial Research*, Vol. XIX No 1 (Spring 1996), 59-74, and Clifford W. Smith, "Alternative Methods for Raising Capital," *Journal of Financial Economics* 5 (1977) 273-307]. In addition to these costs, for large equity issues (in relation to outstanding equity shares), there is likely to be a decline in price associated with the sale of shares to the public. On average, the decline due to market pressure has been estimated at two to three percent [see Richard H. Pettway, "The Effects of New Equity Sales Upon Utility Share Prices," *Public Utilities Fortnightly*, May 10, 1984, 35—39]. Thus, the total flotation cost, including both issuance expense and market pressure, could range anywhere from five to eight percent of the proceeds of an equity issue. I believe a combined five percent allowance for flotation costs is a conservative estimate that should be used in applying the DCF model in this proceeding.

Q. 43 Does KAWC issue equity in the capital markets?

A. 43 No. Although KAWC does not issue equity in the capital markets, its parent must issue equity to provide KAWC the necessary financing to make investments in its water supply operations. If the parent is not able to recover its flotation costs through KAWC's rates, it will have no incentive to invest in KAWC.

Q. 44 Is a flotation cost adjustment only appropriate if a company issues stock during the test year?

A. 44 No. As described in Exhibit__(JVW-1), Appendix 3, a flotation cost adjustment is required whether or not a company issued new stock during the test year. Previously incurred flotation costs have not been recovered in previous rate cases; rather, they are a permanent cost associated with past issues of common stock. Just as an adjustment is made to the embedded cost of debt to reflect previously incurred debt issuance costs (regardless of whether additional bond issuances were made in the test year), so should an adjustment be made to the cost of equity regardless of whether additional stock was issued during the test year.

Q. 45 How do you apply the DCF approach to obtain the cost of equity capital for KAWC?

A. 45 I apply the DCF approach to the publicly-traded water companies shown on Exhibit__(JVW-1), Schedule 1 and the publicly-traded natural gas distribution companies (LDCs) shown on Exhibit__(JVW-1), Schedule 2.

Q. 46 How do you select your group of publicly-traded water companies?

A. 46 I select all the water companies included in the Value Line Investment Survey that: (1) pay dividends; (2) did not decrease dividends during any quarter of the past two years; (3) have at least one analyst's long-term growth forecast; and (4) have not announced a merger. In addition, all of the companies included in my group, with the exception of Southwest Water, have a Value Line Safety Rank of 3, where 3 is the average Safety Rank of the Value Line universe of companies. The Value Line Safety Rank for Southwest Water is 4.

Q. 47 Why do you eliminate companies that have either decreased or eliminated their dividend in the past two years?

A. 47 The DCF model requires the assumption that dividends will grow at a constant rate into the indefinite future. If a company has either decreased or eliminated its dividend in recent years, an assumption that the company's dividend will grow at the same rate into the indefinite future is questionable.

Q. 48 Why do you eliminate companies that do not have any analyst's long-term growth forecasts?

A. 48 As noted above, my studies indicate that the analysts' growth forecasts best approximate the growth forecasts used by investors in making stock buy and sell decisions; and thus, the average of the analysts' growth forecasts is the best available estimate of the growth term in the DCF Model. In my opinion, it is difficult to apply the DCF model to companies that do not have any analysts' long-term growth estimates.

Q. 49 Are the Value Line water companies widely followed by analysts in the investment community?

A. 49 No. As a result of their small size and low investor turnover, the water companies are generally followed by very few analysts. The number of analysts' estimates for each of the Value Line water companies is shown below in Table 1:

Table 1

NUMBER OF LONG-TERM GROWTH FORECASTS FOR WATER COMPANIES

Line No.	Company	I/B/E/S Analysts' Estimates	Value Line Estimate	Value Line Edition
1	Amer. States Water	1	1	Standard
2	Amer. Water Works	3	0	Standard
3	Aqua America	3	1	Standard
4	Artesian Res. 'A'	1	0	Plus
5	California Water	2	1	Standard
6	Connecticut Water	NA	1	Plus
7	Middlesex Water	1	1	Plus
8	Pennichuck	NA	0	Plus
9	SJW Corp.	NA	1	Plus
10	Southwest Water	1	0	Standard
11	York Water	1	1	Plus

Q. 50 Do you normally include companies in your proxy groups that have only one or two analysts' long-term growth forecasts?

A. 50 No. I normally include a company in my proxy group only if there are at least three analysts' estimates of long-term growth. On the basis of my professional judgment, I believe that cost of equity estimates based on three or more analysts' estimates are more reliable than cost of equity estimates based on just one or two forecasts.

Q. 51 Recognizing the greater uncertainty associated with DCF results based on just one or two analysts' forecasts, do you supplement

your DCF results for the water companies with a DCF analysis of an additional proxy group?

A. 51 Yes. Given the greater uncertainty in applying the DCF model to companies with only one or two analysts' growth forecasts, as noted above, I also apply the DCF model to an additional proxy group consisting of natural gas distribution companies ("LDCs"), and each of the companies in the LDC proxy group has at least two analysts' estimates of long-term growth.

Q. 52 You note above that you also eliminate from your proxy groups companies that have announced mergers. Why do you eliminate companies that have announced mergers that are not yet completed?

A. 52 A merger announcement can sometimes have a significant impact on a company's stock price because of anticipated merger-related cost savings and new market opportunities. Analysts' growth forecasts, on the other hand, are necessarily related to companies as they currently exist, and do not reflect investors' views of the potential cost savings and new market opportunities associated with mergers. The use of a stock price that includes the value of potential mergers in conjunction with growth forecasts that do not include the growth enhancing prospects of potential mergers produces DCF results that tend to distort a company's cost of equity.

Q. 53 Please summarize the result of your application of the DCF model to your water company proxy group.

A. 53 As shown in Exhibit__(JVW-1), Schedule 1, my application of the DCF model to the Value Line water companies produces a market-weighted average DCF result of 13.2 percent and a simple average DCF result of 12.1 percent.

Q. 54 Is it generally more appropriate to use a market-weighted average DCF result or a simple average DCF result to estimate a company's cost of equity?

A. 54 It is generally more appropriate to refer to a market value weighted average result, as I do in reporting the average result for the proxy group of LDCs. However, two companies in the water company group, American Water Works and Aqua America, represent two-thirds of the market value of all companies in the water company group. Thus, referring to a market-weighted average result would effectively cause a market-weighted average result to depend primarily on the result for two companies, American Water Works and Aqua America, which, in this case, have higher than average DCF results than the smaller companies. I therefore conservatively use the 12.1 percent simple average rather than the 13.2 percent market-weighted average DCF result for the water companies to arrive at my recommendation in this proceeding.

Q. 55 You note above that you also apply your DCF method to a proxy group of LDCs. Why do you apply your DCF model to a proxy group of LDCs?

A. 55 I apply my DCF model to a proxy group of LDCs because: (1) the companies in the water company group are generally followed by only one or two analysts; (2) the LDCs are a conservative proxy for the risk of investing in water companies; and (3) it is useful to examine the cost of equity results for a larger group of companies of similar risk that have a wider following in the investment community in order to test the reasonableness of the results obtained by applying cost of equity methodologies to the small group of publicly-traded water companies. Financial theory does not require that companies be in exactly the same industry to be comparable in risk.

Q. 56 How do you select your proxy group of LDCs?

A. 56 I select all the companies in Value Line's natural gas industry groups that: (1) are in the business of natural gas distribution; (2) paid dividends during every quarter of the last two years; (3) did not decrease dividends during any quarter of the past two years; (4) have at least two analysts included in the I/B/E/S consensus growth forecast;[1] and (5) have not announced a merger. In addition, all of the LDCs included in my group have an investment grade bond rating and a Value Line Safety Rank of 1, 2, or 3. The LDCs in my DCF proxy group and the average DCF result are shown on Exhibit__(JVW-1), Schedule 2.

Q. 57 How are the LDCs similar to KAWC?

A. 57 Like KAWC, the LDCs are regulated public utilities that: (1) invest primarily in a capital-intensive physical network that connects the customer to the source of supply; and (2) sell their products and services at regulated rates to customers whose demand is primarily dependent on weather and the state of the economy.

Q. 58 Does your LDC proxy group meet the standards of the *Hope* and *Bluefield* cases you cite above?

A. 58 Yes. The *Hope* and *Bluefield* standard states that a public utility should be allowed to earn a return on its investment that is commensurate with the returns investors are able to earn on investments having similar risk. The LDCs are a group of companies that meet the standards of the *Hope* and *Bluefield* cases because they are a conservative proxy for the risk of investing in KAWC.

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1 As I note above, on the basis of my professional judgment, I normally specify that the I/B/E/S long-term earnings growth forecast must include the forecasts of at least three analysts. However, in December 2009 there are only five natural gas companies with growth forecasts from at least three analysts. In this study, therefore, I also include results for companies that have growth forecasts based on two analysts' growth forecasts.

Q. 59 Do you have any empirical evidence that the LDCs in your proxy group are a conservative proxy for KAWC?

A. 59 Yes. The average Value Line Safety Rank for my proxy group of LDCs is approximately 2, on a scale where 1 is the most safe and 5 is the least safe, whereas the water companies have an average Value Line Safety Rank of 3.

Q. 60 Please summarize the results of your application of the DCF method to the LDC proxy group.

A. 60 My application of the DCF method to the LDC proxy group produces a market-weighted average result of 11.8 percent, which is reduced to 11.4 percent when the 5.0 percent DCF result for Energen and the high 17.6 percent DCF result for MDU Resources are eliminated from the sample, as shown on Exhibit__(JVW-1), Schedule 2. I conservatively rely on the 11.4 percent result obtained from eliminating these outlier highest and lowest results.

VII. RISK PREMIUM APPROACH

Q. 61 Please describe the risk premium approach to estimating KAWC's cost of equity.

A. 61 The risk premium approach is based on the principle that investors expect to earn a return on an equity investment in KAWC that reflects a "premium" over and above the return they expect to earn on an investment in a portfolio of long-term bonds. This equity risk premium compensates equity investors for the additional risk they bear in making equity investments versus bond investments.

Q. 62 How do you measure the required risk premium on an equity investment in KAWC?

A. 62 I use two methods to estimate the required risk premium on an equity investment in KAWC. The first is called the ex ante risk premium method and the second is called the ex post risk premium method.

A. Ex Ante Risk Premium Approach

Q. 63 Please describe your ex ante risk premium approach for measuring the required risk premium on an equity investment in KAWC.

A. 63 My ex ante risk premium method is based on studies of the DCF expected return on a comparable group of natural gas distribution companies, which I compared to the interest rate on Moody's A-rated utility bonds. Specifically, for each month in my study period, I calculate the risk premium using the equation,

$$RP_{PROXY} = DCF_{PROXY} - I_A$$

where:

RP_{PROXY}	=	the required risk premium on an equity investment in the proxy group of companies;
DCF_{PROXY}	=	average DCF estimated cost of equity on a portfolio of proxy companies; and
I_A	=	the yield to maturity on an investment in A-rated utility bonds.

I then perform a regression analysis to determine if there is a relationship between the calculated risk premium and interest rates. Finally, I use the results of the regression analysis to estimate the investors' required risk premium. To estimate the cost of equity, I then add the required risk premium to the interest rate on A-rated utility bonds. A detailed description of my ex ante risk premium studies is contained in Appendix 4, and the underlying DCF results and interest rates are displayed in Exhibit__(JVW-1), Schedule 3.

Q. 64 Why do you apply your ex ante risk premium study to LDCs rather than to water companies?

A. 64 I apply my ex ante risk premium approach to LDCs rather than to water companies because the LDCs are similar in risk to the water companies and there is sufficient data to apply the DCF method to the sample companies over a relatively long period of time. In contrast, as discussed above, the water companies are generally followed by only one or two analysts, and there are relatively few companies with consistent data extending back for a reasonably long study period.

Q. 65 What estimated risk premium do you obtain from your ex ante risk premium method?

A. 65 As described in Appendix 4, my analyses produce an estimated risk premium over the yield on A-rated utility bonds equal to 4.9 percent.

Q. 66 What cost of equity result do you obtain from your ex ante risk premium study?

A. 66 To estimate the cost of equity using the ex ante risk premium method, one may add the estimated risk premium over the yield on A-rated utility bonds to the forecasted yield to maturity on A-rated utility bonds.[2] The forecasted yield to maturity on A-rated utility bonds, 6.3 percent, is obtained by adding Value Line's forecasted 50-basis point increase in the yield on AAA-rated corporate bonds over the period Q4 2009 to Q4 2010 to the 5.8 percent average yield on Moody's A-rated utility bonds in December 2009.[3] My analyses produce an estimated risk premium over the yield on A-rated utility bonds equal to 4.9 percent. Adding an estimated risk premium of 4.9 percent to the 6.3 percent yield to maturity on A-rated utility bonds produces a cost of equity estimate of 11.2 percent using the ex ante risk premium method (see Appendix 4).

B. Ex Post Risk Premium Approach

Q. 67 Please describe your ex post risk premium approach for measuring the required risk premium on an equity investment in KAWC.

A. 67 I first perform a study of the comparable returns received by bond and stock investors over the 72 years of my study. I estimate the returns on stock and bond portfolios using stock price and dividend yield data on

[2] One could use the yield to maturity on other debt investments to measure the interest rate component of the risk premium approach as long as one uses the yield on the same debt investment to measure the expected risk premium component of the risk premium approach. I choose to use the yield on A-rated utility bonds because it is a frequently-used benchmark for utility bond yields.

[3] Value Line Selection & Opinion, November 27, 2009, p. 3182.

the S&P 500 and bond yield data on Moody's A-rated utility bonds. My study consists of investing one dollar in the S&P 500 and Moody's A-rated utility bonds at the beginning of 1937 and reinvesting the principal plus return each year to 2009. The return associated with each stock portfolio is the sum of the annual dividend yield and capital gain (or loss) which accrue to this portfolio during the year(s) in which it is held. The return associated with the bond portfolio, on the other hand, is the sum of the annual coupon yield and capital gain (or loss) which accrue to the bond portfolio during the year(s) in which it is held. The resulting annual returns on the stock and bond portfolios purchased in each year between 1937 and 2009 are shown on Exhibit__(JVW-1), Schedule 4. The average annual return on an investment in the S&P 500 stock portfolio is 10.8 percent, while the average annual return on an investment in the Moody's A-rated utility bond portfolio is 6.3 percent. The risk premium on the S&P 500 stock portfolio is, therefore, 4.5 percent.

I also conduct a second study using stock data on the S&P Utilities rather than the S&P 500. The S&P Utility stock portfolio shows an average annual return of 10.5 percent per year. Thus, the return on the S&P Utility stock portfolio exceeded the return on the Moody's A–rated utility bond portfolio by 4.2 percent (see Exhibit__(JVW-1), Schedule 5).

Q. 68 Why is it appropriate to perform your ex post risk premium analysis using both the S&P 500 and the S&P Utility Stock indices?

A. 68 I perform my ex post risk premium analysis on both the S&P 500 and the S&P Utilities because I believe utilities today face risks that are somewhere in between the average risk of the S&P Utilities and the S&P 500 over the years 1937 to 2009. Thus, I use the average of the two historically-based risk premiums as my estimate of the required risk premium in my ex post risk premium method. I note that the spread between the average risk premium on the S&P 500 and the average risk premium on the S&P Utilities is just 30 basis points.

Q. 69 Why do you analyze investors' experiences over such a long time frame?

A. 69 Because day-to-day stock price movements can be somewhat random, it is inappropriate to rely on short-run movements in stock prices in order to derive a reliable risk premium. Rather than buying and selling frequently in anticipation of highly volatile price movements, most investors employ a strategy of buying and holding a diversified portfolio of stocks. This buy-and-hold strategy will allow an investor to achieve a much more predictable long-run return on stock investments and at the same time will minimize transaction costs. The situation is very similar to the problem of predicting the results of coin tosses. I cannot predict with any reasonable degree of accuracy the result of a single, or even a few, flips of a balanced coin; but I can predict with a good deal of confidence that approximately 50 heads will appear in 100 tosses of this coin. Under these circumstances, it is most appropriate to estimate future experience from long-run evidence of investment performance.

Q. 70 Would your study provide a different ex post risk premium if you started with a different time period?

A. 70 Yes, the ex post risk premium results vary somewhat depending on the historical time period chosen. My policy is to go back as far in history as I can get reliable data. I believe it is most meaningful to begin after the passage and implementation of the Public Utility Holding Company Act of 1935. This Act significantly changed the structure of the public utility industry. Since the Public Utility Holding Company Act of 1935 was not implemented until the beginning of 1937, I feel that numbers taken from before this date are not comparable to those taken after. (The repeal of the 1935 Act does not have a material impact on the structure of the public utility industry; thus, the Act's repeal does not have any impact on my choice of time period.)

Q. 71 Why is it necessary to examine the yield from debt investments in order to determine the investors' required rate of return on equity capital?

A. 71 As previously explained, investors expect to earn a return on their equity investment that exceeds currently available bond yields because the return on equity, being a residual return, is less certain than the yield on bonds and investors must be compensated for this uncertainty. Second, investors' current expectations concerning the amount by which the return on equity will exceed the bond yield will be influenced by historical differences in returns to bond and stock investors. For these reasons, we can estimate investors' current expected returns from an equity investment from knowledge of current bond yields and past differences between returns on stocks and bonds.

Q. 72 Has there been any significant trend in the ex post equity risk premium over the 1937 to 2009 time period of your study?

A. 72 No. Statisticians test for trends in data series by regressing the data observations against time. I have performed such a time series regression on my two data sets of historical risk premiums. As shown below in Tables 2 and 3, there is no statistically significant trend in my risk premium data. Indeed, the coefficient on the time variable is insignificantly different from zero (if there were a trend, the coefficient on the time variable should be significantly different from zero).

TABLE 2

REGRESSION OUTPUT FOR RISK PREMIUM ON S&P 500

Line No.		Intercept	Time	Adjusted R Square	F
1	Coefficient	3.096	(0.002)	0.023	2.66
2	T Statistic	1.654	(1.630)		

TABLE 3

REGRESSION OUTPUT FOR RISK PREMIUM ON S&P UTILITIES

Line No.		Intercept	Time	Adjusted R Square	F
1	Coefficient	1.383	(0.001)	-0.006	0.56
2	T Statistic	0.776	(0.751)		

Q. 73 Is your conclusion that there is no significant trend in the equity risk premium supported in the financial literature?

A. 73 Yes. Ibbotson® SBBI® 2009 Valuation Edition Yearbook Stocks, Bonds, Bills, and Inflation® ("Ibbotson® SBBI®") published by Morningstar, Inc., contains an analysis of "trends" in historical risk premium data. Ibbotson® SBBI® uses correlation analysis to determine if there is any pattern or "trend" in risk premiums over time. This analysis also demonstrates that there are no trends in risk premiums over time.

Q. 74 Why is it significant that historical risk premiums have no trend or other statistical pattern over time?

A. 74 The significance of this evidence is that the average historical risk premium is a reasonable estimate of the future expected risk premium. As noted in Ibbotson® SBBI®:

> The significance of this evidence is that the realized equity risk premium next year will not be dependent on the realized equity risk premium from this year. That is, there is no discernable pattern in the realized equity risk premium—it is virtually impossible to forecast next year's realized risk premium based on the premium of the previous year. For example, if this year's difference between the riskless rate and the return on the stock market is higher than last year's, that does not imply that next year's will be higher than this year's. It is as likely to be higher as it is lower. The best estimate of the expected value of a variable that has behaved randomly in the past is the average (or arithmetic mean) of its past values. [Ibbotson® SBBI®, page 61.]

Q. 75 What conclusions do you draw from your ex post risk premium analyses about the required return on an equity investment in KAWC?

A. 75 My studies provide strong evidence that investors today require an equity return of approximately 4.2 to 4.5 percentage points above the expected yield on A-rated utility bonds. The forecasted yield on A-rated utility bonds at 2010 is 6.3 percent. As described above, this forecasted yield to maturity on A-rated utility bonds is obtained by adding Value Line's forecasted 50-basis point increase in the yield on AAA-rated corporate bonds over the period Q4 2009 to Q4 2010 to the 5.8 percent average yield on Moody's A-rated utility bonds in December 2009. Adding a 4.2 to 4.5 percentage point risk premium to a yield of 6.3 percent on A-rated utility bonds, I obtain an expected return on equity in the range 10.5 percent to 10.8 percent, with a midpoint of 10.6 percent. Because the ex post methodology does not reflect flotation costs, I add a 19 basis-point allowance for flotation costs, which I determine by calculating the difference in my DCF results with and without a flotation cost allowance. Adding a 19 basis-point allowance for flotation costs, I obtain an estimate of 10.8 percent as the cost of equity for KAWC using the ex post risk premium method.

VIII. CAPITAL ASSET PRICING MODEL

Q. 76 What is the CAPM?

A. 76 The CAPM is an equilibrium model of the security markets in which the expected or required return on a given security is equal to the risk-free rate of interest, plus the company equity "beta," times the market risk premium:

Cost of equity = Risk-free rate + Equity beta x Market risk premium

The risk-free rate in this equation is the expected rate of return on a risk-free government security, the equity beta is a measure of the company's risk relative to the market as a whole, and the market risk premium is the premium investors require to invest in the market basket of all securities compared to the risk-free security.

Q. 77 How do you use the CAPM to estimate the cost of equity for your proxy companies?

A. 77 The CAPM requires an estimate of the risk-free rate, the company-specific risk factor or beta, and the expected return on the market portfolio. For my estimate of the risk-free rate, I use the forecast yield to maturity on 20-year Treasury bonds[4] of 4.7 percent, using data from Value Line.[5] For my estimate of the company-specific risk, or beta, I use the average Value Line beta of 0.73 for my proxy companies. For my estimate of the expected risk premium on the market portfolio, I use two approaches. First, I use the Ibbotson® SBBI® 6.5 percent risk premium on the market portfolio, which is measured from the difference between the arithmetic mean return on the S&P 500 (11.7 percent) and

4 I use the 20-year Treasury bond to estimate the risk-free rate because SBBI estimates the risk premium using 20-year Treasury bonds and the analyst should use the same maturity to estimate the risk-free rate as is used to estimate the risk premium on the market portfolio.

5 Value Line Investment Survey, Selection & Opinion, November 27, 2009, p. 3182. Value Line projects a 30-basis point increase in long-term Treasury bond yields over the period Q4 2009 to Q4 2010. Adding 30 basis points to the 4.4 percent average yield on 20-year Treasury bonds at December 2009 produces a forecasted yield of 4.7 percent.

the income return on 20-year Treasury bonds (5.2 percent), as reported by Ibbotson® SBBI® (11.7 – 5.2 = 6.5). Second, I estimate the risk premium on the market portfolio from the difference between the DCF cost of equity for the S&P 500 (13.1 percent) and the forecast yield to maturity on 20-year Treasury bonds, (4.70 percent). My second approach produces a risk premium equal to 8.4 percent (13.1 - 4.7 = 8.4).

Q. 78 Why do you recommend that the risk premium on the market portfolio be estimated using the arithmetic mean return on the S&P 500?

A. 78 As explained in Ibbotson® SBBI®, the arithmetic mean return is the best approach for calculating the return investors expect to receive in the future:

> The equity risk premium data presented in this book are arithmetic average risk premia as opposed to geometric average risk premia. The arithmetic average equity risk premium can be demonstrated to be most appropriate when discounting future cash flows. For use as the expected equity risk premium in either the CAPM or the building block approach, the arithmetic mean or the simple difference of the arithmetic means of stock market returns and riskless rates is the relevant number. This is because both the CAPM and the building block approach are additive models, in which the cost of capital is the sum of its parts. The geometric average is more appropriate for reporting past performance, since it represents the compound average return. [SBBI, p. 59.]

A discussion of the importance of using arithmetic mean returns in the context of CAPM or risk premium studies is contained in Schedule 6.

Q. 79 Why do you recommend that the risk premium on the market portfolio be estimated using the income return on 20-year Treasury bonds rather than the total return on these bonds?

A. 79 As discussed above, the CAPM requires an estimate of the risk-free rate of interest. When Treasury bonds are issued, the income return on the bond is risk free, but the total return, which includes both income and capital gains or losses, is not. Thus, the income return should be used in the CAPM because it is only the income return that is risk free.

Q. 80 What CAPM result do you obtain when you estimate the expected return on the market portfolio from the arithmetic mean difference between the return on the market and the yield on 20-year Treasury bonds?

A. 80 I obtain a CAPM estimate of 9.6 percent [see Schedule 7].

Q. 81 What CAPM result do you obtain when you estimate the risk premium on the market portfolio by applying the DCF model to the S&P 500?

A. 81 I obtain a CAPM result of 11.0 percent [see Schedule 8].

Q. 82 Can a reasonable application of the CAPM produce higher cost of equity results than you have just reported?

A. 82 Yes. The CAPM tends to underestimate the cost of equity for small market capitalization companies such as my water companies.[6]

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6 In addition, as discussed above, these estimates, based on current interest rates rather than forecasted rates, are conservative. If one were to use a forecasted interest rate on Treasury bonds, the CAPM cost of equity estimates would be significantly higher.

Q. 83 Does the finance literature support an adjustment to the CAPM equation to account for a company's size as measured by market capitalization supported in the finance literature?

A. 83 Yes. For example, Ibbotson® SBBI® supports such an adjustment. Their estimates of the size premium required to be added to the basic CAPM cost of equity are shown below in Table 4.

TABLE 4
IBBOTSON® ESTIMATES OF PREMIUMS FOR COMPANY SIZE[7]

Size	Smallest Mkt. Cap. ($Millions)	Premium
Large-Cap (No Adjustment)	>7,360.271	--
Mid-Cap	1,849.950	0.94%
Low-Cap	453.398	1.74%
Micro-Cap	1.575	3.74%

Q. 84 Are there other reasons to believe that the CAPM may produce cost of equity estimates at this time that are unreasonably low?

A. 84 Yes. There is considerable evidence in the finance literature that the CAPM tends to underestimate the cost of equity for companies whose equity beta is less than 1.0 and to overestimate the cost of equity for companies whose equity beta is greater than 1.0.[8]

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7 Ibbotson® SBBI® 2009 Valuation Yearbook.

8 *See*, for example, Fischer Black, Michael C. Jensen, and Myron Scholes, "The Capital Asset Pricing Model: Some Empirical Tests," in *Studies in the Theory of Capital Markets*, M. Jensen, ed. New York: Praeger, 1972; Eugene Fama and James MacBeth, "Risk, Return, and Equilibrium: Empirical Tests," *Journal of Political Economy* 81 (1973), pp. 607-36; Robert Litzenberger and Krishna Ramaswamy, "The Effect of Personal Taxes and Dividends on Capital Asset Prices: Theory and Empirical Evidence," *Journal of Financial Economics* 7 (1979), pp. 163-95.; Rolf Banz, "The Relationship between Return and Market Value of Common Stocks," *Journal of Financial Economics* (March 1981), pp. 3-18; and Eugene Fama and Kenneth French, "The Cross-Section of Expected Returns," *Journal of Finance* (June 1992), pp. 427-465.

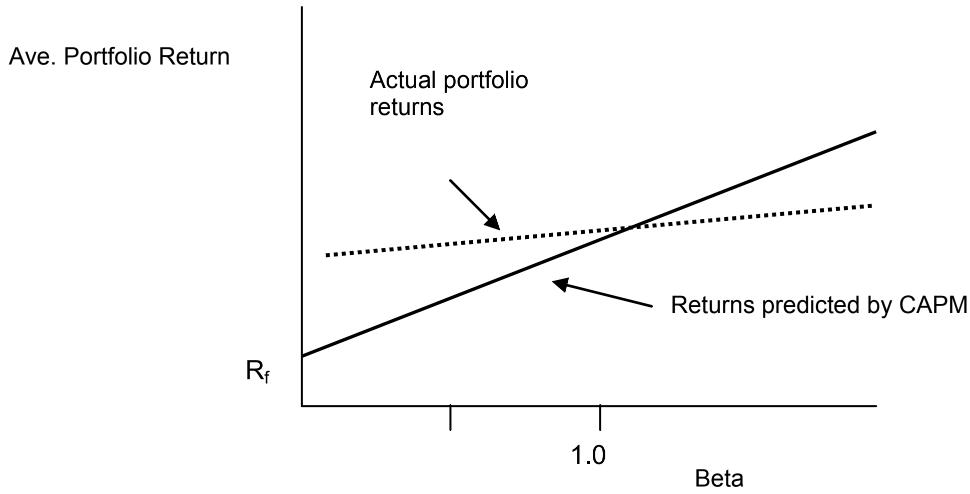
Q. 85 Can you briefly summarize the evidence that the CAPM underestimates the required returns for securities or portfolios with betas less than 1.0 and overestimates required returns for securities or portfolios with betas greater than 1.0?

A. 85 Yes. The CAPM conjectures that security returns increase with increases in security betas in line with the equation

$$ER_i = R_f + \beta_i \left[ER_m - R_f\right],$$

where ER_i is the expected return on security or portfolio *i*, R_f is the risk-free rate, $ER_m - R_f$ is the expected risk premium on the market portfolio, and β_i is a measure of the risk of investing in security or portfolio *i*. If the CAPM correctly predicts the relationship between risk and return in the marketplace, then the realized returns on portfolios of securities and the corresponding portfolio betas should lie on the solid straight line with intercept R_f and slope $[R_m - R_f]$ shown below.

Figure 1
Average Returns Compared to Beta for Portfolios Formed on Prior Beta



Financial scholars have found that the relationship between realized returns and betas is inconsistent with the relationship posited by the CAPM. As described in Fama and French (1992) and Fama and French (2004), the actual relationship between portfolio betas and returns is shown by the dotted line in the figure above. Although financial scholars disagree on the reasons why the return/beta relationship looks more like the dotted line in the figure than the solid line, they generally agree that the dotted line lies above the solid line for portfolios with betas less than 1.0 and below the solid line for portfolios with betas greater than 1.0. Thus, in practice, scholars generally agree that the CAPM underestimates portfolio returns for companies with betas less than 1.0, and overestimates portfolio returns for portfolios with betas greater than 1.0.

Q. 86 What conclusions do you reach from your review of the literature on the CAPM to predict the relationship between risk and return in the marketplace?

A. 86 I conclude that the financial literature strongly supports the proposition that the CAPM underestimates the cost of equity for companies such as public utilities with betas less than 1.0. I also conclude that the results of the CAPM should be given little or no weight in this proceeding because the average beta for my proxy group of water companies is significantly less than 1.0.

IX. FAIR RATE OF RETURN ON EQUITY

Q. 87 Please summarize your findings concerning KAWC's cost of equity.

A. 87 Based on my application of several cost of equity methods to my comparable companies, I conclude that my comparable companies' cost of equity is in the range 10.8 percent to 12.1 percent.

TABLE 5
COST OF EQUITY MODEL RESULTS

METHOD	MODEL RESULT
DCF--Water	12.1%
DCF--LDC	11.4%
Ex Ante Risk Premium	11.2%
Ex Post Risk Premium	10.8%
Range of Results	10.8% - 12.1%

Q. 88 What is your recommendation as to a fair rate of return on common equity for KAWC?

A. 88 I conservatively recommend that KAWC be allowed a fair rate of return on common equity in the range 10.8 percent to 12.1 percent. My recommended return on equity is conservative in that I use: (1) the lower simple average DCF result for the proxy water companies, even though a market-value weighted average is generally more appropriate for estimating the cost of equity; and (2) the lower average result for the LDC proxy group obtained by eliminating outlier low and high results.

Q. 89 Does this conclude your testimony?

A. 89 Yes, it does.

LIST OF SCHEDULES AND APPENDICES

Schedule 1	Summary of Discounted Cash Flow Analysis for Water Companies
Schedule 2	Summary of Discounted Cash Flow Analysis for Natural Gas Companies
Schedule 3	Comparison of the DCF Expected Return on an Investment in Natural Gas Companies to the Interest Rate on Moody's A-Rated Utility Bonds
Schedule 4	Comparative Returns on S&P 500 Stock Index and Moody's A-Rated Bonds 1937—2009
Schedule 5	Comparative Returns on S&P Utility Stock Index and Moody's A-Rated Bonds 1937—2009
Schedule 6	Using the Arithmetic Mean to Estimate the Cost of Equity Capital
Schedule 7	Calculation of Capital Asset Pricing Model Cost of Equity Using the Ibbotson® SBBI® 6.5 Percent Risk Premium
Schedule 8	Calculation of Capital Asset Pricing Model Cost of Equity Using DCF Estimate of the Expected Rate of Return on the Market Portfolio
Appendix 1	Qualifications of James H. Vander Weide
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Appendix 4	Ex Ante Risk Premium Method
Appendix 5	Ex Post Risk Premium Method

KENTUCKY AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 1
SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS
FOR PROXY WATER COMPANY COMPANIES

LINE NO.	COMPANY	D_4	3-MO. AVE. PRICE	I/B/E/S GROWTH	VALUE LINE FORECASTED OR REPORTED EPS GROWTH	AVERAGE GROWTH	MARKET VALUE	COST OF EQUITY
1	Amer. States Water	0.250	34.367	4.00%	9.50%	6.8%	581	10.1%
2	Amer. Water Works	0.210	20.783	9.88%		9.9%	3,278	14.7%
3	Aqua America	0.145	16.528	7.00%	10%	8.5%	2,803	12.5%
4	Artesian Res. 'A'	0.187	16.938	5.00%		5.0%	104	9.9%
5	California Water	0.295	37.225	10.00%	9%	9.5%	938	13.3%
6	Connecticut Water	0.228	23.383		9.00%	9.0%	197	13.6%
7	Middlesex Water	0.180	16.175	8.00%	7.50%	7.8%	228	13.0%
8	Pennichuck	0.175	22.650	9.00%		9.0%	85	12.7%
9	SJW Corp.	0.165	22.173	10.00%	10%	10.0%	542	13.6%
10	Southwest Water	0.050	5.728	5.00%		5.0%	87	7.5%
11	York Water	0.126	14.463	8.00%	7.50%	7.8%	134	11.9%
12	Average[9]							12.1%
13	Market-weighted Average							13.2%

Notes:

d_0	=	Most recent quarterly dividend.
d_1, d_2, d_3, d_4	=	Next four quarterly dividends, calculated by multiplying the last four quarterly dividends per *Value Line* by the factor (1 + g).
P_0	=	Average of the monthly high and low stock prices during the three months ending December 2009 per Thomson Reuters.
FC	=	Flotation costs expressed as a percent of gross proceeds.
g	=	Average of I/B/E/S and Value Line forecasts of future earnings growth December 2009.
k	=	Cost of equity using the quarterly version of the DCF model shown by the formula below:

$$k = \frac{d_1(1+k)^{.75} + d_2(1+k)^{.50} + d_3(1+k)^{.25} + d_4}{P_0(1-FC)} + g$$

[9] It is generally more appropriate to refer to a market value weighted average result, as I do in reporting the average result for the proxy group of LDCs. However, two companies in the water company group, American Water Works and Aqua America, represent two-thirds of the market value of all companies in the water company group. Thus, referring to a market-weighted average result would effectively cause a market-weighted average result to depend primarily on the result for two companies, American Water Works and Aqua America, which, in this case, have higher than average DCF results than the smaller companies. I therefore conservatively use the 12.1 percent simple average rather than the 13.2 percent market-weighted average DCF result for the water companies to arrive at my recommendation in this proceeding.

KENTUCKY AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 2
SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS
FOR NATURAL GAS DISTRIBUTION COMPANIES

LINE NO.	COMPANY	D_0	P_0	GROWTH	MARKET CAP $ (MIL)	COST OF EQUITY
1	AGL Resources	0.430	35.490	4.25%	2,414	9.8%
2	Atmos Energy	0.335	28.529	5.00%	2,183	10.3%
3	Energen Corp.	0.125	45.011	3.75%	2,323	5.0%
4	EQT Corp.	0.220	42.813	11.67%	4,703	14.2%
5	MDU Resources	0.158	21.835	14.00%	4,136	17.6%
6	Nicor Inc.	0.465	38.953	2.85%	1,557	8.2%
7	NiSource Inc.	0.230	14.095	3.00%	3,063	10.3%
8	Northwest Nat. Gas	0.415	43.448	4.75%	1,153	8.9%
9	ONEOK Inc.	0.420	39.124	9.07%	3,218	14.1%
10	Piedmont Natural Gas	0.270	24.313	7.87%	2,234	13.2%
11	Questar Corp.	0.130	40.215	9.00%	6,330	10.5%
12	Southwest Gas	0.238	26.530	6.00%	1,113	10.1%
13	Market-weighted Average					11.8%
14	Eliminate highest & lowest					11.4%

Notes:

d_0	=	Most recent quarterly dividend.
d_1,d_2,d_3,d_4	=	Next four quarterly dividends, calculated by multiplying the last four quarterly dividends per *Value Line* by the factor (1 + g).
P_0	=	Average of the monthly high and low stock prices during the three months ending December 2009 from Thomson Reuters.
FC	=	Flotation costs expressed as a percent of gross proceeds.
g	=	I/B/E/S forecast of future earnings growth December 2009.
k	=	Cost of equity using the quarterly version of the DCF model shown by the formula below:

$$k = \frac{d_1(1+k)^{.75} + d_2(1+k)^{.50} + d_3(1+k)^{.25} + d_4}{P_0(1-FC)} + g$$

KENTUCKY AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 3
COMPARISON OF DCF EXPECTED RETURN
ON AN EQUITY INVESTMENT IN NATURAL GAS DISTRIBUTION COMPANIES
TO THE INTEREST RATE ON A-RATED UTILITY BONDS

Line No.	Date	DCF	Bond Yield	Risk Premium
1	Jun-98	0.1154	0.0703	0.0451
2	Jul-98	0.1186	0.0703	0.0483
3	Aug-98	0.1234	0.0700	0.0534
4	Sep-98	0.1273	0.0693	0.0580
5	Oct-98	0.1260	0.0696	0.0564
6	Nov-98	0.1211	0.0703	0.0508
7	Dec-98	0.1185	0.0691	0.0494
8	Jan-99	0.1195	0.0697	0.0498
9	Feb-99	0.1243	0.0709	0.0534
10	Mar-99	0.1257	0.0726	0.0531
11	Apr-99	0.1260	0.0722	0.0538
12	May-99	0.1221	0.0747	0.0474
13	Jun-99	0.1208	0.0774	0.0434
14	Jul-99	0.1222	0.0771	0.0451
15	Aug-99	0.1220	0.0791	0.0429
16	Sep-99	0.1226	0.0793	0.0433
17	Oct-99	0.1233	0.0806	0.0427
18	Nov-99	0.1240	0.0794	0.0446
19	Dec-99	0.1280	0.0814	0.0466
20	Jan-00	0.1301	0.0835	0.0466
21	Feb-00	0.1344	0.0825	0.0519
22	Mar-00	0.1344	0.0828	0.0516
23	Apr-00	0.1316	0.0829	0.0487
24	May-00	0.1292	0.0870	0.0422
25	Jun-00	0.1295	0.0836	0.0459
26	Jul-00	0.1317	0.0825	0.0492
27	Aug-00	0.1290	0.0813	0.0477
28	Sep-00	0.1257	0.0823	0.0434
29	Oct-00	0.1260	0.0814	0.0446
30	Nov-00	0.1251	0.0811	0.0440
31	Dec-00	0.1239	0.0784	0.0455
32	Jan-01	0.1261	0.0780	0.0481
33	Feb-01	0.1261	0.0774	0.0487
34	Mar-01	0.1275	0.0768	0.0507

Line No.	Date	DCF	Bond Yield	Risk Premium
35	Apr-01	0.1227	0.0794	0.0433
36	May-01	0.1302	0.0799	0.0503
37	Jun-01	0.1304	0.0785	0.0519
38	Jul-01	0.1338	0.0778	0.0560
39	Aug-01	0.1327	0.0759	0.0568
40	Sep-01	0.1268	0.0775	0.0493
41	Oct-01	0.1268	0.0763	0.0505
42	Nov-01	0.1268	0.0757	0.0511
43	Dec-01	0.1254	0.0783	0.0471
44	Jan-02	0.1236	0.0766	0.0470
45	Feb-02	0.1241	0.0754	0.0487
46	Mar-02	0.1189	0.0776	0.0413
47	Apr-02	0.1159	0.0757	0.0402
48	May-02	0.1162	0.0752	0.0410
49	Jun-02	0.1170	0.0741	0.0429
50	Jul-02	0.1242	0.0731	0.0511
51	Aug-02	0.1234	0.0717	0.0517
52	Sep-02	0.1260	0.0708	0.0552
53	Oct-02	0.1250	0.0723	0.0527
54	Nov-02	0.1221	0.0714	0.0507
55	Dec-02	0.1216	0.0707	0.0509
56	Jan-03	0.1219	0.0706	0.0513
57	Feb-03	0.1232	0.0693	0.0539
58	Mar-03	0.1195	0.0679	0.0516
59	Apr-03	0.1162	0.0664	0.0498
60	May-03	0.1126	0.0636	0.0490
61	Jun-03	0.1114	0.0621	0.0493
62	Jul-03	0.1127	0.0657	0.0470
63	Aug-03	0.1139	0.0678	0.0461
64	Sep-03	0.1127	0.0656	0.0471
65	Oct-03	0.1123	0.0643	0.0480
66	Nov-03	0.1089	0.0637	0.0452
67	Dec-03	0.1071	0.0627	0.0444
68	Jan-04	0.1059	0.0615	0.0444
69	Feb-04	0.1039	0.0615	0.0424
70	Mar-04	0.1037	0.0597	0.0440
71	Apr-04	0.1041	0.0635	0.0406
72	May-04	0.1045	0.0662	0.0383
73	Jun-04	0.1036	0.0646	0.0390

Line No.	Date	DCF	Bond Yield	Risk Premium
74	Jul-04	0.1011	0.0627	0.0384
75	Aug-04	0.1008	0.0614	0.0394
76	Sep-04	0.0976	0.0598	0.0378
77	Oct-04	0.0974	0.0594	0.0380
78	Nov-04	0.0962	0.0597	0.0365
79	Dec-04	0.0970	0.0592	0.0378
80	Jan-05	0.0990	0.0578	0.0412
81	Feb-05	0.0979	0.0561	0.0418
82	Mar-05	0.0979	0.0583	0.0396
83	Apr-05	0.0988	0.0564	0.0424
84	May-05	0.0981	0.0553	0.0427
85	Jun-05	0.0976	0.0540	0.0436
86	Jul-05	0.0966	0.0551	0.0415
87	Aug-05	0.0969	0.0550	0.0419
88	Sep-05	0.0980	0.0552	0.0428
89	Oct-05	0.0990	0.0579	0.0411
90	Nov-05	0.1049	0.0588	0.0461
91	Dec-05	0.1045	0.0580	0.0465
92	Jan-06	0.0982	0.0575	0.0407
93	Feb-06	0.1124	0.0582	0.0542
94	Mar-06	0.1127	0.0598	0.0529
95	Apr-06	0.1100	0.0629	0.0471
96	May-06	0.1056	0.0642	0.0414
97	Jun-06	0.1049	0.0640	0.0409
98	Jul-06	0.1087	0.0637	0.0450
99	Aug-06	0.1041	0.0620	0.0421
100	Sep-06	0.1053	0.0600	0.0453
101	Oct-06	0.1030	0.0598	0.0432
102	Nov-06	0.1033	0.0580	0.0453
103	Dec-06	0.1035	0.0581	0.0454
104	Jan-07	0.1013	0.0596	0.0417
105	Feb-07	0.1018	0.0590	0.0428
106	Mar-07	0.1018	0.0585	0.0433
107	Apr-07	0.1007	0.0597	0.0410
108	May-07	0.0967	0.0599	0.0368
109	Jun-07	0.0970	0.0630	0.0340
110	Jul-07	0.1006	0.0625	0.0381
111	Aug-07	0.1021	0.0624	0.0397
112	Sep-07	0.1014	0.0618	0.0396

Line No.	Date	DCF	Bond Yield	Risk Premium
113	Oct-07	0.1080	0.0611	0.0469
114	Nov-07	0.1083	0.0597	0.0486
115	Dec-07	0.1084	0.0616	0.0468
116	Jan-08	0.1113	0.0602	0.0511
117	Feb-08	0.1139	0.0621	0.0518
118	Mar-08	0.1147	0.0621	0.0526
119	Apr-08	0.1167	0.0629	0.0538
120	May-08	0.1069	0.0627	0.0442
121	Jun-08	0.1062	0.0638	0.0424
122	Jul-08	0.1086	0.0640	0.0446
123	Aug-08	0.1123	0.0637	0.0486
124	Sep-08	0.1130	0.0649	0.0481
125	Oct-08	0.1213	0.0756	0.0457
126	Nov-08	0.1221	0.0760	0.0461
127	Dec-08	0.1162	0.0654	0.0508
128	Jan-09	0.1131	0.0639	0.0492
129	Feb-09	0.1155	0.0630	0.0524
130	Mar-09	0.1198	0.0642	0.0556
131	Apr-09	0.1146	0.0648	0.0498
132	May-09	0.1225	0.0649	0.0576
133	Jun-09	0.1208	0.0620	0.0588
134	Jul-09	0.1145	0.0597	0.0548
135	Aug-09	0.1109	0.0571	0.0538
136	Sep-09	0.1109	0.0553	0.0556
137	Oct-09	0.1146	0.0555	0.0592
138	Nov-09	0.1148	0.0564	0.0584
139	Dec-09	0.1123	0.0579	0.0544

Notes: A-rated utility bond yield information from the Mergent Bond Record. DCF results are calculated using a quarterly DCF model as follows:

D_0 = Latest quarterly dividend per *Value Line*.
P_0 = Average of the monthly high and low stock prices for each month from Thomson Reuters.
FC = Flotation costs expressed as a percent of gross proceeds.
g = I/B/E/S forecast of future earnings growth for each month.
k = Cost of equity using the quarterly version of the DCF model shown by the formula below:

$$k = \left[\frac{d_0 (1+g)^{\frac{1}{4}}}{P_0} \right]^4 - 1$$

**KENTUCKY AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 4
COMPARATIVE RETURNS ON S&P 500 STOCK INDEX
AND MOODY'S A-RATED BONDS 1937 – 2008**

Line No.	Year	S&P 500 Stock Price	Stock Dividend Yield	Stock Return	A-rated Bond Price	Bond Return
1	2009	865.58	0.0310		$68.43	
2	2008	1,380.33	0.0211	-35.19%	$72.25	0.24%
3	2007	1,424.16	0.0181	-1.27%	$72.91	4.59%
4	2006	1,278.72	0.0183	13.20%	$75.25	2.20%
5	2005	1,181.41	0.0177	10.01%	$74.91	5.80%
6	2004	1,132.52	0.0162	5.94%	$70.87	11.34%
7	2003	895.84	0.0180	28.22%	$62.26	20.27%
8	2002	1,140.21	0.0138	-20.05%	$57.44	15.35%
9	2001	1,335.63	0.0116	-13.47%	$56.40	8.93%
10	2000	1,425.59	0.0118	-5.13%	$52.60	14.82%
11	1999	1,248.77	0.0130	15.46%	$63.03	-10.20%
12	1998	963.35	0.0162	31.25%	$62.43	7.38%
13	1997	766.22	0.0195	27.68%	$56.62	17.32%
14	1996	614.42	0.0231	27.02%	$60.91	-0.48%
15	1995	465.25	0.0287	34.93%	$50.22	29.26%
16	1994	472.99	0.0269	1.05%	$60.01	-9.65%
17	1993	435.23	0.0288	11.56%	$53.13	20.48%
18	1992	416.08	0.0290	7.50%	$49.56	15.27%
19	1991	325.49	0.0382	31.65%	$44.84	19.44%
20	1990	339.97	0.0341	-0.85%	$45.60	7.11%
21	1989	285.41	0.0364	22.76%	$43.06	15.18%
22	1988	250.48	0.0366	17.61%	$40.10	17.36%
23	1987	264.51	0.0317	-2.13%	$48.92	-9.84%
24	1986	208.19	0.0390	30.95%	$39.98	32.36%
25	1985	171.61	0.0451	25.83%	$32.57	35.05%
26	1984	166.39	0.0427	7.41%	$31.49	16.12%
27	1983	144.27	0.0479	20.12%	$29.41	20.65%
28	1982	117.28	0.0595	28.96%	$24.48	36.48%
29	1981	132.97	0.0480	-7.00%	$29.37	-3.01%
30	1980	110.87	0.0541	25.34%	$34.69	-3.81%
31	1979	99.71	0.0533	16.52%	$43.91	-11.89%
32	1978	90.25	0.0532	15.80%	$49.09	-2.40%
33	1977	103.80	0.0399	-9.06%	$50.95	4.20%
34	1976	96.86	0.0380	10.96%	$43.91	25.13%
35	1975	72.56	0.0507	38.56%	$41.76	14.75%
36	1974	96.11	0.0364	-20.86%	$52.54	-12.91%
37	1973	118.40	0.0269	-16.14%	$58.51	-3.37%
38	1972	103.30	0.0296	17.58%	$56.47	10.69%

Line No.	Year	S&P 500 Stock Price	Stock Dividend Yield	Stock Return	A-rated Bond Price	Bond Return
39	1971	93.49	0.0332	13.81%	$53.93	12.13%
40	1970	90.31	0.0356	7.08%	$50.46	14.81%
41	1969	102.00	0.0306	-8.40%	$62.43	-12.76%
42	1968	95.04	0.0313	10.45%	$66.97	-0.81%
43	1967	84.45	0.0351	16.05%	$78.69	-9.81%
44	1966	93.32	0.0302	-6.48%	$86.57	-4.48%
45	1965	86.12	0.0299	11.35%	$91.40	-0.91%
46	1964	76.45	0.0305	15.70%	$92.01	3.68%
47	1963	65.06	0.0331	20.82%	$93.56	2.61%
48	1962	69.07	0.0297	-2.84%	$89.60	8.89%
49	1961	59.72	0.0328	18.94%	$89.74	4.29%
50	1960	58.03	0.0327	6.18%	$84.36	11.13%
51	1959	55.62	0.0324	7.57%	$91.55	-3.49%
52	1958	41.12	0.0448	39.74%	$101.22	-5.60%
53	1957	45.43	0.0431	-5.18%	$100.70	4.49%
54	1956	44.15	0.0424	7.14%	$113.00	-7.35%
55	1955	35.60	0.0438	28.40%	$116.77	0.20%
56	1954	25.46	0.0569	45.52%	$112.79	7.07%
57	1953	26.18	0.0545	2.70%	$114.24	2.24%
58	1952	24.19	0.0582	14.05%	$113.41	4.26%
59	1951	21.21	0.0634	20.39%	$123.44	-4.89%
60	1950	16.88	0.0665	32.30%	$125.08	1.89%
61	1949	15.36	0.0620	16.10%	$119.82	7.72%
62	1948	14.83	0.0571	9.28%	$118.50	4.49%
63	1947	15.21	0.0449	1.99%	$126.02	-2.79%
64	1946	18.02	0.0356	-12.03%	$126.74	2.59%
65	1945	13.49	0.0460	38.18%	$119.82	9.11%
66	1944	11.85	0.0495	18.79%	$119.82	3.34%
67	1943	10.09	0.0554	22.98%	$118.50	4.49%
68	1942	8.93	0.0788	20.87%	$117.63	4.14%
69	1941	10.55	0.0638	-8.98%	$116.34	4.55%
70	1940	12.30	0.0458	-9.65%	$112.39	7.08%
71	1939	12.50	0.0349	1.89%	$105.75	10.05%
72	1938	11.31	0.0784	18.36%	$99.83	9.94%
73	1937	17.59	0.0434	-31.36%	$103.18	0.63%
74	S&P 500 Return 1937--2009		10.8%			
75	A-rated Utility Bond Return		6.3%			
76	Risk Premium		4.5%			

Note: See Appendix 4 for an explanation of how stock and bond returns are derived and the source of the data presented.

KENTUCKY AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 5
COMPARATIVE RETURNS ON S&P UTILITY STOCK INDEX
AND MOODY'S A-RATED BONDS 1937 – 2008

Line No.	Year	S&P Utility Stock Price	Stock Dividend Yield	Stock Return	A-rated Bond Yield	Bond Return
1	2009				$68.43	
2	2008			-25.90%	$72.25	0.24%
3	2007			16.56%	$72.91	4.59%
4	2006			20.76%	$75.25	2.20%
5	2005			16.05%	$74.91	5.80%
6	2004			22.84%	$70.87	11.34%
7	2003			23.48%	$62.26	20.27%
8	2002			-14.73%	$57.44	15.35%
9						
10	2002	243.79	0.0362		$57.44	
11	2001	307.70	0.0287	-17.90%	$56.40	8.93%
12	2000	239.17	0.0413	32.78%	$52.60	14.82%
13	1999	253.52	0.0394	-1.72%	$63.03	-10.20%
14	1998	228.61	0.0457	15.47%	$62.43	7.38%
15	1997	201.14	0.0492	18.58%	$56.62	17.32%
16	1996	202.57	0.0454	3.83%	$60.91	-0.48%
17	1995	153.87	0.0584	37.49%	$50.22	29.26%
18	1994	168.70	0.0496	-3.83%	$60.01	-9.65%
19	1993	159.79	0.0537	10.95%	$53.13	20.48%
20	1992	149.70	0.0572	12.46%	$49.56	15.27%
21	1991	138.38	0.0607	14.25%	$44.84	19.44%
22	1990	146.04	0.0558	0.33%	$45.60	7.11%
23	1989	114.37	0.0699	34.68%	$43.06	15.18%
24	1988	106.13	0.0704	14.80%	$40.10	17.36%
25	1987	120.09	0.0588	-5.74%	$48.92	-9.84%
26	1986	92.06	0.0742	37.87%	$39.98	32.36%
27	1985	75.83	0.0860	30.00%	$32.57	35.05%
28	1984	68.50	0.0925	19.95%	$31.49	16.12%
29	1983	61.89	0.0948	20.16%	$29.41	20.65%
30	1982	51.81	0.1074	30.20%	$24.48	36.48%
31	1981	52.01	0.0978	9.40%	$29.37	-3.01%
32	1980	50.26	0.0953	13.01%	$34.69	-3.81%
33	1979	50.33	0.0893	8.79%	$43.91	-11.89%
34	1978	52.40	0.0791	3.96%	$49.09	-2.40%
35	1977	54.01	0.0714	4.16%	$50.95	4.20%
36	1976	46.99	0.0776	22.70%	$43.91	25.13%
37	1975	38.19	0.0920	32.24%	$41.76	14.75%
38	1974	48.60	0.0713	-14.29%	$52.54	-12.91%
39	1973	60.01	0.0556	-13.45%	$58.51	-3.37%
40	1972	60.19	0.0542	5.12%	$56.47	10.69%
41	1971	63.43	0.0504	-0.07%	$53.93	12.13%
42	1970	55.72	0.0561	19.45%	$50.46	14.81%
43	1969	68.65	0.0445	-14.38%	$62.43	-12.76%
44	1968	68.02	0.0435	5.28%	$66.97	-0.81%
45	1967	70.63	0.0392	0.22%	$78.69	-9.81%

Line No.	Year	S&P Utility Stock Price	Stock Dividend Yield	Stock Return	A-rated Bond Yield	Bond Return
46	1966	74.50	0.0347	-1.72%	$86.57	-4.48%
47	1965	75.87	0.0315	1.34%	$91.40	-0.91%
48	1964	67.26	0.0331	16.11%	$92.01	3.68%
49	1963	63.35	0.0330	9.47%	$93.56	2.61%
50	1962	62.69	0.0320	4.25%	$89.60	8.89%
51	1961	52.73	0.0358	22.47%	$89.74	4.29%
52	1960	44.50	0.0403	22.52%	$84.36	11.13%
53	1959	43.96	0.0377	5.00%	$91.55	-3.49%
54	1958	33.30	0.0487	36.88%	$101.22	-5.60%
55	1957	32.32	0.0487	7.90%	$100.70	4.49%
56	1956	31.55	0.0472	7.16%	$113.00	-7.35%
57	1955	29.89	0.0461	10.16%	$116.77	0.20%
58	1954	25.51	0.0520	22.37%	$112.79	7.07%
59	1953	24.41	0.0511	9.62%	$114.24	2.24%
60	1952	22.22	0.0550	15.36%	$113.41	4.26%
61	1951	20.01	0.0606	17.10%	$123.44	-4.89%
62	1950	20.20	0.0554	4.60%	$125.08	1.89%
63	1949	16.54	0.0570	27.83%	$119.82	7.72%
64	1948	16.53	0.0535	5.41%	$118.50	4.49%
65	1947	19.21	0.0354	-10.41%	$126.02	-2.79%
66	1946	21.34	0.0298	-7.00%	$126.74	2.59%
67	1945	13.91	0.0448	57.89%	$119.82	9.11%
68	1944	12.10	0.0569	20.65%	$119.82	3.34%
69	1943	9.22	0.0621	37.45%	$118.50	4.49%
70	1942	8.54	0.0940	17.36%	$117.63	4.14%
71	1941	13.25	0.0717	-28.38%	$116.34	4.55%
72	1940	16.97	0.0540	-16.52%	$112.39	7.08%
73	1939	16.05	0.0553	11.26%	$105.75	10.05%
74	1938	14.30	0.0730	19.54%	$99.83	9.94%
75	1937	24.34	0.0432	-36.93%	$103.18	0.63%
76	Return 1937—2009	Stocks	10.5%			
77		Bonds	6.3%			
78	Risk Premium		4.2%			

See Appendix 5 for an explanation of how stock and bond returns are derived and the source of the data presented. Standard & Poor's discontinued its S&P Utilities Index in December 2001 and replaced its utilities stock index with separate indices for electric and natural gas utilities. In this study, the stock returns beginning in 2002 are based on the total returns for the EEI Index of U.S. shareholder-owned electric utilities, as reported by EEI on its website.
http://www.eei.org/industry_issues/finance_and_accounting/finance/research_and_analysis/EEI_Stock_Index

KENTUCKY AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 6
USING THE ARITHMETIC MEAN TO ESTIMATE
THE COST OF EQUITY CAPITAL

Consider an investment that in a given year generates a return of 30 percent with probability equal to .5 and a return of -10 percent with a probability equal to .5. For each one dollar invested, the possible outcomes of this investment at the end of year one are:

Ending Wealth	Probability
$1.30	0.50
$0.90	0.50

At the end of year two, the possible outcomes are:

Ending Wealth			Probability	Value x Probability
(1.30) (1.30)	=	$1.69	0.25	0.4225
(1.30) (.9)	=	$1.17	0.50	0.5850
(.9) (.9)	=	$0.81	0.25	0.2025
Expected Wealth	=			$1.21

The expected value of this investment at the end of year two is $1.21. In a competitive capital market, the cost of equity is equal to the expected rate of return on an investment. In the above example, the cost of equity is that rate of return which will make the initial investment of one dollar grow to the expected value of $1.21 at the end of two years. Thus, the cost of equity is the solution to the equation:

$$1(1+k)^2 = 1.21 \text{ or}$$

$$k = (1.21/1)^{.5} - 1 = 10\%.$$

The arithmetic mean of this investment is:

$$(30\%)\ (.5) + (-10\%)\ (.5) = 10\%.$$

Thus, the arithmetic mean is equal to the cost of equity capital.

The geometric mean of this investment is:

$$[(1.3)\ (.9)]^{.5} - 1 = .082 = 8.2\%.$$

Thus, the geometric mean is not equal to the cost of equity capital.

The lesson is obvious: for an investment with an uncertain outcome, the arithmetic mean is the best measure of the cost of equity capital.

KENTUCKY AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 7
CALCULATION OF CAPITAL ASSET PRICING MODEL COST OF EQUITY
USING THE IBBOTSON® SBBI® 7.1 PERCENT RISK PREMIUM

Risk-free Rate	4.70%	-Long-term Treasury bond yield
Beta	0.73	Average Beta Comparable Water Companies
Risk Premium	6.50%	Long-horizon SBBI risk premium
Beta x Risk Premium	4.75%	
Flotation	0.19%	
CAPM cost of equity	9.6%	

Ibbotson SBBI risk premium from 2009 Ibbotson® SBBI® Stocks, Bonds, Bills, and Inflation® Valuation Yearbook; Value Line beta for comparable companies from Value Line December 2009. Forecast 20-year Treasury bond yield from Value Line Selection & Opinion, November 27, 2009.

COMPARABLE COMPANY BETAS

Line No.	Company	Value Line Beta	Market Value
1	Amer. States Water	0.80	581
2	Amer. Water Works	NA	3,278
3	Aqua America	0.65	2,803
4	Artesian Res. 'A'	0.60	104
5	California Water	0.75	938
6	Connecticut Water	0.85	197
7	Middlesex Water	0.80	228
8	Pennichuck	0.55	85
9	SJW Corp.	0.95	542
10	Southwest Water	1.10	87
11	York Water	0.65	134
12	Average	0.77	
13	Market-weighted Average	0.73	

Data from Value Line December 2009.

KENTUCKY AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 8
CALCULATION OF CAPITAL ASSET PRICING MODEL COST OF EQUITY
USING DCF ESTIMATE OF THE EXPECTED RATE OF RETURN
ON THE MARKET PORTFOLIO

Line No.			
1	Risk-free Rate	4.70%	20-year Treasury Bond Yield
2	Beta	0.73	Average Beta Comparable Water Companies
3	DCF S&P 500	13.1%	DCF Cost of Equity S&P 500 (see following)
4	Risk Premium	8.40%	
5	Beta * Risk Premium	6.13%	
6	Flotation cost	0.19%	
7	Cost of Equity	11.0%	

Value Line beta for comparable companies from Value Line December 2009. Forecast 20-year Treasury bond yield from Value Line Selection & Opinion, November 27, 2009.

KENTUCKY AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 8 (CONTINUED)
CALCULATION OF CAPITAL ASSET PRICING MODEL COST OF EQUITY
USING DCF ESTIMATE OF THE EXPECTED RATE OF RETURN
ON THE MARKET PORTFOLIO
SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS FOR S&P 500 COMPANIES

COMPANY	P_0	D_0	GROWTH	COST OF EQUITY
3M	77.26	2.04	11.30%	14.3%
ABERCROMBIE & FITCH	36.05	0.70	11.21%	13.4%
AETNA	28.76	0.04	14.00%	14.2%
AIR PRDS.& CHEMS.	80.82	1.80	9.47%	11.9%
AIRGAS	47.16	0.72	12.31%	14.0%
ALLERGAN	58.53	0.20	14.40%	14.8%
AMERICAN EXPRESS	37.79	0.72	10.25%	12.4%
AMERISOURCEBERGEN	23.88	0.32	11.50%	13.0%
APPLIED MATS.	12.86	0.24	12.00%	14.1%
ASSURANT	30.70	0.60	11.25%	13.4%
AT&T	26.72	1.68	7.17%	14.1%
AVERY DENNISON	37.18	0.80	9.00%	11.4%
BANK OF NEW YORK MELLON	27.52	0.36	10.83%	12.3%
BAXTER INTL.	56.24	1.16	12.30%	14.6%
BECTON DICKINSON	72.21	1.48	12.67%	15.0%
BEMIS	28.13	0.90	9.50%	13.0%
BEST BUY	40.79	0.56	12.64%	14.2%
BURL.NTHN.SANTA FE C	88.92	1.60	12.86%	14.9%
CA	22.18	0.16	11.60%	12.4%
CAPITAL ONE FINL.	38.36	0.20	11.00%	11.6%
CATERPILLAR	56.60	1.68	11.50%	14.8%
CHESAPEAKE ENERGY	25.48	0.30	11.33%	12.6%
CHUBB	50.10	1.40	10.00%	13.1%
CINTAS	28.47	0.47	10.83%	12.7%
CLOROX	59.86	2.00	9.75%	13.5%
COCA COLA	55.86	1.64	8.21%	11.4%
COLGATE-PALM.	81.34	1.76	10.40%	12.8%
COMCAST 'A'	15.51	0.38	12.42%	15.2%
CORNING	16.33	0.20	13.00%	14.4%
COSTCO WHOLESALE	58.73	0.72	13.07%	14.5%
DANAHER	70.98	0.16	12.25%	12.5%
DEERE	49.66	1.12	9.00%	11.5%
DENTSPLY INTL.	34.25	0.20	13.80%	14.5%
DOMINION RES.	36.09	1.75	8.16%	13.5%
EATON	62.78	2.00	9.00%	12.5%
ECOLAB	45.22	0.62	12.78%	14.3%
ELI LILLY	35.22	1.96	5.93%	12.0%
ENTERGY	79.68	3.00	10.42%	14.6%
EQT	42.81	0.88	11.67%	14.0%
ESTEE LAUDER COS.'A'	45.11	0.55	11.00%	12.4%
EXELON	48.71	2.10	8.44%	13.2%
FAMILY DOLLAR STORES	29.09	0.54	11.80%	13.9%

COMPANY	P_0	D_0	GROWTH	COST OF EQUITY
FEDERATED INVRS.'B'	26.57	0.96	9.33%	13.3%
FIRSTENERGY	44.44	2.20	9.33%	14.8%
FLOWSERVE	100.43	1.08	10.17%	11.4%
FORTUNE BRANDS	41.22	0.76	10.00%	12.0%
FPL GROUP	52.32	1.89	9.73%	13.7%
FRANKLIN RESOURCES	107.68	0.88	10.50%	11.4%
GAP	21.87	0.34	12.00%	13.8%
GENERAL DYNAMICS	66.57	1.52	9.00%	11.5%
GENERAL ELECTRIC	15.51	0.40	9.50%	12.4%
GENUINE PARTS	36.87	1.60	8.26%	13.0%
H&R BLOCK	19.85	0.60	11.75%	15.2%
HARLEY-DAVIDSON	26.40	0.40	10.00%	11.7%
HASBRO	29.35	0.80	9.00%	12.0%
HEWLETT-PACKARD	49.13	0.32	12.50%	13.2%
HOME DEPOT	27.03	0.90	9.75%	13.4%
HONEYWELL INTL.	38.46	1.21	10.00%	13.5%
ILLINOIS TOOL WORKS	47.29	1.24	10.42%	13.3%
IMS HEALTH	18.20	0.12	11.67%	12.4%
INTERNATIONAL BUS.MCHS.	125.53	2.20	11.00%	13.0%
INTL.GAME TECH.	19.30	0.24	13.60%	15.0%
INVESCO	22.29	0.41	12.00%	14.1%
ITT	51.93	0.85	13.00%	14.9%
JOHNSON & JOHNSON	62.02	1.96	8.24%	11.7%
KELLOGG	51.88	1.50	9.33%	12.5%
KIMBERLY-CLARK	63.09	2.40	7.67%	11.8%
KRAFT FOODS	26.93	1.16	9.15%	13.9%
L3 COMMUNICATIONS	78.72	1.40	10.67%	12.7%
LOWE'S COMPANIES	21.56	0.36	11.25%	13.1%
MARSH & MCLENNAN	23.26	0.80	8.67%	12.5%
MATTEL	19.68	0.75	9.00%	13.2%
MCDONALDS	60.68	2.20	9.38%	13.4%
MCKESSON	61.10	0.48	12.38%	13.3%
MEDTRONIC	39.97	0.82	12.32%	14.6%
METLIFE	35.23	0.74	11.64%	14.0%
MICROSOFT	28.68	0.52	10.06%	12.1%
MOLSON COORS BREWING 'B'	46.90	0.96	11.33%	13.6%
MORGAN STANLEY	31.64	0.20	11.26%	12.0%
NIKE 'B'	63.99	1.08	13.00%	14.9%
NOBLE ENERGY	68.23	0.72	10.67%	11.8%
NORDSTROM	34.11	0.64	10.50%	12.6%
NORFOLK SOUTHERN	49.46	1.36	10.72%	13.8%
NORTHERN TRUST	51.54	1.12	11.83%	14.3%
PACCAR	37.50	0.36	11.75%	12.8%
PARKER-HANNIFIN	54.75	1.00	12.67%	14.7%
PENNEY JC	31.16	0.80	11.50%	14.4%
PEOPLES UNITED FINANCIAL	16.32	0.61	11.00%	15.2%
PEPSICO	61.19	1.80	8.88%	12.1%
PERKINELMER	19.59	0.28	13.00%	14.6%
PG&E	42.45	1.68	7.20%	11.5%
PLUM CREEK TIMBER	33.70	1.68	7.67%	13.1%
POLO RALPH LAUREN 'A'	78.47	0.40	13.75%	14.3%
PRAXAIR	81.84	1.60	12.37%	14.6%

COMPANY	P_0	D_0	GROWTH	COST OF EQUITY
PRINCIPAL FINL.GP.	25.79	0.50	10.33%	12.5%
PROCTER & GAMBLE	60.21	1.76	10.00%	13.3%
PROGRESS ENERGY	38.88	2.48	5.96%	12.9%
QUEST DIAGNOSTICS	57.52	0.40	13.17%	14.0%
QWEST COMMS.INTL.	3.80	0.32	3.20%	12.2%
RANGE RES.	50.01	0.16	13.92%	14.3%
ROPER INDS.NEW	51.89	0.38	14.20%	15.0%
RYDER SYSTEM	42.10	1.00	11.53%	14.2%
SCRIPPS NETWORKS INTACT. 'A'	39.31	0.30	10.47%	11.3%
SEALED AIR	21.09	0.48	10.67%	13.2%
SNAP-ON	37.90	1.20	10.67%	14.2%
SOUTHERN	32.46	1.75	5.59%	11.4%
SOUTHWEST AIRLINES	9.49	0.02	11.00%	11.2%
STANLEY WORKS	47.79	1.32	10.00%	13.1%
STAPLES	23.13	0.33	13.57%	15.2%
STATE STREET	44.24	0.04	11.07%	11.2%
T ROWE PRICE GP.	50.14	1.00	11.64%	13.9%
TARGET	48.19	0.68	12.55%	14.1%
TECO ENERGY	14.80	0.80	7.68%	13.6%
TEXTRON	19.26	0.08	12.75%	13.2%
TIFFANY & CO	41.25	0.68	11.33%	13.2%
TIME WARNER	28.94	0.70	10.33%	13.0%
TJX COS.	38.10	0.48	13.17%	14.6%
TOTAL SYSTEM SERVICES	16.66	0.28	12.13%	14.0%
TRAVELERS COS.	50.59	1.32	9.67%	12.6%
UNITED TECHNOLOGIES	65.78	1.54	10.00%	12.6%
UNITEDHEALTH GP.	27.71	0.03	11.63%	11.8%
UNUM GROUP	20.13	0.33	10.00%	11.8%
V F	73.73	2.40	10.40%	14.0%
VERIZON COMMUNICATIONS	30.93	1.90	6.34%	13.0%
WAL MART STORES	52.12	1.09	11.45%	13.8%
WALGREEN	38.39	0.55	12.50%	14.1%
WESTERN UNION	18.95	0.06	12.42%	12.8%
WISCONSIN ENERGY	45.60	1.35	9.36%	12.6%
WW GRAINGER	95.81	1.84	11.73%	13.9%
XCEL ENERGY	20.03	0.98	6.87%	12.2%
XL CAP.'A'	17.61	0.40	11.00%	13.5%
XTO EN.	43.26	0.50	10.88%	12.2%
YUM! BRANDS	34.40	0.84	11.82%	14.6%
Market-weighted Average				13.1%

Notes: In applying the DCF model to the S&P 500, I included in the DCF analysis only those companies in the S&P 500 group which pay a dividend, have a positive growth rate, and have at least three analysts' long-term growth estimates. To be conservative, I also eliminated those 25% of companies with the highest and lowest DCF results.

D_0 = Current dividend per Thomson Reuters.
P_0 = Average of the monthly high and low stock prices during the three months ending December 2009 per Thomson Reuters.
g = I/B/E/S forecast of future earnings growth December 2009.
k = Cost of equity using the quarterly version of the DCF model shown below:

$$k = \left[\frac{d_0 (1+g)^{\frac{1}{4}}}{P_0} \right]^4 - 1$$

APPENDIX 1
QUALIFICATIONS OF JAMES H. VANDER WEIDE, PH.D.

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James H. Vander Weide is Research Professor of Finance and Economics at Duke University, the Fuqua School of Business. Dr. Vander Weide is also founder and President of Financial Strategy Associates, a consulting firm that provides strategic, financial, and economic consulting services to corporate clients, including cost of capital and valuation studies.

Educational Background and Prior Academic Experience

Dr. Vander Weide holds a Ph.D. in Finance from Northwestern University and a Bachelor of Arts in Economics from Cornell University. He joined the faculty at Duke University and was named Assistant Professor, Associate Professor, Professor, and then Research Professor of Finance and Economics.

Since joining the faculty at Duke, Dr. Vander Weide has taught courses in corporate finance, investment management, and management of financial institutions. He has also taught courses in statistics, economics, and operations research, and a Ph.D. seminar on the theory of public utility pricing. In addition, Dr. Vander Weide has been active in executive education at Duke and Duke Corporate Education, leading executive development seminars on topics including financial analysis, cost of capital, creating shareholder value, mergers and acquisitions, real options, capital budgeting, cash management, measuring corporate performance, valuation, short-run financial planning, depreciation policies, financial strategy, and competitive strategy. Dr. Vander Weide has designed and served as Program Director for several executive education programs, including the Advanced Management Program, Competitive Strategies in Telecommunications, and the Duke Program for Manager Development for managers from the former Soviet Union.

Publications

Dr. Vander Weide has written a book entitled *Managing Corporate Liquidity: An Introduction to Working Capital Management* published by John Wiley and Sons, Inc. He has also written a chapter titled, "Financial Management in the Short Run" for *The Handbook of Modern Finance*; a chapter for *The Handbook of Portfolio Construction: Contemporary Applications of Markowitz Techniques,* "Principles for Lifetime Portfolio Selection: Lessons from Portfolio Theory," and written research papers on such topics as portfolio management, capital budgeting, investments, the effect of regulation on the performance of public utilities, and cash management. His articles have been published in *American Economic Review, Financial Management, International Journal of Industrial Organization, Journal of Finance, Journal of Financial and Quantitative Analysis, Journal of Bank Research, Journal of Portfolio Management, Journal of Accounting Research, Journal of Cash Management, Management Science, Atlantic Economic Journal, Journal of Economics and Business,* and *Computers and Operations Research*.

Professional Consulting Experience

Dr. Vander Weide has provided financial and economic consulting services to firms in the electric, gas, insurance, telecommunications, and water industries for more than 25 years. He has testified on the cost of capital, competition, risk, incentive regulation, forward-looking economic cost, economic pricing guidelines, depreciation, accounting, valuation, and other financial and economic issues in more than 400 cases before the United States Congress, the Canadian Radio-Television and Telecommunications Commission, the Federal Communications Commission, the National Energy Board (Canada), the National Telecommunications and Information Administration, the Federal Energy Regulatory Commission, the Alberta Utilities Board (Canada), the public service commissions of 43 states and the District of Columbia, the insurance commissions of five states, the Iowa State Board of Tax Review, the National Association of Securities Dealers, and the North Carolina Property Tax Commission. In addition, he has testified as an expert witness in proceedings before the United States District Court for the District of New Hampshire; United States District Court for the Northern District of California; United States District Court for the Northern District of Illinois, United States District Court for the District of Nebraska; United States District Court for the Eastern District of North Carolina; Superior Court of North Carolina, the United States Bankruptcy Court for the Southern District of West Virginia; and United States District Court for the Eastern District of Michigan. With respect to implementation of the Telecommunications Act of 1996, Dr. Vander Weide has testified in 30 states on issues relating to the pricing of unbundled network elements and universal service cost studies and has consulted with Bell Canada, Deutsche Telekom, and Telefónica on similar issues. He has also provided expert testimony on issues related to electric and natural gas restructuring. He has worked for Bell Canada/Nortel on a special task force to study the effects of vertical integration in the Canadian telephone industry and has worked for Bell Canada as an expert witness on the cost of capital. Dr. Vander Weide has provided consulting and expert witness testimony to the following companies:

Telecommunications Companies	
ALLTEL and its subsidiaries	Ameritech (now AT&T new)
AT&T (old)	Verizon (Bell Atlantic) and subsidiaries
Bell Canada/Nortel	BellSouth and its subsidiaries
Centel and its subsidiaries	Cincinnati Bell (Broadwing)
Cisco Systems	Citizens Telephone Company
Concord Telephone Company	Contel and its subsidiaries
Deutsche Telekom	GTE and subsidiaries (now Verizon)
Heins Telephone Company	Lucent Technologies
JDS Uniphase	Tellabs, Inc.
Minnesota Independent Equal Access Corp.	NYNEX and its subsidiaries (Verizon)
Pacific Telesis and its subsidiaries	Phillips County Cooperative Tel. Co.
Pine Drive Cooperative Telephone Co.	Roseville Telephone Company (SureWest)
Siemens	SBC Communications (now AT&T new)
Sherburne Telephone Company	Southern New England Telephone
The Stentor Companies	Sprint/United and its subsidiaries

Telefónica	Union Telephone Company
Woodbury Telephone Company	United States Telephone Association
U S West (Qwest)	Valor Telecommunications (Windstream)
Electric, Gas, Pipeline, and Water Companies	
Alcoa Power Generating, Inc.	NOVA Gas Transmission Ltd.
Alliant Energy	North Shore Gas
AltaLink, L.P.	PacifiCorp
Ameren	PG&E
American Water Works	Peoples Energy and its subsidiaries
Atmos Energy	The Peoples Gas, Light and Coke Co.
Central Illinois Public Service	Progress Energy
Citizens Utilities	Public Service Company of North Carolina
Consolidated Natural Gas and its subsidiaries	PSE&G
Dominion Resources	Sempra Energy
Duke Energy	South Carolina Electric and Gas
Empire District Electric Company	Southern Company and subsidiaries
EPCOR Distribution & Transmission Inc.	Tennessee-American Water Company
EPCOR Energy Alberta Inc.	Trans Québec & Maritimes Pipeline Inc.
FortisAlberta Inc.	United Cities Gas Company
Interstate Power Company	Union Gas
Iowa-American Water Company	
Iowa-Illinois Gas and Electric	
Iowa Southern	
Kentucky American Water Company	
Kentucky Power Company	
Kinder Morgan Energy Partners	
MidAmerican Energy and its subsidiaries	
Nevada Power Company	
NICOR	
North Carolina Natural Gas	
Northern Natural Gas Company	

Insurance Companies	
Allstate	
North Carolina Rate Bureau	
United Services Automobile Association (USAA)	
The Travelers Indemnity Company	
Gulf Insurance Company	

Other Professional Experience

Dr. Vander Weide conducts in-house seminars and training sessions on topics such as creating shareholder value, financial analysis, competitive strategy, cost of capital, real options, financial strategy, managing growth, mergers and acquisitions, valuation, measuring corporate performance, capital budgeting, cash management, and financial planning. Among the firms for whom he has designed and taught tailored programs and training sessions are ABB Asea Brown Boveri, Accenture, Allstate, Ameritech, AT&T, Bell Atlantic/Verizon, BellSouth, Progress Energy/Carolina Power & Light, Contel, Fisons, GlaxoSmithKline, GTE, Lafarge, MidAmerican Energy, New Century Energies, Norfolk Southern, Pacific Bell Telephone, The Rank Group, Siemens, Southern New England Telephone, TRW, and Wolseley Plc. Dr. Vander Weide has also hosted a nationally prominent conference/workshop on estimating the cost of capital. In 1989, at the request of Mr. Fuqua, Dr. Vander Weide designed the Duke Program for Manager Development for managers from the former Soviet Union, the first in the United States designed exclusively for managers from Russia and the former Soviet republics.

In the 1970's, Dr. Vander Weide helped found University Analytics, Inc., which at that time was one of the fastest growing small firms in the country. As an officer at University Analytics, he designed cash management models, databases, and software packages that are still used by most major U.S. banks in consulting with their corporate clients. Having sold his interest in University Analytics, Dr. Vander Weide now concentrates on strategic and financial consulting, academic research, and executive education.

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APPENDIX 2
THE QUARTERLY DCF MODEL

The simple DCF Model assumes that a firm pays dividends only at the end of each year. Since firms in fact pay dividends quarterly and investors appreciate the time value of money, the annual version of the DCF Model generally underestimates the value investors are willing to place on the firm's expected future dividend stream. In this appendix, we review two alternative formulations of the DCF Model that allow for the quarterly payment of dividends.

When dividends are assumed to be paid annually, the DCF Model suggests that the current price of the firm's stock is given by the expression:

$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \ldots + \frac{D_n + P_n}{(1+k)^n} \quad \textbf{(1)}$$

where

P_0	=	current price per share of the firm's stock,
$D_1, D_2,...,D_n$	=	expected annual dividends per share on the firm's stock,
P_n	=	price per share of stock at the time investors expect to sell the stock, and
k	=	return investors expect to earn on alternative investments of the same risk, i.e., the investors' required rate of return.

Unfortunately, expression (1) is rather difficult to analyze, especially for the purpose of estimating k. Thus, most analysts make a number of simplifying assumptions. First, they assume that dividends are expected to grow at the constant rate g into the indefinite future. Second, they assume that the stock price at time n is simply the present value of all dividends expected in periods subsequent to n. Third, they assume that the investors' required rate of return, k, exceeds the expected dividend growth rate g. Under the above simplifying assumptions, a firm's stock price may be written as the following sum:

$$P_0 = \frac{D_0(1+g)}{(1+k)} + \frac{D_0(1+g)^2}{(1+k)^2} + \frac{D_0(1+g)^3}{(1+k)^3} + \ldots , \qquad \textbf{(2)}$$

where the three dots indicate that the sum continues indefinitely.

As we shall demonstrate shortly, this sum may be simplified to:

$$P_0 = \frac{D_0(1+g)}{(k - g)}$$

First, however, we need to review the very useful concept of a geometric progression.

Geometric Progression

Consider the sequence of numbers 3, 6, 12, 24,…, where each number after the first is obtained by multiplying the preceding number by the factor 2. Obviously, this sequence of numbers may also be expressed as the sequence 3, 3 x 2, 3 x 2^2, 3 x 2^3, etc. This sequence is an example of a geometric progression.

Definition: A geometric progression is a sequence in which each term after the first is obtained by multiplying some fixed number, called the common ratio, by the preceding term.

A general notation for geometric progressions is: a, the first term, r, the common ratio, and n, the number of terms. Using this notation, any geometric progression may be represented by the sequence:

$$a, ar, ar^2, ar^3, \ldots, ar^{n-1}.$$

In studying the DCF Model, we will find it useful to have an expression for the sum of n terms of a geometric progression. Call this sum S_n. Then

$$S_n = a + ar + \ldots + ar^{n-1} . \qquad \textbf{(3)}$$

However, this expression can be simplified by multiplying both sides of equation (3) by r and then subtracting the new equation from the old. Thus,

$$rS_n = ar + ar^2 + ar^3 + \ldots + ar^n$$

and

$$S_n - rS_n = a - ar^n \quad ,$$

or

$$(1 - r)\, S_n = a\,(1 - r^n) \quad .$$

Solving for S_n, we obtain:

$$S_n = \frac{a(1 - r^n)}{(1 - r)} \qquad \textbf{(4)}$$

as a simple expression for the sum of n terms of a geometric progression. Furthermore, if $|r| < 1$, then S_n is finite, and as n approaches infinity, S_n approaches a ÷ (1-r). Thus, for a geometric progression with an infinite number of terms and $|r| < 1$, equation (4) becomes:

$$S = \frac{a}{1 - r} \qquad \textbf{(5)}$$

<u>Application to DCF Model</u>

Comparing equation (2) with equation (3), we see that the firm's stock price (under the DCF assumption) is the sum of an infinite geometric progression with the first term

$$a = \frac{D_0(1+g)}{(1+k)}$$

and common factor

$$r = \frac{(1+g)}{(1+k)}$$

Applying equation (5) for the sum of such a geometric progression, we obtain

$$S = a \bullet \frac{1}{(1 - r)} = \frac{D_0(1+g)}{(1+k)} \bullet \frac{1}{1 - \frac{1+g}{1+k}} = \frac{D_0(1+g)}{(1+k)} \bullet \frac{1+k}{k - g} = \frac{D_0(1+g)}{k - g}$$

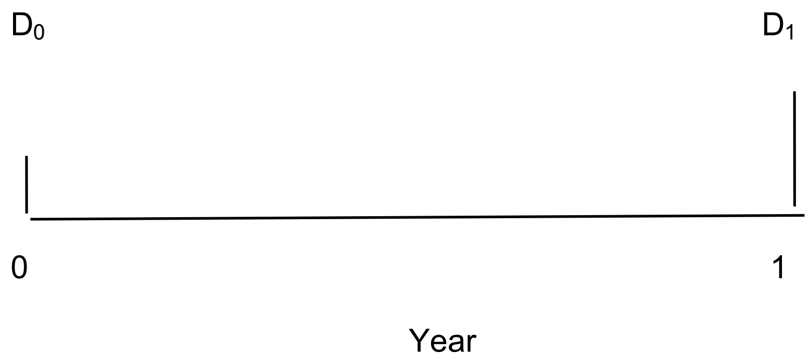
as we suggested earlier.

Quarterly DCF Model

The Annual DCF Model assumes that dividends grow at an annual rate of g% per year (see Figure 1).

Figure 1

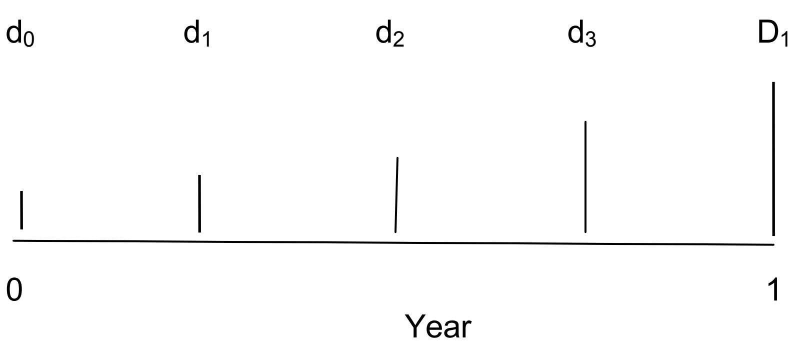
Annual DCF Model



$D_0 = 4d_0$ $\qquad$ $D_1 = D_0(1 + g)$

Figure 2

Quarterly DCF Model (Constant Growth Version)



$d_1 = d_0(1+g)^{.25}$ $\qquad$ $d_2 = d_0(1+g)^{.50}$

$d_3 = d_0(1+g)^{.75}$ $\qquad$ $d_4 = d_0(1+g)$

In the Quarterly DCF Model, it is natural to assume that quarterly dividend payments differ from the preceding quarterly dividend by the factor $(1 + g)^{.25}$, where g is expressed in terms of percent per year and the decimal .25 indicates that the growth has

only occurred for one quarter of the year. (See Figure 2.) Using this assumption, along with the assumption of constant growth and $\boldsymbol{k} > \boldsymbol{g}$, we obtain a new expression for the firm's stock price, which takes account of the quarterly payment of dividends. This expression is:

$$P_0 = \frac{d_0(1+g)^{\frac{1}{4}}}{(1+k)^{\frac{1}{4}}} + \frac{d_0(1+g)^{\frac{2}{4}}}{(1+k)^{\frac{2}{4}}} + \frac{d_0(1+g)^{\frac{3}{4}}}{(1+k)^{\frac{3}{4}}} + \ldots \quad \textbf{(6)}$$

where d_0 is the last quarterly dividend payment, rather than the last annual dividend payment. (We use a lower case d to remind the reader that this is not the annual dividend.)

Although equation (6) looks formidable at first glance, it too can be greatly simplified using the formula [equation (4)] for the sum of an infinite geometric progression. As the reader can easily verify, equation (6) can be simplified to:

$$P_0 = \frac{d_0(1+g)^{\frac{1}{4}}}{(1+k)^{\frac{1}{4}} - (1+g)^{\frac{1}{4}}} \qquad \textbf{(7)}$$

Solving equation (7) for k, we obtain a DCF formula for estimating the cost of equity under the quarterly dividend assumption:

$$k = \left[\frac{d_0(1+g)^{\frac{1}{4}}}{P_0} + (1+g)^{\frac{1}{4}} \right]^4 - 1 \qquad \textbf{(8)}$$

An Alternative Quarterly DCF Model

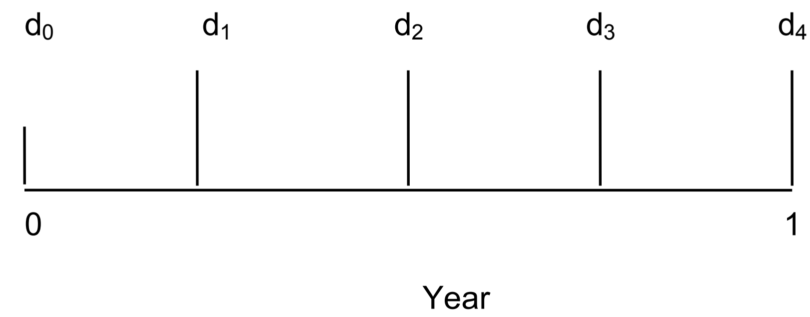
Although the constant growth Quarterly DCF Model [equation (8)] allows for the quarterly timing of dividend payments, it does require the assumption that the firm increases its dividend payments each quarter. Since this assumption is difficult for some analysts to accept, we now discuss a second Quarterly DCF Model that allows for constant quarterly dividend payments within each dividend year.

Assume then that the firm pays dividends quarterly and that each dividend payment is constant for four consecutive quarters. There are four cases to consider, with each case distinguished by varying assumptions about where we are evaluating the firm in relation to the time of its next dividend increase. (See Figure 3.)

Figure 3

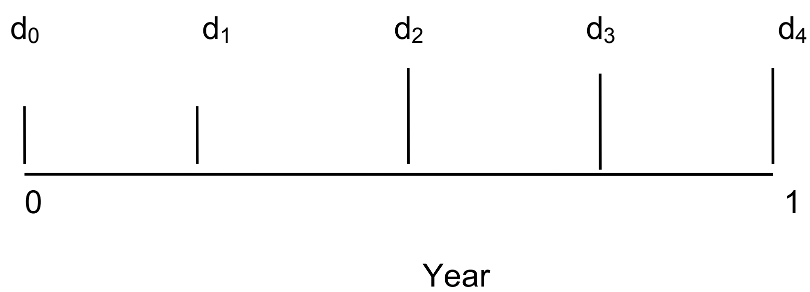
Quarterly DCF Model (Constant Dividend Version)

Case 1



$d_1 = d_2 = d_3 = d_4 = d_0(1+g)$

Case 2

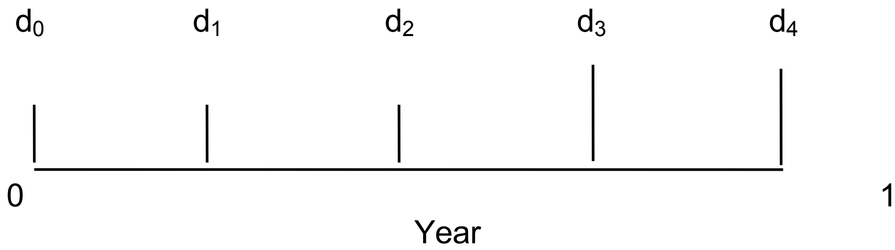


$d_1 = d_0$

$d_2 = d_3 = d_4 = d_0(1+g)$

<u>Figure 3</u> (continued)

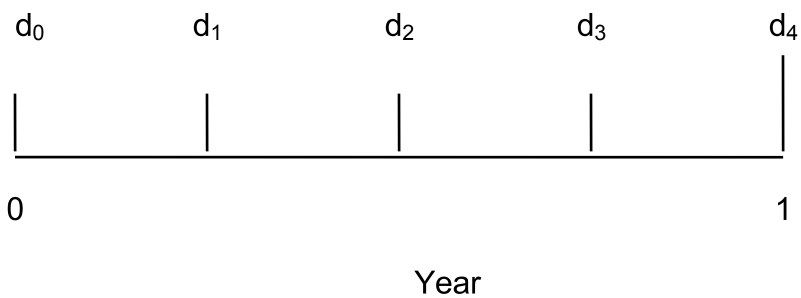
<u>Case 3</u>



$$d_1 = d_2 = d_0$$

$$d_3 = d_4 = d_0(1+g)$$

<u>Case 4</u>



$$d_1 = d_2 = d_3 = d_0$$

$$d_4 = d_0(1+g)$$

If we assume that the investor invests the quarterly dividend in an alternative investment of the same risk, then the amount accumulated by the end of the year will in all cases be given by

$$D_1^* = d_1\,(1+k)^{3/4} + d_2\,(1+k)^{1/2} + d_3\,(1+k)^{1/4} + d_4$$

where d_1, d_2, d_3 and d_4 are the four quarterly dividends. Under these new assumptions, the firm's stock price may be expressed by an Annual DCF Model of the form (2), with the exception that

$$D_1^* = d_1\,(1 + k)^{3/4} + d_2\,(1 + k)^{1/2} + d_3\,(1 + k)^{1/4} + d_4 \qquad \textbf{(9)}$$

is used in place of $D_0(1+g)$. But, we already know that the Annual DCF Model may be reduced to

$$P_0 = \frac{D_0\,(1+g)}{k - g}$$

Thus, under the assumptions of the second Quarterly DCF Model, the firm's cost of equity is given by

$$k = \frac{D_1^*}{P_0} + g \quad \textbf{(10)}$$

with D_1^* given by (9).

Although equation (10) looks like the Annual DCF Model, there are at least two very important practical differences. First, since D_1^* is always greater than $D_0(1+g)$, the estimates of the cost of equity are always larger (and more accurate) in the Quarterly Model (10) than in the Annual Model. Second, since D_1^* depends on k through equation (9), the unknown "k" appears on both sides of (10), and an iterative procedure is required to solve for k.

APPENDIX 3
ADJUSTING FOR FLOTATION COSTS IN DETERMINING
A PUBLIC UTILITY'S
ALLOWED RATE OF RETURN ON EQUITY

Introduction

Regulation of public utilities is guided by the principle that utility revenues should be sufficient to allow recovery of all prudently incurred expenses, including the cost of capital. As set forth in the 1944 *Hope Natural Gas* Case [*Federal Power Comm'n v. Hope Natural Gas Co*. 320 U. S. 591 (1944) at 603], the U. S. Supreme Court states:

> From the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock.…By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks.

Since the flotation costs arising from the issuance of debt and equity securities are an integral component of capital costs, this standard requires that the company's revenues be sufficient to fully recover flotation costs.

Despite the widespread agreement that flotation costs should be recovered in the regulatory process, several issues still need to be resolved. These include:

1. How is the term "flotation costs" defined? Does it include only the out-of-pocket costs associated with issuing securities (e. g., legal fees, printing costs, selling and underwriting expenses), or does it also include the reduction in a security's price that frequently accompanies flotation (i. e., market pressure)?
2. What should be the time pattern of cost recovery? Should a company be allowed to recover flotation costs immediately, or should flotation costs be recovered over the life of the issue?
3. For the purposes of regulatory accounting, should flotation costs be included as an expense? As an addition to rate base? Or as an additional element of a firm's allowed rate of return?
4. Do existing regulatory methods for flotation cost recovery allow a firm ***full*** recovery of flotation costs?

In this paper, I review the literature pertaining to the above issues and discuss my own views regarding how this literature applies to the cost of equity for a regulated firm.

Definition of Flotation Cost

The value of a firm is related to the future stream of net cash flows (revenues minus expenses measured on a cash basis) that can be derived from its assets. In the process of acquiring assets, a firm incurs certain expenses which reduce its value. Some of these expenses or costs are directly associated with revenue production in one period (e. g., wages, cost of goods sold), others are more properly associated with revenue production in many periods (e. g., the acquisition cost of plant and equipment). In either case, the word "cost" refers to any item that reduces the value of a firm.

If this concept is applied to the act of issuing new securities to finance asset purchases, many items are properly included in issuance or flotation costs. These include: (1) compensation received by investment bankers for underwriting services, (2) legal fees, (3) accounting fees, (4) engineering fees, (5) trustee's fees, (6) listing fees, (7) printing and engraving expenses, (8) SEC registration fees, (9) Federal Revenue Stamps, (10) state taxes, (11) warrants granted to underwriters as extra compensation, (12) postage expenses, (13) employees' time, (14) market pressure, and (15) the offer discount. The finance literature generally divides these flotation cost items into three categories, namely, underwriting expenses, issuer expenses, and price effects.

Magnitude of Flotation Costs

The finance literature contains several studies of the magnitude of the flotation costs associated with new debt and equity issues. These studies differ primarily with regard to the time period studied, the sample of companies included, and the source of data. The flotation cost studies generally agree, however, that for large issues, underwriting expenses represent approximately one and one-half percent of the proceeds of debt issues and three to five percent of the proceeds of seasoned equity issues. They also agree that issuer expenses represent approximately 0.5 percent of both debt and equity issues, and that the announcement of an equity issue reduces the company's stock price by at least two to three percent of the proceeds from the stock issue. Thus, total flotation costs represent approximately two percent[10] of the proceeds from debt issues, and five and one-half to eight and one-half percent of the proceeds of equity issues.

Lee *et. al.* [14] is an excellent example of the type of flotation cost studies found in the finance literature. The Lee study is a comprehensive recent study of the underwriting and issuer costs associated with debt and equity issues for both utilities and non-utilities. The results of the Lee *et. al.* study are reproduced in Tables 1 and 2. Table 1 demonstrates that the total underwriting and issuer expenses for the 1,092 debt issues in their study averaged 2.24 percent of the proceeds of the issues, while the total underwriting and issuer costs for the 1,593 seasoned equity issues in their study averaged 7.11 percent of the proceeds of the new issue. Table 1 also demonstrates that the total underwriting and issuer costs of seasoned equity offerings, as a percent of proceeds, decline with the size of the issue. For issues above $60 million, total underwriting and issuer costs amount to from three to five percent of the amount of the proceeds.

Table 2 reports the total underwriting and issuer expenses for 135 utility debt issues and 136 seasoned utility equity issues. Total underwriting and issuer expenses for utility bond offerings averaged 1.47 percent of the amount of the proceeds and for seasoned utility equity offerings averaged 4.92 percent of the amount of the proceeds. Again, there are some economies of scale associated with larger equity offerings. Total underwriting and issuer expenses for equity offerings in excess of 40 million dollars generally range from three to four percent of the proceeds.

The results of the Lee study for large equity issues are consistent with results of earlier studies by Bhagat and Frost [4], Mikkelson and Partch [17], and Smith [24]. Bhagat and Frost found that total underwriting and issuer expenses average approximately four and one-half percent of the amount of proceeds from negotiated utility offerings during the period 1973 to 1980, and approximately three and one-half percent of the amount of the proceeds from competitive utility offerings over the

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[10] The two percent flotation cost on debt only recognizes the cost of newly-issued debt. When interest rates decline, many companies exercise the call provisions on higher cost debt and reissue debt at lower rates. This process involves reacquisition costs that are not included in the academic studies. If reacquisition costs were included in the academic studies, debt flotation costs could increase significantly.

same period. Mikkelson and Partch found that total underwriting and issuer expenses average five and one-half percent of the proceeds from seasoned equity offerings over the 1972 to 1982 period. Smith found that total underwriting and issuer expenses for larger equity issues generally amount to four to five percent of the proceeds of the new issue.

The finance literature also contains numerous studies of the decline in price associated with sales of large blocks of stock to the public. These articles relate to the price impact of: (1) initial public offerings; (2) the sale of large blocks of stock from one investor to another; and (3) the issuance of seasoned equity issues to the general public. All of these studies generally support the notion that the announcement of the sale of large blocks of stock produces a decline in a company's share price. The decline in share price for initial public offerings is significantly larger than the decline in share price for seasoned equity offerings; and the decline in share price for public utilities is less than the decline in share price for non-public utilities. A comprehensive study of the magnitude of the decline in share price associated specifically with the sale of new equity by public utilities is reported in Pettway [19], who found the market pressure effect for a sample of 368 public utility equity sales to be in the range of two to three percent. This decline in price is a real cost to the utility, because the proceeds to the utility depend on the stock price on the day of issue.

In addition to the price decline associated with the announcement of a new equity issue, the finance literature recognizes that there is also a price decline associated with the actual issuance of equity securities. In particular, underwriters typically sell seasoned new equity securities to investors at a price lower than the closing market price on the day preceding the issue. The Rules of Fair Practice of the National Association of Securities Dealers require that underwriters not sell shares at a price above the offer price. Since the offer price represents a binding constraint to the underwriter, the underwriter tends to set the offer price slightly below the market price on the day of issue to compensate for the risk that the price received by the underwriter may go down, but can not increase. Smith provides evidence that the offer discount tends to be between 0.5 and 0.8 percent of the proceeds of an equity issue. I am not aware of any similar studies for debt issues.

In summary, the finance literature provides strong support for the conclusion that total underwriting and issuer expenses for public utility debt offerings represent approximately two percent of the amount of the proceeds, while total underwriting and issuer expenses for public utility equity offerings represent at least four to five percent of the amount of the proceeds. In addition, the finance literature supports the conclusion that the cost associated with the decline in stock price at the announcement date represents approximately two to three percent as a result of a large public utility equity issue.

TIME PATTERN OF FLOTATION COST RECOVERY

Although flotation costs are incurred only at the time a firm issues new securities, there is no reason why an issuing firm ought to recognize the expense only in the current period. In fact, if assets purchased with the proceeds of a security issue produce revenues over many years, a sound argument can be made in favor of recognizing flotation expenses over a reasonably lengthy period of time. Such recognition is certainly consistent with the generally accepted accounting principle that the time pattern of expenses match the time pattern of revenues, and it is also consistent with the normal treatment of debt flotation expenses in both regulated and unregulated industries.

In the context of a regulated firm, it should be noted that there are many possible time patterns for the recovery of flotation expenses. However, if it is felt that flotation expenses are most

appropriately recovered over a period of years, then it should be recognized that investors must also be compensated for the passage of time. That is to say, the value of an investor's capital will be reduced if the expenses are merely distributed over time, without any allowance for the time value of money.

ACCOUNTING FOR FLOTATION COST IN A REGULATORY SETTING

In a regulatory setting, a firm's revenue requirements are determined by the equation:

Revenue Requirement = Total Expenses + Allowed Rate of Return x Rate Base

Thus, there are three ways in which an issuing firm can account for and recover its flotation expenses: (1) treat flotation expenses as a current expense and recover them immediately; (2) include flotation expenses in rate base and recover them over time; and (3) adjust the allowed rate of return upward and again recover flotation expenses over time. Before considering methods currently being used to recover flotation expenses in a regulatory setting, I shall briefly consider the advantages and disadvantages of these three basic recovery methods.

Expenses. Treating flotation costs as a current expense has several advantages. Because it allows for recovery at the time the expense occurs, it is not necessary to compute amortized balances over time and to debate which interest rate should be applied to these balances. A firm's stockholders are treated fairly, and so are the firm's customers, because they pay neither more nor less than the actual flotation expense. Since flotation costs are relatively small compared to the total revenue requirement, treatment as a current expense does not cause unusual rate hikes in the year of flotation, as would the introduction of a large generating plant in a state that does not allow Construction Work in Progress in rate base.

On the other hand, there are two major disadvantages of treating flotation costs as a current expense. First, since the asset purchased with the acquired funds will likely generate revenues for many years into the future, it seems unfair that current ratepayers should bear the full cost of issuing new securities, when future ratepayers share in the benefits. Second, this method requires an estimate of the underpricing effect on each security issue. Given the difficulties involved in measuring the extent of underpricing, it may be more accurate to estimate the average underpricing allowance for many securities than to estimate the exact figure for one security.

Rate Base. In an article in *Public Utilities Fortnightly*, Bierman and Hass [5] recommend that flotation costs be treated as an intangible asset that is included in a firm's rate base along with the assets acquired with the stock proceeds. This approach has many advantages. For ratepayers, it provides a better match between benefits and expenses: the future ratepayers who benefit from the financing costs contribute the revenues to recover these costs. For investors, if the allowed rate of return is equal to the investors' required rate of return, it is also theoretically fair since they are compensated for the opportunity cost of their investment (including both the time value of money and the investment risk).

Despite the compelling advantages of this method of cost recovery, there are several disadvantages that probably explain why it has not been used in practice. First, a firm will only recover the proper amount for flotation expenses if the rate base is multiplied by the appropriate cost of capital. To the extent that a commission under or over estimates the cost of capital, a firm will under or over recover its flotation expenses. Second, it is may be both legally and psychologically difficult for commissioners to include an intangible asset in a firm's rate base. According to established legal doctrine, assets are to be included in rate base only if they are

"used and useful" in the public service. It is unclear whether intangible assets such as flotation expenses meet this criterion.

Rate of Return. The prevailing practice among state regulators is to treat flotation expenses as an additional element of a firm's cost of capital or allowed rate of return. This method is similar to the second method above (treatment in rate base) in that some part of the initial flotation cost is amortized over time. However, it has a disadvantage not shared by the rate base method. If flotation cost is included in rate base, it is fairly easy to keep track of the flotation cost on each new equity issue and see how it is recovered over time. Using the rate of return method, it is not possible to track the flotation cost for specific issues because the flotation cost for a specific issue is never recorded. Thus, it is not clear to participants whether a current allowance is meant to recover (1) flotation costs actually incurred in a test period, (2) expected future flotation costs, or (3) past flotation costs. This confusion never arises in the treatment of debt flotation costs. Because the exact costs are recorded and explicitly amortized over time, participants recognize that current allowances for debt flotation costs are meant to recover some fraction of the flotation costs on all past debt issues.

EXISTING REGULATORY METHODS

Although most state commissions prefer to let a regulated firm recover flotation expenses through an adjustment to the allowed rate of return, there is considerable controversy about the magnitude of the required adjustment. The following are some of the most frequently asked questions: (1) Should an adjustment to the allowed return be made every year, or should the adjustment be made only in those years in which new equity is raised? (2) Should an adjusted rate of return be applied to the entire rate base, or should it be applied only to that portion of the rate base financed with paid-in capital (as opposed to retained earnings)? (3) What is the appropriate formula for adjusting the rate of return?

This section reviews several methods of allowing for flotation cost recovery. Since the regulatory methods of allowing for recovery of debt flotation costs is well known and widely accepted, I will begin my discussion of flotation cost recovery procedures by describing the widely accepted procedure of allowing for debt flotation cost recovery.

Debt Flotation Costs

Regulators uniformly recognize that companies incur flotation costs when they issue debt securities. They typically allow recovery of debt flotation costs by making an adjustment to both the cost of debt and the rate base (see Brigham [6]). Assume that: (1) a regulated company issues $100 million in bonds that mature in 10 years; (2) the interest rate on these bonds is seven percent; and (3) flotation costs represent four percent of the amount of the proceeds. Then the cost of debt for regulatory purposes will generally be calculated as follows:

$$\begin{aligned}
\text{Cost of Debt} &= \frac{\text{Interest expense} + \text{Amortization of flotation costs}}{\text{Principal value - Unamortized flotation costs}} \\
&= \frac{\$7{,}000{,}000 + \$400{,}000}{\$100{,}000{,}000 - \$4{,}000{,}000} \\
&= 7.71\%
\end{aligned}$$

Thus, current regulatory practice requires that the cost of debt be adjusted upward by approximately 71 basis points, in this example, to allow for the recovery of debt flotation costs. This example does not include losses on reacquisition of debt. The flotation cost allowance would increase if losses on reacquisition of debt were included.

The logic behind the traditional method of allowing for recovery of debt flotation costs is simple. Although the company has issued $100 million in bonds, it can only invest $96 million in rate base because flotation costs have reduced the amount of funds received by $4 million. If the company is not allowed to earn a 71 basis point higher rate of return on the $96 million invested in rate base, it will not generate sufficient cash flow to pay the seven percent interest on the $100 million in bonds it has issued. Thus, proper regulatory treatment is to increase the required rate of return on debt by 71 basis points.

Equity Flotation Costs

The finance literature discusses several methods of recovering equity flotation costs. Since each method stems from a specific model, (i. e., set of assumptions) of a firm and its cash flows, I will highlight the assumptions that distinguish one method from another.

Arzac and Marcus. Arzac and Marcus [2] study the proper flotation cost adjustment formula for a firm that makes continuous use of retained earnings and external equity financing and maintains a constant capital structure (debt/equity ratio). They assume at the outset that underwriting expenses and underpricing apply only to new equity obtained from external sources. They also assume that a firm has previously recovered all underwriting expenses, issuer expenses, and underpricing associated with previous issues of new equity.

To discuss and compare various equity flotation cost adjustment formulas, Arzac and Marcus make use of the following notation:

k	=	an investors' required return on equity
r	=	a utility's allowed return on equity base
S	=	value of equity in the absence of flotation costs
S_f	=	value of equity net of flotation costs
K_t	=	equity base at time t
E_t	=	total earnings in year t
D_t	=	total cash dividends at time t
b	=	$(E_t-D_t) \div E_t$ = retention rate, expressed as a fraction of earnings
h	=	new equity issues, expressed as a fraction of earnings
m	=	equity investment rate, expressed as a fraction of earnings, $m = b + h < 1$
f	=	flotation costs, expressed as a fraction of the value of an issue.

Because of flotation costs, Arzac and Marcus assume that a firm must issue a greater amount of external equity each year than it actually needs. In terms of the above notation, a firm issues $hE_t \div (1-f)$ to obtain hE_t in external equity funding. Thus, each year a firm loses:

Equation 3

$$L = \frac{hE_t}{1-f} - hE_t = \frac{f}{1-f} \times hE_t$$

due to flotation expenses. The present value, V, of all future flotation expenses is:

Equation 4

$$V = \sum_{t=1}^{\infty} \frac{fhE_t}{(1-f)(1+k)^t} = \frac{fh}{1-f} \times \frac{rK_0}{k-mr}$$

To avoid diluting the value of the initial stockholder's equity, a regulatory authority needs to find the value of r, a firm's allowed return on equity base, that equates the value of equity net of flotation costs to the initial equity base ($S_f = K_0$). Since the value of equity net of flotation costs equals the value of equity in the absence of flotation costs minus the present value of flotation costs, a regulatory authority needs to find that value of *r* that solves the following equation:

$$S_f = S - L.$$

This value is:

Equation 5

$$r = \frac{k}{1 - \frac{fh}{1-f}}$$

To illustrate the Arzac-Marcus approach to adjusting the allowed return on equity for the effect of flotation costs, suppose that the cost of equity in the absence of flotation costs is 12 percent. Furthermore, assume that a firm obtains external equity financing each year equal to 10 percent of its earnings and that flotation expenses equal 5 percent of the value of each issue. Then, according to Arzac and Marcus, the allowed return on equity should be:

$$r = \frac{.12}{1 - \frac{(.05).(.1)}{.95}} = .1206 = 12.06\%$$

Summary. With respect to the three questions raised at the beginning of this section, it is evident that Arzac and Marcus believe the flotation cost adjustment should be applied each year, since continuous external equity financing is a fundamental assumption of their model. They also believe that the adjusted rate of return should be applied to the entire equity-financed portion of the rate base because their model is based on the assumption that the flotation cost adjustment mechanism will be applied to the entire equity financed portion of the rate base. Finally, Arzac and Marcus recommend a flotation cost adjustment formula, Equation (3), that implicitly excludes recovery of financing costs associated with financing in previous periods and includes only an allowance for the fraction of equity financing obtained from external sources.

Patterson. The Arzac-Marcus flotation cost adjustment formula is significantly different from the conventional approach (found in many introductory textbooks) which recommends the adjustment equation:

Equation 6

$$r = \frac{D_t}{P_{t-1}(1-f)} + g$$

where P_{t-1} is the stock price in the previous period and g is the expected dividend growth rate. Patterson [18] compares the Arzac-Marcus adjustment formula to the conventional approach and reaches the conclusion that the Arzac-Marcus formula effectively expenses issuance costs as they are incurred, while the conventional approach effectively amortizes them over an assumed infinite life of the equity issue. Thus, the conventional formula is similar to the formula for the recovery of debt flotation costs: it is not meant to compensate investors for the flotation costs of future issues, but instead is meant to compensate investors for the flotation costs of previous issues. Patterson argues that the conventional approach is more appropriate for rate making purposes because the plant purchased with external equity funds will yield benefits over many future periods.

Illustration. To illustrate the Patterson approach to flotation cost recovery, assume that a newly organized utility sells an initial issue of stock for $100 per share, and that the utility plans to finance all new investments with retained earnings. Assume also that: (1) the initial dividend per share is six dollars; (2) the expected long-run dividend growth rate is six percent; (3) the flotation cost is five percent of the amount of the proceeds; and (4) the payout ratio is 51.28 percent. Then, the investor's required rate of return on equity is [k = (D/P) + g = 6 percent + 6 percent = 12 percent]; and the flotation-cost-adjusted cost of equity is [6 percent (1/.95) + 6 percent = 12.316 percent].

The effects of the Patterson adjustment formula on the utility's rate base, dividends, earnings, and stock price are shown in Table 3. We see that the Patterson formula allows earnings and dividends to grow at the expected six percent rate. We also see that the present value of expected future dividends, $100, is just sufficient to induce investors to part with their money. If the present value of expected future dividends were less than $100, investors would not have been willing to invest $100 in the firm. Furthermore, the present value of future dividends will only equal $100 if the firm is allowed to earn the 12.316 percent flotation-cost-adjusted cost of equity on its entire rate base.

Summary. Patterson's opinions on the three issues raised in this section are in stark contrast to those of Arzac and Marcus. He believes that: (1) a flotation cost adjustment should be applied in every year, regardless of whether a firm issues any new equity in each year; (2) a flotation cost adjustment should be applied to the entire equity-financed portion of the rate base, including that portion financed by retained earnings; and (3) the rate of return adjustment formula should allow a firm to recover an appropriate fraction of all previous flotation expenses.

CONCLUSION

Having reviewed the literature and analyzed flotation cost issues, I conclude that:

Definition of Flotation Cost: A regulated firm should be allowed to recover both the total underwriting and issuance expenses associated with issuing securities and the cost of market pressure.

Time Pattern of Flotation Cost Recovery. Shareholders are indifferent between the alternatives of immediate recovery of flotation costs and recovery over time, as long as they are fairly compensated for the opportunity cost of their money. This opportunity cost must include both the time value of money and a risk premium for equity investments of this nature.

Regulatory Recovery of Flotation Costs. The Patterson approach to recovering flotation costs is the only rate-of-return-adjustment approach that meets the *Hope* case criterion that a regulated company's revenues must be sufficient to allow the company an opportunity to recover all prudently incurred expenses, including the cost of capital. The Patterson approach is also the only rate-of-return-adjustment approach that provides an incentive for investors to invest in the regulated company.

Implementation of a Flotation Cost Adjustment. As noted earlier, prevailing regulatory practice seems to be to allow the recovery of flotation costs through an adjustment to the required rate of return. My review of the literature on this subject indicates that there are at least two recommended methods of making this adjustment: the Patterson approach and the Arzac-Marcus approach. The Patterson approach assumes that a firm's flotation expenses on new equity issues are treated in the same manner as flotation expenses on new bond issues, i. e., they are amortized over future time periods. If this assumption is true (and I believe it is), then the flotation cost adjustment should be applied to a firm's entire equity base, including retained earnings. In practical terms, the Patterson approach produces an increase in a firm's cost of equity of approximately thirty basis points. The Arzac-Marcus approach assumes that flotation costs on new equity issues are recovered entirely in the year in which the securities are sold. Under the Arzac-Marcus assumption, a firm should not be allowed any adjustments for flotation costs associated with previous flotations. Instead, a firm should be allowed only an adjustment on future security sales as they occur. Under reasonable assumptions about the rate of new equity sales, this method produces an increase in the cost of equity of approximately six basis points. Since the Arzac-Marcus approach does not allow the company to recover the entire amount of its flotation cost, I recommend that this approach be rejected and the Patterson approach be accepted.

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Table 1

Direct Costs as a Percentage of Gross Proceeds
for Equity (IPOs and SEOs) and Straight and Convertible Bonds
Offered by Domestic Operating Companies 1990—1994[11]

Equities

	IPOs				SEOs			
Proceeds ($ in millions)	No. of Issues	Gross Spreads	Other Direct Expenses	Total Direct Costs	No. of Issues	Gross Spreads	Other Direct Expenses	Total Direct Costs
2-9.99	337	9.05%	7.91%	16.96%	167	7.72%	5.56%	13.28%
10-19.99	389	7.24%	4.39%	11.63%	310	6.23%	2.49%	8.72%
20-39.99	533	7.01%	2.69%	9.70%	425	5.60%	1.33%	6.93%
40-59.99	215	6.96%	1.76%	8.72%	261	5.05%	0.82%	5.87%
60-79.99	79	6.74%	1.46%	8.20%	143	4.57%	0.61%	5.18%
80-99.99	51	6.47%	1.44%	7.91%	71	4.25%	0.48%	4.73%
100-199.99	106	6.03%	1.03%	7.06%	152	3.85%	0.37%	4.22%
200-499.99	47	5.67%	0.86%	6.53%	55	3.26%	0.21%	3.47%
500 and up	10	5.21%	0.51%	5.72%	9	3.03%	0.12%	3.15%
Total/Average	**1,767**	**7.31%**	**3.69%**	**11.00%**	**1,593**	**5.44%**	**1.67%**	**7.11%**

Bonds

	Convertible Bonds				Straight Bonds			
Proceeds ($ in millions)	No. of Issues	Gross Spreads	Other Direct Expenses	Total Direct Costs	No. of Issues	Gross Spreads	Other Direct Expenses	Total Direct Costs
2-9.99	4	6.07%	2.68%	8.75%	32	2.07%	2.32%	4.39%
10-19.99	14	5.48%	3.18%	8.66%	78	1.36%	1.40%	2.76%
20-39.99	18	4.16%	1.95%	6.11%	89	1.54%	0.88%	2.42%
40-59.99	28	3.26%	1.04%	4.30%	90	0.72%	0.60%	1.32%
60-79.99	47	2.64%	0.59%	3.23%	92	1.76%	0.58%	2.34%
80-99.99	13	2.43%	0.61%	3.04%	112	1.55%	0.61%	2.16%
100-199.99	57	2.34%	0.42%	2.76%	409	1.77%	0.54%	2.31%
200-499.99	27	1.99%	0.19%	2.18%	170	1.79%	0.40%	2.19%
500 and up	3	2.00%	0.09%	2.09%	20	1.39%	0.25%	1.64%
Total/Average	**211**	**2.92%**	**0.87%**	**3.79%**	**1,092**	**1.62%**	**0.62%**	**2.24%**

Notes:

Closed-end funds and unit offerings are excluded from the sample. Rights offerings for SEOs are also excluded. Bond offerings do not include securities backed by mortgages and issues by Federal agencies. Only firm commitment offerings and non-shelf-registered offerings are included.
Gross Spreads as a percentage of total proceeds, including management fee, underwriting fee, and selling concession.
Other Direct Expenses as a percentage of total proceeds, including management fee, underwriting fee, and selling concession.
Total Direct Costs as a percentage of total proceeds (total direct costs are the sum of gross spreads and other direct expenses).

[11] Inmoo Lee, Scott Lochhead, Jay Ritter, and Quanshui Zhao, "The Costs of Raising Capital," *Journal of Financial Research* Vol 19 No 1 (Spring 1996) pp. 59—74.

Table 2

Direct Costs of Raising Capital 1990—1994
Utility versus Non-Utility Companies[12]

Equities

Non-Utilities	IPOs			SEOs		
Proceeds ($ in millions)	No. of Issues	Gross Spreads	Total Direct Costs	No. Of Issues	Gross Spreads	Total Direct Costs
2-9.99	332	9.04%	16.97%	154	7.91%	13.76%
10-19.99	388	7.24%	11.64%	278	6.42%	9.01%
20-39.99	528	7.01%	9.70%	399	5.70%	7.07%
40-59.99	214	6.96%	8.71%	240	5.17%	6.02%
60-79.99	78	6.74%	8.21%	131	4.68%	5.31%
80-99.99	47	6.46%	7.88%	60	4.35%	4.84%
100-199.99	101	6.01%	7.01%	137	3.97%	4.36%
200-499.99	44	5.65%	6.49%	50	3.27%	3.48%
500 and up	10	5.21%	5.72%	8	3.12%	3.25%
Total/Average	1,742	7.31%	11.01%	1,457	5.57%	7.32%
Utilities Only						
2-9.99	5	9.40%	16.54%	13	5.41%	7.68%
10-19.99	1	7.00%	8.77%	32	4.59%	6.21%
20-39.99	5	7.00%	9.86%	26	4.17%	4.96%
40-59.99	1	6.98%	11.55%	21	3.69%	4.12%
60-79.99	1	6.50%	7.55%	12	3.39%	3.72%
80-99.99	4	6.57%	8.24%	11	3.68%	4.11%
100-199.99	5	6.45%	7.96%	15	2.83%	2.98%
200-499.99	3	5.88%	7.00%	5	3.19%	3.48%
500 and up	0			1	2.25%	2.31%
Total/Average	25	7.15%	10.14%	136	4.01%	4.92%

[12] Lee *et al, op. cit*.

Table 2 (continued)
Direct Costs of Raising Capital 1990—1994
Utility versus Non-Utility Companies[13]

Bonds

Non- Utilities	Convertible Bonds			Straight Bonds		
Proceeds ($ in millions)	No. of Issues	Gross Spreads	Total Direct Costs	No. of Issues	Gross Spreads	Total Direct Costs
2-9.99	4	6.07%	8.75%	29	2.07%	4.53%
10-19.99	12	5.54%	8.65%	47	1.70%	3.28%
20-39.99	16	4.20%	6.23%	63	1.59%	2.52%
40-59.99	28	3.26%	4.30%	76	0.73%	1.37%
60-79.99	47	2.64%	3.23%	84	1.84%	2.44%
80-99.99	12	2.54%	3.19%	104	1.61%	2.25%
100-199.99	55	2.34%	2.77%	381	1.83%	2.38%
200-499.99	26	1.97%	2.16%	154	1.87%	2.27%
500 and up	3	2.00%	2.09%	19	1.28%	1.53%
Total/Average	203	2.90%	3.75%	957	1.70%	2.34%
Utilities Only						
2-9.99	0			3	2.00%	3.28%
10-19.99	2	5.13%	8.72%	31	0.86%	1.35%
20-39.99	2	3.88%	5.18%	26	1.40%	2.06%
40-59.99	0			14	0.63%	1.10%
60-79.99	0			8	0.87%	1.13%
80-99.99	1	1.13%	1.34%	8	0.71%	0.98%
100-199.99	2	2.50%	2.74%	28	1.06%	1.42%
200-499.99	1	2.50%	2.65%	16	1.00%	1.40%
500 and up	0			1	3.50%	na[14]
Total/Average	8	3.33%	4.66%	135	1.04%	1.47%

Notes:
Total proceeds raised in the United States, excluding proceeds from the exercise of over allotment options.
Gross spreads as a percentage of total proceeds (including management fee, underwriting fee, and selling concession).
Other direct expenses as a percentage of total proceeds (including registration fee and printing, legal, and auditing costs).

[13] Lee *et al, op. cit*.

[14] Not available because of missing data on other direct expenses.

Table 3
Illustration of Patterson Approach to Flotation Cost Recovery

Time Period	Rate Base	Earnings @ 12.32%	Earnings @ 12.00%	Dividends	Amortization Initial FC
0	95.00				
1	100.70	11.70	11.40	6.00	0.3000
2	106.74	12.40	12.08	6.36	0.3180
3	113.15	13.15	12.81	6.74	0.3371
4	119.94	13.93	13.58	7.15	0.3573
5	127.13	14.77	14.39	7.57	0.3787
6	134.76	15.66	15.26	8.03	0.4015
7	142.84	16.60	16.17	8.51	0.4256
8	151.42	17.59	17.14	9.02	0.4511
9	160.50	18.65	18.17	9.56	0.4782
10	170.13	19.77	19.26	10.14	0.5068
11	180.34	20.95	20.42	10.75	0.5373
12	191.16	22.21	21.64	11.39	0.5695
13	202.63	23.54	22.94	12.07	0.6037
14	214.79	24.96	24.32	12.80	0.6399
15	227.67	26.45	25.77	13.57	0.6783
16	241.33	28.04	27.32	14.38	0.7190
17	255.81	29.72	28.96	15.24	0.7621
18	271.16	31.51	30.70	16.16	0.8078
19	287.43	33.40	32.54	17.13	0.8563
20	304.68	35.40	34.49	18.15	0.9077
21	322.96	37.52	36.56	19.24	0.9621
22	342.34	39.77	38.76	20.40	1.0199
23	362.88	42.16	41.08	21.62	1.0811
24	384.65	44.69	43.55	22.92	1.1459
25	407.73	47.37	46.16	24.29	1.2147
26	432.19	50.21	48.93	25.75	1.2876
27	458.12	53.23	51.86	27.30	1.3648
28	485.61	56.42	54.97	28.93	1.4467
29	514.75	59.81	58.27	30.67	1.5335
30	545.63	63.40	61.77	32.51	1.6255
Present Value@12%		195.00	190.00	100.00	5.00

APPENDIX 4
EX ANTE RISK PREMIUM APPROACH

My ex ante risk premium method is based on studies of the DCF expected return on proxy companies compared to the interest rate on Moody's A-rated utility bonds. Specifically, for each month in my study period, I calculate the risk premium using the equation,

$$RP_{PROXY} = DCF_{PROXY} - I_A$$

where:

RP_{PROXY}	=	the required risk premium on an equity investment in the proxy group of companies,
DCF_{PROXY}	=	average DCF estimated cost of equity on a portfolio of proxy companies; and
I_A	=	the yield to maturity on an investment in A-rated utility bonds.

For my ex ante risk premium analysis, I begin with my comparable group of natural gas companies shown in Schedule 2. Previous studies have shown that the ex ante risk premium tends to vary inversely with the level of interest rates, that is, the risk premium tends to increase when interest rates decline, and decrease when interest rates go up. To test whether my studies also indicate that the ex ante risk premium varies inversely with the level of interest rates, I perform a regression analysis of the relationship between the ex ante risk premium and the yield to maturity on A-rated utility bonds, using the equation,

$$RP_{PROXY} = a + (b \times I_A) + e$$

where:

RP_{PROXY} = risk premium on proxy company group;

I_A = yield to maturity on A-rated utility bonds;

e = a random residual; and

a, b = coefficients estimated by the regression procedure.

Regression analysis assumes that the statistical residuals from the regression equation are random. My examination of the residuals reveals that there is a significant probability that the residuals are serially correlated (non-zero serial correlation indicates that the residual in one time period tends to be correlated with the residual in the previous time period). Therefore, I make adjustments to my data to correct for the possibility of serial correlation in the residuals.

The common procedure for dealing with serial correlation in the residuals is to estimate the regression coefficients in two steps. First, a multiple regression analysis is used to estimate the serial correlation coefficient, *r*. Second, the estimated serial correlation coefficient is used to transform the original variables into new variables whose serial correlation is approximately zero. The regression coefficients are then re-estimated using the transformed variables as inputs in the regression equation. Based on my knowledge of the statistical relationship between the yield to maturity on A-rated utility bonds and the required risk premium, my estimate of the ex ante risk premium on an investment in my proxy natural gas company group as compared to an investment in A-rated utility bonds is given by the equation:

$$
\begin{array}{ccccc}
RP_{PROXY} & = & 0.712 & - & -.3579 \times I_A. \\
 & & (9.13) & & (--3.139)
\end{array}
$$
[15]

[15] The t-statistics are shown in parentheses.

Using a 6.29 percent forecasted yield to maturity on A-rated utility bonds at December 2010,[16] the regression equation produces an ex ante risk premium based on the natural gas proxy group equal to 4.87 percent (0.0712 – .3579 x 6.29 = 4.87).

To estimate the cost of equity using the ex ante risk premium method, one may add the estimated risk premium over the yield on A-rated utility bonds to the forecasted yield to maturity on A-rated utility bonds. As described above, my analyses produce an estimated risk premium over the yield on A-rated utility bonds equal to 4.9 percent. Adding an estimated risk premium of 4.9 percent to the 6.3 percent forecasted yield to maturity on A-rated utility bonds produces a cost of equity estimate of 11.2 percent using the ex ante risk premium method.

[16] As described in the testimony, the forecasted yield to maturity on A-rated utility bonds, 6.3 percent, is obtained by adding Value Line's forecasted 50-basis point increase in the yield on AAA-rated corporate bonds over the period Q4 2009 to Q4 2010 to the 5.8 percent average yield on Moody's A-rated utility bonds in December 2009.

APPENDIX 5
RISK PREMIUM APPROACH

Source

Stock price and yield information is obtained from Standard & Poor's Security Price publication. Standard & Poor's derives the stock dividend yield by dividing the aggregate cash dividends (based on the latest known annual rate) by the aggregate market value of the stocks in the group. The bond price information is obtained by calculating the present value of a bond due in 30 years with a $4.00 coupon and a yield to maturity of a particular year's indicated Moody's A-rated Utility bond yield. The values shown on Schedules 4 and 5 are the January values of the respective indices.

Calculation of Stock and Bond Returns

Sample calculation of "Stock Return" column:

$$\text{Stock Return (2008)} = \left[\frac{\text{Stock Price (2009) - Stock Price (2008) + Dividend (2008)}}{\text{Stock Price (2008)}} \right]$$

where Dividend (2008) = Stock Price (2008) x Stock Div. Yield (2008)

Sample calculation of "Bond Return" column:

$$\text{Bond Return (2008)} = \left[\frac{\text{Bond Price (2009) - Bond Price (2008) + Interest (2008)}}{\text{Bond Price (2008)}} \right]$$

where Interest = $4.00.

**BEFORE THE PUBLIC SERVICE COMMISSION
OF WEST VIRGINIA**

DIRECT TESTIMONY OF JAMES H. VANDER WEIDE

2010

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I. WITNESS IDENTIFICATION

Q. 1 What is your name and business address?

A. 1 My name is James H. Vander Weide. I am Research Professor of Finance and Economics at Duke University, the Fuqua School of Business. I am also President of Financial Strategy Associates, a firm that provides strategic and financial consulting services to business clients. My business address is 3606 Stoneybrook Drive, Durham, North Carolina.

Q. 2 Would you please describe your educational background and prior academic experience?

A. 2 I graduated from Cornell University with a Bachelor's Degree in Economics and from Northwestern University with a Ph.D. in Finance. After joining the faculty of the School of Business at Duke University, I was named Assistant Professor, Associate Professor, and then Professor. I have published research in the areas of finance and economics and taught courses in corporate finance, investment management, and management of financial institutions at Duke for more than 35 years. My research publications and teaching experience are described in Appendix 1. I am now retired from my teaching duties at Duke.

Q. 3 Have you previously testified on financial or economic issues?

A. 3 Yes. As an expert on financial and economic theory and practice, I have participated in more than 400 regulatory and legal proceedings

before the U.S. Congress, the Canadian Radio-Television and Telecommunications Commission, the Federal Communications Commission, the National Telecommunications and Information Administration, the Federal Energy Regulatory Commission, the National Energy Board (Canada), the public service commissions of 43 states and three Canadian provinces, the insurance commissions of five states, the Iowa State Board of Tax Review, the National Association of Securities Dealers, and the North Carolina Property Tax Commission. In addition, I have prepared expert testimony in proceedings before the U.S. District Court for the District of Nebraska; the U.S. District Court for the District of New Hampshire; the U.S. District Court for the District of Northern Illinois; the U.S. District Court for the Eastern District of North Carolina; the U.S. District Court for the Northern District of California; Montana Second Judicial District Court, Silver Bow County; the Superior Court, North Carolina; the U.S. Bankruptcy Court for the Southern District of West Virginia; and the U.S. District Court for the Eastern District of Michigan.

II. PURPOSE OF TESTIMONY

Q. 4 What is the purpose of your testimony?

A. 4 I have been asked by West Virginia-American Water Company (WVAWC) to prepare an independent appraisal of its cost of equity capital and to recommend a rate of return on equity that is fair, that allows WVAWC to attract capital on reasonable terms, and that allows WVAWC to maintain its financial integrity.

Q. 5 How do you estimate WVAWC's cost of equity?

A. 5 I estimate WVAWC's cost of equity by applying several standard techniques, including the discounted cash flow (DCF) model, the risk premium method, and the Capital Asset Pricing Model (CAPM) to groups of comparably risky companies.

Q. 6 Do you generally give equal weight to the results of these standard cost of equity methods?

A. 6 I generally give equal weight to the results of these standard cost of equity methods when the average Value Line beta for the proxy companies is relatively close to 1.0, and the average company in my proxy group has a relatively large market value capitalization. If the average Value Line beta for the proxy companies is significantly less than 1.0, as it is in this present case, and/or the average market value capitalization for the proxy companies is relatively small, I generally give little or no weight to the results of the application of the CAPM.

Q. 7 Why do you give little or no weight to the result of the CAPM when the average Value Line beta is significantly less than 1.0?

A. 7 I give little or no weight to the result of the CAPM when the average Value Line beta is significantly less than 1.0 because financial research provides strong support for the conclusion that the CAPM underestimates the cost of equity for companies whose betas are

significantly less than 1.0. I present a summary of this research in the CAPM section of my testimony.

Q. 8 Why is it appropriate to give less weight to the result of the CAPM when the companies in the proxy group have small market capitalization?

A. 8 It is appropriate to give less weight to the result of the CAPM in those instances because financial research also supports the conclusion that the CAPM underestimates the cost of equity for small market capitalization companies.

Q. 9 What cost of equity do you find for your comparable companies in this proceeding?

A. 9 I find that the cost of equity for my comparable companies is in the range 10.9 percent to 12.3 percent. Because the average beta of my proxy companies is significantly less than 1.0, my conclusion is based principally on the results of my DCF and risk premium studies.

Q. 10 What is your recommendation regarding WVAWC's cost of equity?

A. 10 I conservatively recommend that WVAWC be allowed a fair rate of return on common equity in the range 10.9 percent to 12.3 percent. My recommended return on equity is conservative in that I use: (1) the lower simple average DCF result for the proxy water companies, even though a market-value weighted average is generally more appropriate for estimating the cost of equity; and (2) the lower average result for the proxy group of publicly-traded natural gas distribution companies ("LDCs") obtained by eliminating outlier low and high results.

Q. 11 Do you have an exhibit to accompany your testimony?

A. 11 Yes. I have an Exhibit___(JVW-1), consisting of eight schedules and five appendices that were prepared by me or under my direction and supervision.

III. ECONOMIC AND LEGAL PRINCIPLES

Q. 12 How do economists define the required rate of return, or cost of capital, associated with particular investment decisions such as the decision to invest in water treatment, storage, and distribution facilities?

A. 12 Economists define the cost of capital as the return investors expect to receive on alternative investments of comparable risk.

Q. 13 How does the cost of capital affect a firm's investment decisions?

A. 13 The goal of a firm is to maximize the value of the firm. Thus, a firm should continue to invest in plant and equipment only to the extent that the rate of return on such investment is greater than or equal to the cost of capital.

Q. 14 How does the cost of capital affect investors' willingness to invest in a company?

A. 14 The cost of capital measures the return investors can expect on investments of comparable risk. The cost of capital also measures the investor's required rate of return on investment because rational investors will not invest in a particular opportunity if the expected return on that opportunity is less than the cost of capital. Thus, the cost of capital is a hurdle rate for both investors and the firm.

Q. 15 Do all investors have the same position in the firm?

A. 15 No. Debt investors have a fixed claim on a firm's assets and income that must be paid prior to any payment to the firm's equity investors. Because the firm's equity investors have only a residual claim on the firm's assets and income, their investments are riskier than debt investments. Thus, the cost of equity exceeds the cost of debt.

Q. 16 What is the economic definition of the cost of equity?

A. 16 As I note above, the cost of equity is the return investors expect to receive on alternative equity investments of comparable risk. Since the return on an equity investment of comparable risk is not a contractual return, the cost of equity is more difficult to measure than the cost of debt. However, as I have already noted, the cost of equity is greater than the cost of debt. The cost of equity, like the cost of debt, is both forward looking and market based.

Q. 17 How do economists measure the percentages of debt and equity in a firm's capital structure?

A. 17 Economists measure the percentages of debt and equity in a firm's capital structure by first calculating the market value of the firm's debt and the market value of its equity. Economists then calculate the percentage of debt by the ratio of the market value of debt to the combined market value of debt and equity, and the percentage of equity by the ratio of the market value of equity to the combined market values of debt and equity. For example, if a firm's debt has a market value of $25 million and its equity has a market value of $75 million, then its total market capitalization is $100 million, and its capital structure contains 25 percent debt and 75 percent equity.

Q. 18 Why do economists measure a firm's capital structure in terms of the market values of its debt and equity?

A. 18 Economists measure a firm's capital structure in terms of the market values of its debt and equity because: (1) the weighted average cost of capital is defined as the return investors expect to earn on a portfolio of the company's debt and equity securities; (2) investors measure the expected return and risk on their portfolios using market value weights, not book value weights; and (3) market values are the best measures of the amounts of debt and equity investors have invested in the company on a going forward basis.

Q. 19 Why do investors measure the expected return and risk on their investment portfolios using market value weights rather than book value weights?

A. 19 Investors measure the expected return and risk on their investment portfolios using market value weights because market values are the best measure of the amounts the investors currently have invested in each security in the portfolio. From the point of view of investors, the historical cost or book value of their investment is irrelevant to the current risk and required return on their portfolios; if they were to sell their investments, they would receive market value, not historical cost. Thus, the return can only be measured in terms of market values.

Q. 20 Is the economic definition of the weighted average cost of capital consistent with regulators' traditional definition of the average cost of capital?

A. 20 No. The economic definition of the weighted average cost of capital is based on the market costs of debt and equity, the market value percentages of debt and equity in a company's capital structure, and the future expected risk of investing in the company. In contrast, regulators have traditionally defined the weighted average cost of capital using the embedded cost of debt and the book values of debt and equity in a company's capital structure.

Q. 21 Does the required rate of return on an investment vary with the risk of that investment?

A. 21 Yes. Since investors are averse to risk, they require a higher rate of return on investments with greater risk.

Q. 22 Are these economic principles regarding the fair return for capital recognized in any Supreme Court cases?

A. 22 Yes. These economic principles, relating to the supply of and demand for capital, are recognized in two United States Supreme Court cases: (1) *Bluefield Water Works and Improvement Co. v. Public Service*

Comm'n.; and (2) *Federal Power Comm'n v. Hope Natural Gas Co*. In the *Bluefield Water Works* case, the Court states:

> A public utility is entitled to such rates as will permit it to earn a return upon the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties, but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures. The return…should be reasonably sufficient to assure confidence in the financial soundness of the utility, and should be adequate, under efficient and economical management, to maintain and support its credit, and enable it to raise the money necessary for the proper discharge of its public duties. [*Bluefield Water Works and Improvement Co. v. Public Service Comm'n.* 262 U.S. 679, 692 (1923)].

The Court clearly recognizes here that: (1) a regulated firm cannot remain financially sound unless the return it is allowed an opportunity to earn on the value of its property is at least equal to the cost of capital (the principle relating to the demand for capital); and (2) a regulated firm will not be able to attract capital if it does not offer investors an opportunity to earn a return on their investment equal to the return they expect to earn on other investments of the same risk (the principle relating to the supply of capital).

In the *Hope Natural Gas* case, the Court reiterates the financial soundness and capital attraction principles of the *Bluefield* case:

> From the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock... By that standard the return to the equity owner should be commensurate with returns on investments in

> other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital. [*Federal Power Comm'n v. Hope Natural Gas Co*., 320 U.S. 591, 603 (1944)]

IV. BUSINESS AND FINANCIAL RISKS IN THE WATER UTILITY INDUSTRY

Q. 23 What are the major factors that affect business risk in the water utility industry?

A. 23 Business risk in the water utility industry is affected by the following economic factors:

1. High Operating Leverage. The water utility business requires a large commitment to fixed costs in relation to variable costs, a situation called high operating leverage. The relatively high degree of fixed costs in the water utility business arises because of the average water company's large investment in fixed, long-lived water treatment, storage, and distribution facilities. High operating leverage causes the average water company's net income to be highly sensitive to sales fluctuations.

2. Demand Uncertainty. The business risk of the water utility business is increased by the high degree of demand uncertainty in the industry. Demand uncertainty is caused primarily by: (i) wide fluctuations in average temperature and rainfall from year to year; (ii) the state of the economy; and (iii) customer growth in the service territory.

3. Supply Uncertainty. The risk of the water utility business is further increased by the need to assure a safe and reliable supply of water to meet customer needs on any given day of the year. The Safe Drinking Water Act Amendments of 1996 authorize the Environmental Protection Agency (EPA) to periodically test the drinking water for impurities and to issue regulations requiring water utilities to reduce drinking water contaminants to an acceptable level. The EPA has exercised its authority by requiring the water utilities to meet increasingly stringent drinking water standards over time. The rising costs and uncertainty of meeting ever more stringent drinking water standards is a major risk facing the water utilities.

V. COST OF EQUITY ESTIMATION METHODS

Q. 24 What methods do you use to estimate the cost of common equity capital for WVAWC?

A. 24 I review the results of three generally accepted methods for estimating the cost of common equity. These are the Discounted Cash Flow (DCF), the risk premium method, and the Capital Asset Pricing Model (CAPM). The DCF method assumes that the current market price of a firm's stock is equal to the discounted value of all expected future cash flows. The risk premium method assumes that the investor's required return on an equity investment is equal to the interest rate on a long-term bond plus an additional equity risk premium to compensate the investor for the risks of investing in equities compared to bonds. The CAPM assumes that the investor's required rate of return on equity is equal to a risk-free rate of interest plus the product of a company-specific risk factor, beta, and the expected risk premium on the market portfolio.

VI. DISCOUNTED CASH FLOW (DCF) APPROACH

Q. 25 Please describe the DCF model.

A. 25 The DCF model is based on the assumption that investors value an asset on the basis of the future cash flows they expect to receive from owning the asset. Thus, investors value an investment in a bond because they expect to receive a sequence of semi-annual coupon payments over the life of the bond and a terminal payment equal to the bond's face value at the time the bond matures. Likewise, investors value an investment in a firm's stock because they expect to receive a sequence of dividend payments and, perhaps, expect to sell the stock at a higher price sometime in the future.

A second fundamental principle of the DCF approach is that investors value a dollar received in the future less than a dollar received today. A future dollar is valued less than a current dollar because investors could invest a current dollar in an interest earning account and increase their wealth. This principle is called the time value of money.

Applying the two fundamental DCF principles noted above to an investment in a bond leads to the conclusion that investors value their investment in the bond on the basis of the present value of the bond's future cash flows. Thus, the price of the bond should reflect the timing, magnitude, and relative risk of the expected cash flows. Algebraically this can be expressed as:

EQUATION 1

$$P_B = \frac{C}{(1+i)} + \frac{C}{(1+i)^2} + \cdots + \frac{C+F}{(1+i)^n}$$

where:

P_B	=	Bond price;
C	=	Cash value of the constant coupon payment (assumed for notational convenience to occur annually rather than semi-annually);
F	=	Face value of the bond;
i	=	The rate of interest investors could earn by investing their money in an alternative bond of equal risk; and
n	=	The number of periods before the bond matures.

Applying these same principles to an investment in a firm's stock suggests that the price of the stock should be equal to:

EQUATION 2

$$P_s = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \cdots + \frac{D_n + P_n}{(1+k)^n}$$

where:

P_S	=	Current price of the firm's stock;
$D_1, D_2 ... D_n$	=	Expected annual dividend per share on the firm's stock;

P_n = Price per share of stock at the time the investor expects to sell the stock; and

k = Return the investor expects to earn on alternative investments of the same risk, i.e., the investor's required rate of return.

Equation (2) is frequently called the annual discounted cash flow model of stock valuation. Assuming that dividends grow at a constant annual rate, *g*, this equation can be solved for *k*, the cost of equity. The resulting cost of equity equation is $k = D_1/P_s + g$, where *k* is the cost of equity, D_1 is the expected next period annual dividend, P_s is the current price of the stock, and *g* is the constant annual growth rate in earnings, dividends, and book value per share. The term D_1/P_s is called the dividend yield component of the annual DCF model, and the term *g* is called the growth component of the annual DCF model. As in the case of the price of a bond, the price of a stock is related to the timing, magnitude, and relative risk of the expected cash flows.

Q. 26 Are you recommending that the annual DCF model be used to estimate WVAWC's cost of equity?

A. 26 No. The DCF model assumes that a company's stock price is equal to the present discounted value of all expected future dividends. The annual DCF model is only a correct expression for the present discounted value of future dividends if dividends are paid annually at the end of each year. Since the companies in my proxy group all pay dividends quarterly, the current market price that investors are willing to pay reflects the expected quarterly receipt of dividends. Therefore, a quarterly DCF model must be used to estimate the cost of equity for these firms. The quarterly DCF model differs from the annual DCF model in that it expresses a company's price as the present discounted value of a quarterly stream of dividend payments. A complete analysis of the implications of the quarterly payment of dividends on the DCF model is provided in Exhibit__(JVW-1), Appendix 2. For the reasons cited there, I employed the quarterly DCF model throughout my calculations.

Q. 27 Please describe the quarterly DCF model you use.

A. 27 The quarterly DCF model I use is described on Schedule 1 and in Appendix 2. The quarterly DCF equation shows that the cost of equity is: the sum of the future expected dividend yield and the growth rate, where the dividend in the dividend yield is the equivalent future value of the four quarterly dividends at the end of the year, and the growth rate is the expected growth in dividends or earnings per share.

Q. 28 In Appendix 2, you demonstrate that the quarterly DCF model provides the theoretically correct valuation of stocks when dividends are paid quarterly. Do investors, in practice, recognize the actual timing and magnitude of cash flows when they value stocks and other securities?

A. 28 Yes. In valuing long-term government or corporate bonds, investors recognize that interest is paid semi-annually. Thus, the price of a long-term government or corporate bond is simply the present value of the semi-annual interest and principal payments on these bonds. Likewise, in valuing mortgages, investors recognize that interest is paid monthly. Thus, the value of a mortgage loan is simply the present value of the monthly interest and principal payments on the loan. In valuing stock investments, stock investors correctly recognize that dividends are paid quarterly. Thus, a firm's stock price is the present value of the stream of quarterly dividends expected from owning the stock.

Q. 29 When valuing bonds, mortgages, or stocks, would investors assume that cash flows are received only at the end of the year, when, in fact, the cash flows are received semi-annually, quarterly, or monthly?

A 29 No. Assuming that cash flows are received at the end of the year when they are received semi-annually, quarterly, or monthly would lead investors to make serious mistakes in valuing investment opportunities. No rational investor would make the mistake of assuming that dividends or other cash flows are paid annually when, in fact, they are paid more frequently.

Q. 30 How do you estimate the growth component of the quarterly DCF model?

A. 30 I use both the average analysts' estimates of future earnings per share (EPS) growth reported by I/B/E/S Thomson Reuters (I/B/E/S) and the estimate of future earnings per share growth reported by Value Line.

Q. 31 Do you generally rely on EPS growth estimates from both I/B/E/S and Value Line?

A. 31 In applying the DCF model, I generally rely on the analysts' estimates reported by I/B/E/S. However, as I discuss in this testimony, the water companies have such small market capitalization that there are generally only one or two I/B/E/S analysts' long-term growth forecasts available. To supplement the available I/B/E/S growth forecasts, I therefore also rely on the earnings growth forecasts reported by Value Line for American States, Aqua America, California Water, Connecticut Water, Middlesex Water, and York.

Q. 32 What are the analysts' estimates of future EPS growth?

A. 32 As part of their research, financial analysts working at Wall Street firms periodically estimate EPS growth for each firm they follow. The EPS forecasts for each firm are then published. Investors who are contemplating purchasing or selling shares in individual companies review the forecasts. These estimates represent five-year forecasts of EPS growth.

Q. 33 What is I/B/E/S?

A. 33 I/B/E/S is a division of Thomson Reuters that reports analysts' EPS growth forecasts for a broad group of companies. The forecasts are expressed in terms of a mean forecast and a standard deviation of forecast for each firm. Investors use the mean forecast as an estimate of future firm performance.

Q. 34 Why do you use the I/B/E/S growth estimates?

A. 34 The I/B/E/S growth rates: (1) are widely circulated in the financial community, (2) include the projections of reputable financial analysts who develop estimates of future EPS growth, (3) are reported on a timely basis to investors, and (4) are widely used by institutional and other investors.

Q. 35 Why do you rely on analysts' projections of future EPS growth in estimating the investors' expected growth rate rather than looking at historical growth rates?

A. 35 I rely on analysts' projections of future EPS growth because there is considerable empirical evidence that investors use analysts' forecasts to estimate future earnings growth.

Q. 36 Have you performed any studies concerning the use of analysts' forecasts as an estimate of investors' expected growth rate, g?

A. 36 Yes, I prepared a study in conjunction with Willard T. Carleton, Professor Emeritus of Finance at the University of Arizona, on why analysts' forecasts are the best estimate of investors' expectation of future long-term growth. This study is described in a paper entitled "Investor Growth Expectations and Stock Prices: the Analysts versus History," published in the Spring 1988 edition of *The Journal of Portfolio Management*.

Q. 37 Please summarize the results of your study.

A. 37 First, we performed a correlation analysis to identify the historically oriented growth rates which best described a firm's stock price. Then we did a regression study comparing the historical growth rates with the average analysts' forecasts. In every case, the regression equations containing the average of analysts' forecasts statistically outperformed the regression equations containing the historical growth estimates. These results are consistent with those found by Cragg and Malkiel, the early major research in this area (John G. Cragg and Burton G. Malkiel, *Expectations and the Structure of Share Prices*, University of Chicago Press, 1982). These results are also consistent with the hypothesis that investors use analysts' forecasts, rather than historically oriented growth calculations, in making stock buy and sell decisions. They provide overwhelming evidence that the analysts' forecasts of future growth are superior to historically oriented growth measures in predicting a firm's stock price.

Q. 38 Has your study been updated to include more recent data?

A. 38 Yes. Researchers at State Street Financial Advisors updated my study using data through year-end 2003. Their results continue to confirm that analysts' growth forecasts are superior to historically-oriented growth measures in predicting a firm's stock price.

Q. 39 What price do you use in your DCF model?

A. 39 I use a simple average of the monthly high and low stock prices for each firm for the three-month period ending March 2010. These high and low stock prices were obtained from Thomson Reuters.

Q. 40 Why do you use the three-month average stock price in applying the DCF method?

A. 40 I use the three-month average stock price in applying the DCF method because stock prices fluctuate daily, while financial analysts' forecasts for a given company are generally changed less frequently, often on a quarterly basis. Thus, to match the stock price with an earnings forecast, it is appropriate to average stock prices over a three-month period.

Q. 41 Do you include an allowance for flotation costs in your DCF analysis?

A. 41 Yes. I include a five percent allowance for flotation costs in my DCF calculations.

Q. 42 Please explain your inclusion of flotation costs.

A. 42 All firms that have sold securities in the capital markets have incurred some level of flotation costs, including underwriters' commissions, legal fees, printing expense, etc. These costs are withheld from the proceeds of the stock sale or are paid separately, and must be recovered over the life of the equity issue. Costs vary depending upon the size of the issue, the type of registration method used and other factors, but in general these costs range between three and five percent of the proceeds from the issue [see Lee, Inmoo, Scott Lochhead, Jay Ritter, and Quanshui Zhao, "The Costs of Raising Capital," *The Journal of Financial Research*, Vol. XIX No 1 (Spring 1996), 59-74, and Clifford W. Smith, "Alternative Methods for Raising Capital," *Journal of Financial Economics* 5 (1977) 273-307]. In addition to these costs, for large equity issues (in relation to outstanding equity shares), there is likely to be a decline in price associated with the sale of shares to the public. On average, the decline due to market pressure has been estimated at two to three percent [see Richard H. Pettway, "The Effects of New Equity Sales Upon Utility Share Prices," *Public Utilities Fortnightly*, May 10, 1984, 35—39]. Thus, the total flotation cost, including both issuance expense and market pressure, could range anywhere from five to eight percent of the proceeds of an equity issue. I believe a combined five percent allowance for flotation costs is a conservative estimate that should be used in applying the DCF model in this proceeding.

Q. 43 Does WVAWC issue equity in the capital markets?

A. 43 No. Although WVAWC does not issue equity in the capital markets, its parent must issue equity to provide WVAWC the necessary financing to make investments in its water supply operations. If the parent is not able to recover its flotation costs through WVAWC's rates, it will have no incentive to invest in WVAWC.

Q. 44 Is a flotation cost adjustment only appropriate if a company issues stock during the test year?

A. 44 No. As described in Exhibit__(JVW-1), Appendix 3, a flotation cost adjustment is required whether or not a company issued new stock during the test year. Previously incurred flotation costs have not been recovered in previous rate cases; rather, they are a permanent cost associated with past issues of common stock. Just as an adjustment is made to the embedded cost of debt to reflect previously incurred debt issuance costs (regardless of whether additional bond issuances were made in the test year), so should an adjustment be made to the cost of equity regardless of whether additional stock was issued during the test year.

Q. 45 How do you apply the DCF approach to obtain the cost of equity capital for WVAWC?

A. 45 I apply the DCF approach to the publicly-traded water companies shown on Schedule 1 and the publicly-traded LDCs shown on Schedule 2.

Q. 46 How do you select your group of publicly-traded water companies?

A. 46 I select all the water companies included in the Value Line Investment Survey that: (1) pay dividends; (2) did not decrease dividends during any quarter of the past two years; (3) have at least one analyst's long-term growth forecast; and (4) have not announced a merger. In addition, all of the companies included in my group have a Value Line Safety Rank of 3, where 3 is the average Safety Rank of the Value Line universe of companies.

Q. 47 Why do you eliminate companies that have either decreased or eliminated their dividend in the past two years?

A. 47 The DCF model requires the assumption that dividends will grow at a constant rate into the indefinite future. If a company has either decreased or eliminated its dividend in recent years, an assumption that the company's dividend will grow at the same rate into the indefinite future is questionable.

Q. 48 Why do you eliminate companies that do not have any analyst's long-term growth forecasts?

A. 48 As noted above, my studies indicate that the analysts' growth forecasts best approximate the growth forecasts used by investors in making stock buy and sell decisions; and thus, the average of the analysts' growth forecasts is the best available estimate of the growth term in the DCF Model. In my opinion, it is difficult to apply the DCF model to companies that do not have any analysts' long-term growth estimates.

Q. 49 Are the Value Line water companies widely followed by analysts in the investment community?

A. 49 No. As a result of their small size and low investor turnover, the water companies are generally followed by very few analysts. The number of analysts' estimates for each of the Value Line water companies is shown below in Table 1.

TABLE 1

NUMBER OF LONG-TERM GROWTH FORECASTS FOR WATER COMPANIES

LINE NO.	COMPANY	I/B/E/S ANALYSTS' ESTIMATES	VALUE LINE ESTIMATE	VALUE LINE EDITION
1	Amer. States Water	1	1	Standard
2	Amer. Water Works	4	NA	Standard
3	Aqua America	3	1	Standard
4	Artesian Res. 'A'	1	NA	Plus
4	California Water	2	1	Standard
5	Connecticut Water	NA	1	Plus
6	Middlesex Water	NA	1	Plus
7	Pennichuck	NA	NA	Plus
8	SJW Corp.	NA	NA	Plus
9	Southwest Water	NA	1	Standard
10	York Water	1	1	Plus

Q. 50 Do you normally include companies in your proxy groups that have only one or two analysts' long-term growth forecasts?

A. 50 No. I normally include a company in my proxy group only if there are at least three analysts' estimates of long-term growth. On the basis of my professional judgment, I believe that cost of equity estimates based on three or more analysts' estimates are more reliable than cost of equity estimates based on just one or two forecasts.

Q. 51 Recognizing the greater uncertainty associated with DCF results based on just one or two analysts' forecasts, do you supplement your DCF results for the water companies with a DCF analysis of an additional proxy group?

A. 51 Yes. Given the greater uncertainty in applying the DCF model to companies with only one or two analysts' growth forecasts, as noted above, I also apply the DCF model to an additional proxy group consisting of LDCs, and each of the companies in the LDC proxy group has at least two analysts' estimates of long-term growth.

Q. 52 You note above that you also eliminate from your proxy groups companies that have announced mergers. Why do you eliminate companies that have announced mergers that are not yet completed?

A. 52 A merger announcement can sometimes have a significant impact on a company's stock price because of anticipated merger-related cost savings and new market opportunities. Analysts' growth forecasts, on the other hand, are necessarily related to companies as they currently exist, and do not reflect investors' views of the potential cost savings and new market opportunities associated with mergers. The use of a stock price that includes the value of potential mergers in conjunction with growth forecasts that do not include the growth enhancing prospects of potential mergers produces DCF results that tend to distort a company's cost of equity.

Q. 53 Please summarize the result of your application of the DCF model to your water company proxy group.

A. 53 As shown in Schedule 1, my application of the DCF model to the Value Line water companies produces a market-weighted average DCF result of 13.3 percent and a simple average DCF result of 12.3 percent.

Q. 54 Is it generally more appropriate to use a market-weighted average DCF result or a simple average DCF result to estimate a company's cost of equity?

A. 54 It is generally more appropriate to refer to a market value weighted average result, as I do in reporting the average result for the proxy group of LDCs. However, two companies in the water company group, American Water Works and Aqua America, represent nearly three-fourths of the market value of all companies in the water company group. Thus, referring to a market-weighted average result would effectively cause a market-weighted average result to depend primarily on the result for two companies, American Water Works and Aqua America, which, in this case, have higher than average DCF results than the smaller companies. I therefore conservatively use the 12.3 percent simple average rather than the 13.3 percent market-weighted average DCF result for the water companies to arrive at my recommendation in this proceeding.

Q. 55 You note above that you also apply your DCF method to a proxy group of LDCs. Why do you apply your DCF model to a proxy group of LDCs?

A. 55 I apply my DCF model to a proxy group of LDCs because: (1) the companies in the water company group are generally followed by only one or two analysts; (2) the LDCs are a conservative proxy for the risk of investing in water companies; and (3) it is useful to examine the cost of equity results for a larger group of companies of similar risk that have a wider following in the investment community in order to test the reasonableness of the results obtained by applying cost of equity methodologies to the small group of publicly-traded water companies. Financial theory does not require that companies be in exactly the same industry to be comparable in risk.

Q. 56 How do you select your proxy group of LDCs?

A. 56 I select all the companies in Value Line's natural gas industry groups that: (1) are in the business of natural gas distribution; (2) paid dividends during every quarter of the last two years; (3) did not decrease dividends during any quarter of the past two years; (4) have at least two analysts included in the I/B/E/S consensus growth forecast;[1] and (5) have not announced a merger. In addition, all of the LDCs included in my group have an investment grade bond rating and a Value Line Safety Rank of 1, 2, or 3. The LDCs in my DCF proxy group and the average DCF result are shown on Schedule 2.

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[1] As I note above, on the basis of my professional judgment, I normally specify that the I/B/E/S long-term earnings growth forecast must include the forecasts of at least three analysts. However, in March 2010 there are only five natural gas companies with growth forecasts from at least three analysts. In this study, therefore, I also include results for companies that have growth forecasts based on two analysts' growth forecasts.

Q. 57 How are the LDCs similar to WVAWC?

A. 57 Like WVAWC, the LDCs are regulated public utilities that: (1) invest primarily in a capital-intensive physical network that connects the customer to the source of supply; and (2) sell their products and services at regulated rates to customers whose demand is primarily dependent on weather and the state of the economy.

Q. 58 Does your LDC proxy group meet the standards of the *Hope* and *Bluefield* cases you cite above?

A. 58 Yes. The *Hope* and *Bluefield* standard states that a public utility should be allowed to earn a return on its investment that is commensurate with the returns investors are able to earn on investments having similar risk. The LDCs are a group of companies that meet the standards of the *Hope* and *Bluefield* cases because they are a conservative proxy for the risk of investing in WVAWC.

Q. 59 Do you have any empirical evidence that the LDCs in your proxy group are a conservative proxy for WVAWC?

A. 59 Yes. The average Value Line Safety Rank for my proxy group of LDCs is approximately 2, on a scale where 1 is the most safe and 5 is the least safe, whereas the water companies have an average Value Line Safety Rank of 3.

Q. 60 Please summarize the results of your application of the DCF method to the LDC proxy group.

A. 60 My application of the DCF method to the LDC proxy group produces a market-weighted average result of 10.9 percent, as shown on Schedule 2.

VII. RISK PREMIUM APPROACH

Q. 61 Please describe the risk premium approach to estimating WVAWC's cost of equity.

A. 61 The risk premium approach is based on the principle that investors expect to earn a return on an equity investment in WVAWC that reflects a "premium" over and above the return they expect to earn on an investment in a portfolio of long-term bonds. This equity risk premium compensates equity investors for the additional risk they bear in making equity investments versus bond investments.

Q. 62 How do you measure the required risk premium on an equity investment in WVAWC?

A. 62 I use two methods to estimate the required risk premium on an equity investment in WVAWC. The first is called the ex ante risk premium method and the second is called the ex post risk premium method.

A. Ex Ante Risk Premium Approach

Q. 63 Please describe your ex ante risk premium approach for measuring the required risk premium on an equity investment in WVAWC.

A. 63 My ex ante risk premium method is based on studies of the DCF expected return on a comparable group of natural gas distribution companies, which I compared to the interest rate on Moody's A-rated utility bonds. Specifically, for each month in my study period, I calculate the risk premium using the equation,

$$RP_{PROXY} = DCF_{PROXY} - I_A$$

where:

RP_{PROXY} = the required risk premium on an equity investment in the proxy group of companies;

DCF_{PROXY} = average DCF estimated cost of equity on a portfolio of proxy companies; and

I_A = the yield to maturity on an investment in A-rated utility bonds.

I then perform a regression analysis to determine if there is a relationship between the calculated risk premium and interest rates. Finally, I use the results of the regression analysis to estimate the investors' required risk premium. To estimate the cost of equity, I then add the required risk premium to the interest rate on A-rated utility bonds. A detailed description of my ex ante risk premium studies is contained in Appendix 4, and the underlying DCF results and interest rates are displayed in Schedule 3.

Q. 64 Why do you apply your ex ante risk premium study to LDCs rather than to water companies?

A. 64 I apply my ex ante risk premium approach to LDCs rather than to water companies because the LDCs are similar in risk to the water companies and there are sufficient data to apply the DCF method to the sample companies over a relatively long period of time. In contrast, as discussed above, the water companies are generally followed by only one or two analysts, and there are relatively few companies with consistent data extending back for a reasonably long study period.

Q. 65 What estimated risk premium do you obtain from your ex ante risk premium method?

A. 65 As described in Appendix 4, my analyses produce an estimated ex ante risk premium over the yield on A-rated utility bonds equal to 4.77 percent.

Q. 66 What cost of equity result do you obtain from your ex ante risk premium study?

A. 66 To estimate the cost of equity using the ex ante risk premium method, one may add the estimated ex ante risk premium over the yield on A-rated utility bonds to the forecasted yield to maturity on A-rated utility bonds.[2] The forecasted yield to maturity on A-rated utility bonds, 6.57 percent, is obtained by adding the 57-basis point spread between the average March 2010 yield on AAA-rated corporate bonds (5.27 percent) and A-rated utility bonds (5.84 percent) to Value Line's

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2 One could use the yield to maturity on other debt investments to measure the interest rate component of the risk premium approach as long as one uses the yield on the same debt investment to measure the expected risk premium component of the risk premium approach. I choose to use the yield on A-rated utility bonds because it is a frequently-used benchmark for utility bond yields.

forecasted 6.0 percent yield on AAA-rated corporate bonds.[3] My analyses produce an estimated risk premium over the yield on A-rated utility bonds equal to 4.77 percent. Adding an estimated ex ante risk premium of 4.77 percent to the 6.57 percent yield to maturity on A-rated utility bonds produces a cost of equity estimate of 11.34 percent using the ex ante risk premium method (see Appendix 4).

B. Ex Post Risk Premium Approach

Q. 67 Please describe your ex post risk premium approach for measuring the required risk premium on an equity investment in WVAWC.

A. 67 I first perform a study of the comparable returns received by bond and stock investors over the 73 years of my study. I estimate the returns on stock and bond portfolios using stock price and dividend yield data on the S&P 500 and bond yield data on Moody's A-rated utility bonds. My study consists of investing one dollar in the S&P 500 and Moody's A-rated utility bonds at the beginning of 1937 and reinvesting the principal plus return each year to 2010. The return associated with each stock portfolio is the sum of the annual dividend yield and capital gain (or loss) which accrue to this portfolio during the year(s) in which it is held. The return associated with the bond portfolio, on the other hand, is the sum of the annual coupon yield and capital gain (or loss) which accrue

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3 Value Line Selection & Opinion, February 26, 2010, p. 3019.

to the bond portfolio during the year(s) in which it is held. The resulting annual returns on the stock and bond portfolios purchased in each year between 1937 and 2010 are shown on Schedule 4. The average annual return on an investment in the S&P 500 stock portfolio is 11.06 percent, while the average annual return on an investment in the Moody's A-rated utility bond portfolio is 6.42 percent. The risk premium on the S&P 500 stock portfolio is, therefore, 4.64 percent.

I also conduct a second study using stock data on the S&P Utilities rather than the S&P 500. The S&P Utility stock portfolio shows an average annual return of 10.5 percent per year. Thus, the return on the S&P Utility stock portfolio exceeded the return on the Moody's A–rated utility bond portfolio by 4.1 percent (see Schedule 5).

Q. 68 Why is it appropriate to perform your ex post risk premium analysis using both the S&P 500 and the S&P Utility Stock indices?

A. 68 I perform my ex post risk premium analysis on both the S&P 500 and the S&P Utilities because I believe utilities today face risks that are somewhere in between the average risk of the S&P Utilities and the S&P 500 over the years 1937 to 2010. Thus, I use the average of the two historically-based risk premiums as my estimate of the required risk premium in my ex post risk premium method.

Q. 69 Why do you analyze investors' experiences over such a long time frame?

A. 69 Because day-to-day stock price movements can be somewhat random, it is inappropriate to rely on short-run movements in stock prices in order to derive a reliable risk premium. Rather than buying and selling frequently in anticipation of highly volatile price movements, most investors employ a strategy of buying and holding a diversified portfolio of stocks. This buy-and-hold strategy will allow an investor to achieve a much more predictable long-run return on stock investments and at the same time will minimize transaction costs. The situation is very similar to the problem of predicting the results of coin tosses. I cannot predict with any reasonable degree of accuracy the result of a single, or even a few, flips of a balanced coin; but I can predict with a good deal of confidence that approximately 50 heads will appear in 100 tosses of this coin. Under these circumstances, it is most appropriate to estimate future experience from long-run evidence of investment performance.

Q. 70 Would your study provide a different ex post risk premium if you started with a different time period?

A. 70 Yes, the ex post risk premium results vary somewhat depending on the historical time period chosen. My policy is to go back as far in history as I can get reliable data. I believe it is most meaningful to begin after the passage and implementation of the Public Utility Holding Company Act of 1935. This Act significantly changed the structure of the public utility industry. Since the Public Utility Holding Company Act of 1935 was not implemented until the beginning of 1937, I feel that numbers taken from before this date are not comparable to those taken after. (The repeal of the 1935 Act does not have a material impact on the structure of the public utility industry; thus, the Act's repeal does not have any impact on my choice of time period.)

Q. 71 Why is it necessary to examine the yield from debt investments in order to determine the investors' required rate of return on equity capital?

A. 71 As previously explained, investors expect to earn a return on their equity investment that exceeds currently available bond yields because the return on equity, being a residual return, is less certain than the yield on bonds and investors must be compensated for this uncertainty. Second, investors' current expectations concerning the amount by which the return on equity will exceed the bond yield will be influenced by historical differences in returns to bond and stock investors. For these reasons, we can estimate investors' current expected returns from an equity investment from knowledge of current bond yields and past differences between returns on stocks and bonds.

Q. 72 Has there been any significant trend in the ex post equity risk premium over the 1937 to 2010 time period of your study?

A. 72 No. Statisticians test for trends in data series by regressing the data observations against time. I have performed such a time series regression on my two data sets of historical risk premiums. Trends in the premium are reflected in the coefficient on the time variable; the greater the trend, the greater the deviation from zero. As shown below in Tables 2 and 3, there is no statistically significant trend in my risk premium data.

TABLE 2

REGRESSION OUTPUT FOR RISK PREMIUM ON S&P 500

Line No.		Intercept	Time	Adjusted R Square	F
1	Coefficient	2.691	(0.001)	0.015	2.07
2	T Statistic	1.465	(1.440)		

TABLE 3

REGRESSION OUTPUT FOR RISK PREMIUM ON S&P UTILITIES

Line No.		Intercept	Time	Adjusted R Square	F
1	Coefficient	1.784	(0.001)	0.002	1.12
2	T Statistic	1.085	(1.060)		

Q. 73 Is your conclusion that there is no significant trend in the equity risk premium supported in the financial literature?

A. 73 Yes. Ibbotson® SBBI® 2010 Valuation Yearbook ("Ibbotson® SBBI®") published by Morningstar, Inc., contains an analysis of "trends" in historical risk premium data. Ibbotson® SBBI® uses correlation analysis to determine if there is any pattern or "trend" in risk premiums over time. This analysis also demonstrates that there are no trends in risk premiums over time.

Q. 74 Why is it significant that historical risk premiums have no trend or other statistical pattern over time?

A. 74 The absence of any discernable trend makes averaging historical risk premiums the most reasonable method of estimating the future expected risk premium based on historical data. As noted in Ibbotson® SBBI®:

> The significance of this evidence is that the realized equity risk premium next year will not be dependent on the realized equity risk premium from this year. That is, there is no discernable pattern in the realized equity risk premium—it is virtually impossible to forecast next year's realized risk premium based on the premium of the previous year. For example, if this year's difference between the riskless rate and the return on the stock market is higher than last year's, that does not imply that next year's will be higher than this year's. It is as likely to be higher as it is lower. The best estimate of the expected value of a variable that has behaved randomly in the past is the average (or arithmetic mean) of its past values. [Ibbotson® SBBI®, page 58.]

Q. 75 What conclusions do you draw from your ex post risk premium analyses about the required return on an equity investment in WVAWC?

A. 75 My studies provide strong evidence that investors today require an equity return of approximately 4.1 to 4.6 percentage points above the expected yield on A-rated utility bonds. As described above, the forecasted yield on A-rated utility bonds at 2010 is 6.57 percent. Adding a 4.1 to 4.6 percentage point risk premium to a yield of 6.57 percent on A-rated utility bonds, I obtain an expected return on equity in the range 10.6 percent to 11.2 percent, with a midpoint of 10.9 percent. Because the ex post methodology does not reflect flotation costs, I add a 25 basis-point allowance for flotation costs, which I determine by calculating the difference in my DCF results with and without a flotation cost allowance. Adding a 25 basis-point allowance for flotation costs, I obtain an estimate of 11.2 percent as the cost of equity for WVAWC using the ex post risk premium method.

VIII. CAPITAL ASSET PRICING MODEL

Q. 76 What is the CAPM?

A. 76 The CAPM is an equilibrium model of the security markets in which the expected or required return on a given security is equal to the risk-free rate of interest, plus the company equity "beta," times the market risk premium:

Cost of equity = Risk-free rate + Equity beta x Market risk premium

The risk-free rate in this equation is the expected rate of return on a risk-free government security, the equity beta is a measure of the company's risk relative to the market as a whole, and the market risk premium is the premium investors require to invest in the market basket of all securities compared to the risk-free security.

Q. 77 How do you use the CAPM to estimate the cost of equity for your proxy companies?

A. 77 The CAPM requires an estimate of the risk-free rate, the company-specific risk factor or beta, and the expected return on the market portfolio. For my estimate of the risk-free rate, I use the forecast yield to maturity on 20-year Treasury bonds[4] of 4.75 percent, using data from Value Line.[5] For my estimate of the company-specific risk, or beta, I use the average Value Line beta of 0.71 for my proxy water companies. For my estimate of the expected risk premium on the market portfolio, I use two approaches. First, I use the Ibbotson® SBBI® 6.7 percent risk premium on the market portfolio, which is measured from the difference between the arithmetic mean return on the S&P 500 (11.8 percent) and the income return on 20-year Treasury bonds (5.2 percent), as reported by Ibbotson® SBBI® (11.8 – 5.2 = 6.7) (apparent discrepancy due to rounding).[6] Second, I estimate the risk premium on the market portfolio from the difference between the DCF cost of equity for the S&P 500 (12.5 percent) and the forecast yield to maturity on 20-year Treasury bonds, (4.75 percent). My second approach produces a risk premium equal to 7.75 percent (12.5 - 4.75 = 7.75).

Q. 78 Why do you recommend that the risk premium on the market portfolio be estimated using the arithmetic mean return on the S&P 500?

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4 I use the 20-year Treasury bond to estimate the risk-free rate because SBBI estimates the risk premium using 20-year Treasury bonds and the analyst should use the same maturity to estimate the risk-free rate as is used to estimate the risk premium on the market portfolio.

5 Value Line Investment Survey, Selection & Opinion, February 26, 2010, p. 3019. Value Line projects a yield on long-term Treasury bonds at 2011 equal to 4.9 percent. The current spread between the average March yield on 30-year Treasury bonds (4.64 percent) and 20-year Treasury bonds (4.49 percent) is 15 basis points. Subtracting 15 basis points from the 4.9 percent forecasted yield on long-term Treasury bonds produces a forecasted yield of 4.75 percent for 20-year Treasury bonds.

6 *See* 2010 Ibbotson® SBBI® 2010 Valuation Yearbook, p. 23, published by Morningstar®.

A. 78 As explained in Ibbotson® SBBI®, the arithmetic mean return is the best approach for calculating the return investors expect to receive in the future:

> The equity risk premium data presented in this book are arithmetic average risk premia as opposed to geometric average risk premia. The arithmetic average equity risk premium can be demonstrated to be most appropriate when discounting future cash flows. For use as the expected equity risk premium in either the CAPM or the building block approach, the arithmetic mean or the simple difference of the arithmetic means of stock market returns and riskless rates is the relevant number. This is because both the CAPM and the building block approach are additive models, in which the cost of capital is the sum of its parts. The geometric average is more appropriate for reporting past performance, since it represents the compound average return. [SBBI, p. 56.]

A discussion of the importance of using arithmetic mean returns in the context of CAPM or risk premium studies is contained in Schedule 6.

Q. 79 Why do you recommend that the risk premium on the market portfolio be estimated using the income return on 20-year Treasury bonds rather than the total return on these bonds?

A. 79 As discussed above, the CAPM requires an estimate of the risk-free rate of interest. When Treasury bonds are issued, the income return on the bond is risk free, but the total return, which includes both income and capital gains or losses, is not. Thus, the income return should be used in the CAPM because it is only the income return that is risk free.

Q. 80 What CAPM result do you obtain when you estimate the expected return on the market portfolio from the arithmetic mean difference

between the return on the market and the yield on 20-year Treasury bonds?

A. 80 I obtain a CAPM estimate of 9.8 percent [see Schedule 7].

Q. 81 What CAPM result do you obtain when you estimate the risk premium on the market portfolio by applying the DCF model to the S&P 500?

A. 81 I obtain a CAPM result of 10.5 percent [see Schedule 8].

Q. 82 Can a reasonable application of the CAPM produce higher cost of equity results than you have just reported?

A. 82 Yes. The CAPM tends to underestimate the cost of equity for small market capitalization companies such as my water companies.

Q. 83 Does the finance literature support an adjustment to the CAPM equation to account for a company's size as measured by market capitalization supported in the finance literature?

A. 83 Yes, Ibbotson® SBBI® supports such an adjustment. Their estimates of the size premium required to be added to the basic CAPM cost of equity are shown below in Table 4.

TABLE 4
IBBOTSON® ESTIMATES OF PREMIUMS FOR COMPANY SIZE[7]

DECILE	SMALLEST COMPANY	LARGEST COMPANY	SIZE PREMIUM RETURN IN EXCESS OF CAPM
Mid-Cap (3-5)	1,602.429	5,936.147	1.08%
Low-Cap (6-8)	432.175	1,600.169	1.85%
Micro-Cap (9-10)	1.007	431.256	3.99%

Q. 84 Are there other reasons to believe that the CAPM may produce cost of equity estimates at this time that are unreasonably low?

A. 84 Yes. There is considerable evidence in the finance literature that the CAPM tends to underestimate the cost of equity for companies whose equity beta is less than 1.0 and to overestimate the cost of equity for companies whose equity beta is greater than 1.0.[8]

Q. 85 Can you briefly summarize the evidence that the CAPM underestimates the required returns for securities or portfolios with betas less than 1.0 and overestimates required returns for securities or portfolios with betas greater than 1.0?

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7 Ibbotson® SBBI® 2010 Valuation Yearbook.

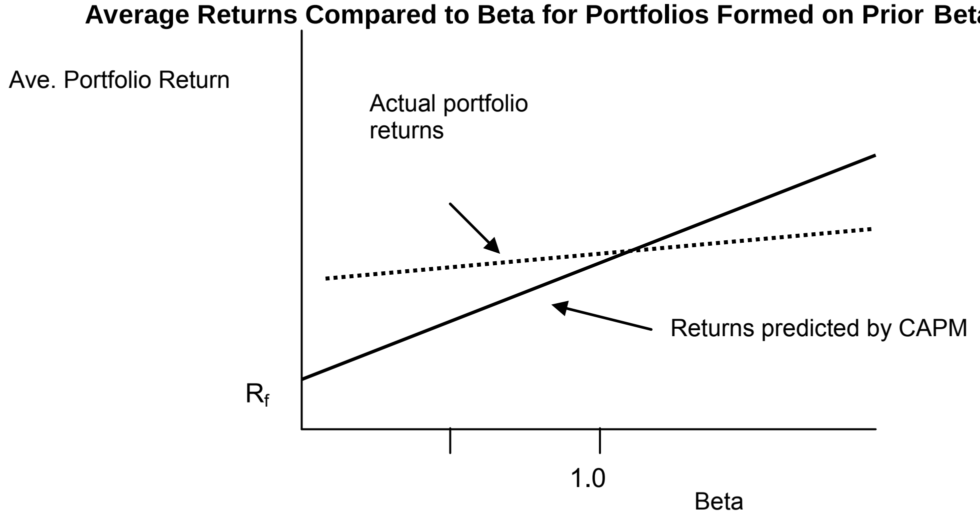
8 *See*, for example, Fischer Black, Michael C. Jensen, and Myron Scholes, "The Capital Asset Pricing Model: Some Empirical Tests," in *Studies in the Theory of Capital Markets*, M. Jensen, ed. New York: Praeger, 1972; Eugene Fama and James MacBeth, "Risk, Return, and Equilibrium: Empirical Tests," *Journal of Political Economy* 81 (1973), pp. 607-36; Robert Litzenberger and Krishna Ramaswamy, "The Effect of Personal Taxes and Dividends on Capital Asset Prices: Theory and Empirical Evidence," *Journal of Financial Economics* 7 (1979), pp. 163-95.; Rolf Banz, "The Relationship between Return and Market Value of Common Stocks," *Journal of Financial Economics* (March 1981), pp. 3-18; and Eugene Fama and Kenneth French, "The Cross-Section of Expected Returns," *Journal of Finance* (June 1992), pp. 427-465.

A. 85 Yes. The CAPM conjectures that security returns increase with increases in security betas in line with the equation

$$ER_i = R_f + \beta_i \left[ER_m - R_f\right],$$

where ER_i is the expected return on security or portfolio *i*, R_f is the risk-free rate, $ER_m - R_f$ is the expected risk premium on the market portfolio, and β_i is a measure of the risk of investing in security or portfolio *i*. If the CAPM correctly predicts the relationship between risk and return in the marketplace, then the realized returns on portfolios of securities and the corresponding portfolio betas should lie on the solid straight line with intercept R_f and slope $[R_m - R_f]$ shown below.

Figure 1
Average Returns Compared to Beta for Portfolios Formed on Prior Beta



Financial scholars have found that the relationship between realized returns and betas is inconsistent with the relationship posited by the CAPM. As described in Fama and French (1992) and Fama and

French (2004), the actual relationship between portfolio betas and returns is shown by the dotted line in the figure above. Although financial scholars disagree on the reasons why the return/beta relationship looks more like the dotted line in the figure than the solid line, they generally agree that the dotted line lies above the solid line for portfolios with betas less than 1.0 and below the solid line for portfolios with betas greater than 1.0. Thus, in practice, scholars generally agree that the CAPM underestimates portfolio returns for companies with betas less than 1.0, and overestimates portfolio returns for portfolios with betas greater than 1.0.

Q. 86 What conclusions do you reach from your review of the literature on the CAPM to predict the relationship between risk and return in the marketplace?

A. 86 I conclude that the financial literature strongly supports the proposition that the CAPM underestimates the cost of equity for companies such as public utilities with betas less than 1.0. I also conclude that the results of the CAPM should be given little or no weight in this proceeding because the average beta for my proxy group of water companies is significantly less than 1.0.

IX. FAIR RATE OF RETURN ON EQUITY

Q. 87 Please summarize your findings concerning WVAWC's cost of equity.

A. 87 Based on my application of the methods I describe above to my comparable companies, I conclude that my comparable companies' cost of equity is in the range 10.9 percent to 12.3 percent.

TABLE 5
COST OF EQUITY MODEL RESULTS

METHOD	MODEL RESULT
DCF--Water	12.3%
DCF--LDC	10.9%
Ex Ante Risk Premium	11.3%
Ex Post Risk Premium	11.2%
Range of Results	10.9% - 12.3%

Q. 88 What is your recommendation as to a fair rate of return on common equity for WVAWC?

A. 88 I recommend that WVAWC be allowed a fair rate of return on common equity in the range 10.9 percent to 12.3 percent.

Q. 89 Does this conclude your testimony?

A. 89 Yes, it does.

LIST OF SCHEDULES AND APPENDICES

Schedule 1	Summary of Discounted Cash Flow Analysis for Water Companies
Schedule 2	Summary of Discounted Cash Flow Analysis for Natural Gas Companies
Schedule 3	Comparison of the DCF Expected Return on an Investment in Natural Gas Companies to the Interest Rate on Moody's A-Rated Utility Bonds
Schedule 4	Comparative Returns on S&P 500 Stock Index and Moody's A-Rated Bonds 1937—2010
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Schedule 6	Using the Arithmetic Mean to Estimate the Cost of Equity Capital
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Appendix 1	Qualifications of James H. Vander Weide
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Appendix 4	Ex Ante Risk Premium Method
Appendix 5	Ex Post Risk Premium Method

WEST VIRGINIA AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 1
SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS
FOR PROXY WATER COMPANY COMPANIES

LINE NO.	COMPANY	D_4	3-MO. AVE. PRICE	DIVIDEND	I/B/E/S GROWTH	VALUE LINE FORECAST EPS GROWTH	AVERAGE GROWTH	MARKET VALUE	COST OF EQUITY
1	Amer. States Water	0.260	33.625	1.129	4.00%	9.5%	6.8%	667	10.3%
2	Amer. Water Works	0.210	22.023	0.960	9.92%	NMF	9.9%	3,869	14.5%
3	Aqua America	0.145	17.131	0.640	8.33%	10.0%	9.2%	2,455	13.1%
4	Artesian Res. 'A'	0.187	17.948	0.804	6.00%		6.0%	120	10.7%
4	California Water	0.298	36.608	1.320	6.00%	8.5%	7.3%	808	11.0%
5	Connecticut Water	0.228	23.298	1.037		9.0%	9.0%	202	13.7%
6	Middlesex Water	0.180	17.050	0.820		9.0%	9.0%	239	14.1%
7	York Water	0.128	13.843	0.564	6.00%	7.5%	6.8%	178	11.0%
8	Market-weighted Ave.								13.3%
9	Average								12.3%

Notes:

d_0	=	Most recent quarterly dividend.
d_1,d_2,d_3,d_4	=	Next four quarterly dividends, calculated by multiplying the last four quarterly dividends per *Value Line* by the factor (1 + g).
P_0	=	Average of the monthly high and low stock prices during the three months ending March 2010 per Thomson Reuters.
FC	=	Flotation costs expressed as a percent of gross proceeds.
g	=	Average of I/B/E/S and Value Line forecasts of future earnings growth March 2010.
k	=	Cost of equity using the quarterly version of the DCF model shown by the formula below:

$$k = \frac{d_1(1+k)^{.75} + d_2(1+k)^{.50} + d_3(1+k)^{.25} + d_4}{P_0(1-FC)} + g$$

WEST VIRGINIA AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 2
SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS
FOR NATURAL GAS DISTRIBUTION COMPANIES

LINE NO.	COMPANY	D_0	P_0	DIVIDEND	GROWTH	COST OF EQUITY
1	AGL Resources	0.440	36.405	1.888	5.07%	10.5%
2	Atmos Energy	0.335	28.110	1.434	4.20%	9.6%
3	Nicor Inc.	0.465	41.380	2.007	4.30%	9.4%
4	National Fuel Gas	0.335	49.633	1.509	8.10%	11.3%
5	NiSource Inc.	0.230	15.060	0.982	3.00%	9.9%
6	Northwest Nat. Gas	0.415	44.379	1.769	5.50%	9.7%
7	ONEOK Inc.	0.440	44.172	1.877	7.23%	11.7%
8	Piedmont Natural Gas	0.270	26.075	1.206	7.00%	11.9%
9	South Jersey Inds.	0.330	39.410	1.480	11.67%	15.6%
10	Market-weighted Average					10.9%[9]
11	Average					11.1%

Notes:

d_0	=	Most recent quarterly dividend.
d_1,d_2,d_3,d_4	=	Next four quarterly dividends, calculated by multiplying the last four quarterly dividends per *Value Line* by the factor (1 + g).
P_0	=	Average of the monthly high and low stock prices during the three months ending March 2010 from Thomson Reuters.
FC	=	Flotation costs expressed as a percent of gross proceeds.
g	=	I/B/E/S forecast of future earnings growth March 2010.
k	=	Cost of equity using the quarterly version of the DCF model shown by the formula below:

$$k = \frac{d_1(1+k)^{.75} + d_2(1+k)^{.50} + d_3(1+k)^{.25} + d_4}{P_0(1-FC)} + g$$

9 This result excludes outlier results for EQT (20.9 percent), Energen (6.4 percent), Questar (4.6 percent), and Southwest Gas (7.0 percent). The outlier results are excluded using criteria established by the FERC. The high outlier result is excluded because it exceeds 17.7 percent, and the low outlier results are excluded on the basis that they are less than 100 basis points above the average bond yield for the companies' bond ratings. *See*, for example, *SCE* and *New England ISO* decisions. In *SCE*, the Commission excludes a low return of 8.42 percent at a time when the average bond yield is 8.06 percent. As the Commission states, "investors generally cannot be expected to purchase stock if debt, which has less risk than stock, yields essentially the same return, this low end-return cannot be considered reliable in this case." 92 FERC at p. 61,266. In *New England ISO*, the Commission excludes a high result of 17.7 percent. *See* 117 FERC at PP 8 and 16. If these outlier results had not been excluded, the market-weighted average result would have been 10.7 percent.

SCHEDULE 2-2

WEST VIRGINIA AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 3
COMPARISON OF DCF EXPECTED RETURN
ON AN EQUITY INVESTMENT IN NATURAL GAS DISTRIBUTION COMPANIES
TO THE INTEREST RATE ON A-RATED UTILITY BONDS

LINE NO.	DATE	DCF	BOND YIELD	RISK PREMIUM
1	Jun-98	0.1154	0.0703	0.0451
2	Jul-98	0.1186	0.0703	0.0483
3	Aug-98	0.1234	0.0700	0.0534
4	Sep-98	0.1273	0.0693	0.0580
5	Oct-98	0.1260	0.0696	0.0564
6	Nov-98	0.1211	0.0703	0.0508
7	Dec-98	0.1185	0.0691	0.0494
8	Jan-99	0.1195	0.0697	0.0498
9	Feb-99	0.1243	0.0709	0.0534
10	Mar-99	0.1257	0.0726	0.0531
11	Apr-99	0.1260	0.0722	0.0538
12	May-99	0.1221	0.0747	0.0474
13	Jun-99	0.1208	0.0774	0.0434
14	Jul-99	0.1222	0.0771	0.0451
15	Aug-99	0.1220	0.0791	0.0429
16	Sep-99	0.1226	0.0793	0.0433
17	Oct-99	0.1233	0.0806	0.0427
18	Nov-99	0.1240	0.0794	0.0446
19	Dec-99	0.1280	0.0814	0.0466
20	Jan-00	0.1301	0.0835	0.0466
21	Feb-00	0.1344	0.0825	0.0519
22	Mar-00	0.1344	0.0828	0.0516
23	Apr-00	0.1316	0.0829	0.0487
24	May-00	0.1292	0.0870	0.0422
25	Jun-00	0.1295	0.0836	0.0459
26	Jul-00	0.1317	0.0825	0.0492
27	Aug-00	0.1290	0.0813	0.0477
28	Sep-00	0.1257	0.0823	0.0434
29	Oct-00	0.1260	0.0814	0.0446
30	Nov-00	0.1251	0.0811	0.0440
31	Dec-00	0.1239	0.0784	0.0455
32	Jan-01	0.1261	0.0780	0.0481
33	Feb-01	0.1261	0.0774	0.0487

LINE NO.	DATE	DCF	BOND YIELD	RISK PREMIUM
34	Mar-01	0.1275	0.0768	0.0507
35	Apr-01	0.1227	0.0794	0.0433
36	May-01	0.1302	0.0799	0.0503
37	Jun-01	0.1304	0.0785	0.0519
38	Jul-01	0.1338	0.0778	0.0560
39	Aug-01	0.1327	0.0759	0.0568
40	Sep-01	0.1268	0.0775	0.0493
41	Oct-01	0.1268	0.0763	0.0505
42	Nov-01	0.1268	0.0757	0.0511
43	Dec-01	0.1254	0.0783	0.0471
44	Jan-02	0.1236	0.0766	0.0470
45	Feb-02	0.1241	0.0754	0.0487
46	Mar-02	0.1189	0.0776	0.0413
47	Apr-02	0.1159	0.0757	0.0402
48	May-02	0.1162	0.0752	0.0410
49	Jun-02	0.1170	0.0741	0.0429
50	Jul-02	0.1242	0.0731	0.0511
51	Aug-02	0.1234	0.0717	0.0517
52	Sep-02	0.1260	0.0708	0.0552
53	Oct-02	0.1250	0.0723	0.0527
54	Nov-02	0.1221	0.0714	0.0507
55	Dec-02	0.1216	0.0707	0.0509
56	Jan-03	0.1219	0.0706	0.0513
57	Feb-03	0.1232	0.0693	0.0539
58	Mar-03	0.1195	0.0679	0.0516
59	Apr-03	0.1162	0.0664	0.0498
60	May-03	0.1126	0.0636	0.0490
61	Jun-03	0.1114	0.0621	0.0493
62	Jul-03	0.1127	0.0657	0.0470
63	Aug-03	0.1139	0.0678	0.0461
64	Sep-03	0.1127	0.0656	0.0471
65	Oct-03	0.1123	0.0643	0.0480
66	Nov-03	0.1089	0.0637	0.0452
67	Dec-03	0.1071	0.0627	0.0444
68	Jan-04	0.1059	0.0615	0.0444
69	Feb-04	0.1039	0.0615	0.0424
70	Mar-04	0.1037	0.0597	0.0440
71	Apr-04	0.1041	0.0635	0.0406

LINE NO.	DATE	DCF	BOND YIELD	RISK PREMIUM
72	May-04	0.1045	0.0662	0.0383
73	Jun-04	0.1036	0.0646	0.0390
74	Jul-04	0.1011	0.0627	0.0384
75	Aug-04	0.1008	0.0614	0.0394
76	Sep-04	0.0976	0.0598	0.0378
77	Oct-04	0.0974	0.0594	0.0380
78	Nov-04	0.0962	0.0597	0.0365
79	Dec-04	0.0970	0.0592	0.0378
80	Jan-05	0.0990	0.0578	0.0412
81	Feb-05	0.0979	0.0561	0.0418
82	Mar-05	0.0979	0.0583	0.0396
83	Apr-05	0.0988	0.0564	0.0424
84	May-05	0.0981	0.0553	0.0427
85	Jun-05	0.0976	0.0540	0.0436
86	Jul-05	0.0966	0.0551	0.0415
87	Aug-05	0.0969	0.0550	0.0419
88	Sep-05	0.0980	0.0552	0.0428
89	Oct-05	0.0990	0.0579	0.0411
90	Nov-05	0.1049	0.0588	0.0461
91	Dec-05	0.1045	0.0580	0.0465
92	Jan-06	0.0982	0.0575	0.0407
93	Feb-06	0.1124	0.0582	0.0542
94	Mar-06	0.1127	0.0598	0.0529
95	Apr-06	0.1100	0.0629	0.0471
96	May-06	0.1056	0.0642	0.0414
97	Jun-06	0.1049	0.0640	0.0409
98	Jul-06	0.1087	0.0637	0.0450
99	Aug-06	0.1041	0.0620	0.0421
100	Sep-06	0.1053	0.0600	0.0453
101	Oct-06	0.1030	0.0598	0.0432
102	Nov-06	0.1033	0.0580	0.0453
103	Dec-06	0.1035	0.0581	0.0454
104	Jan-07	0.1013	0.0596	0.0417
105	Feb-07	0.1018	0.0590	0.0428
106	Mar-07	0.1018	0.0585	0.0433
107	Apr-07	0.1007	0.0597	0.0410
108	May-07	0.0967	0.0599	0.0368
109	Jun-07	0.0970	0.0630	0.0340

LINE NO.	DATE	DCF	BOND YIELD	RISK PREMIUM
110	Jul-07	0.1006	0.0625	0.0381
111	Aug-07	0.1021	0.0624	0.0397
112	Sep-07	0.1014	0.0618	0.0396
113	Oct-07	0.1080	0.0611	0.0469
114	Nov-07	0.1083	0.0597	0.0486
115	Dec-07	0.1084	0.0616	0.0468
116	Jan-08	0.1113	0.0602	0.0511
117	Feb-08	0.1139	0.0621	0.0518
118	Mar-08	0.1147	0.0621	0.0526
119	Apr-08	0.1167	0.0629	0.0538
120	May-08	0.1069	0.0627	0.0442
121	Jun-08	0.1062	0.0638	0.0424
122	Jul-08	0.1086	0.0640	0.0446
123	Aug-08	0.1123	0.0637	0.0486
124	Sep-08	0.1130	0.0649	0.0481
125	Oct-08	0.1213	0.0756	0.0457
126	Nov-08	0.1221	0.0760	0.0461
127	Dec-08	0.1162	0.0654	0.0508
128	Jan-09	0.1131	0.0639	0.0492
129	Feb-09	0.1155	0.0630	0.0524
130	Mar-09	0.1198	0.0642	0.0556
131	Apr-09	0.1146	0.0648	0.0498
132	May-09	0.1225	0.0649	0.0576
133	Jun-09	0.1208	0.0620	0.0588
134	Jul-09	0.1145	0.0597	0.0548
135	Aug-09	0.1109	0.0571	0.0538
136	Sep-09	0.1109	0.0553	0.0556
137	Oct-09	0.1146	0.0555	0.0592
138	Nov-09	0.1148	0.0564	0.0584
139	Dec-09	0.1123	0.0579	0.0544
140	Jan-10	0.1198	0.0577	0.0621
141	Feb-10	0.1167	0.0587	0.0580
142	Mar-10	0.1074	0.0584	0.0490

Notes: A-rated utility bond yield information from the Mergent Bond Record. DCF results are calculated using a quarterly DCF model as follows:

d_0	=	Latest quarterly dividend per *Value Line*.
P_0	=	Average of the monthly high and low stock prices for each month from Thomson Reuters.
FC	=	Flotation costs expressed as a percent of gross proceeds.
g	=	I/B/E/S forecast of future earnings growth for each month.
k	=	Cost of equity using the quarterly version of the DCF model shown by the formula below:

$$k = \left[\frac{d_0 (1+g)^{\frac{1}{4}}}{P_0 (1-FC)} + (1+g)^{\frac{1}{4}} \right]^4 - 1$$

WEST VIRGINIA AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 4
COMPARATIVE RETURNS ON S&P 500 STOCK INDEX
AND MOODY'S A-RATED BONDS 1937 – 2010

LINE NO.	YEAR	S&P 500 STOCK PRICE	STOCK DIVIDEND YIELD	STOCK RETURN	A-RATED BOND PRICE	BOND RETURN
1	2010	1,123.58	0.0203		$75.02	
2	2009	865.58	0.0310	32.91%	$68.43	15.48%
3	2008	1,380.33	0.0211	-35.19%	$72.25	0.24%
4	2007	1,424.16	0.0181	-1.27%	$72.91	4.59%
5	2006	1,278.72	0.0183	13.20%	$75.25	2.20%
6	2005	1,181.41	0.0177	10.01%	$74.91	5.80%
7	2004	1,132.52	0.0162	5.94%	$70.87	11.34%
8	2003	895.84	0.0180	28.22%	$62.26	20.27%
9	2002	1,140.21	0.0138	-20.05%	$57.44	15.35%
10	2001	1,335.63	0.0116	-13.47%	$56.40	8.93%
11	2000	1,425.59	0.0118	-5.13%	$52.60	14.82%
12	1999	1,248.77	0.0130	15.46%	$63.03	-10.20%
13	1998	963.35	0.0162	31.25%	$62.43	7.38%
14	1997	766.22	0.0195	27.68%	$56.62	17.32%
15	1996	614.42	0.0231	27.02%	$60.91	-0.48%
16	1995	465.25	0.0287	34.93%	$50.22	29.26%
17	1994	472.99	0.0269	1.05%	$60.01	-9.65%
18	1993	435.23	0.0288	11.56%	$53.13	20.48%
19	1992	416.08	0.0290	7.50%	$49.56	15.27%
20	1991	325.49	0.0382	31.65%	$44.84	19.44%
21	1990	339.97	0.0341	-0.85%	$45.60	7.11%
22	1989	285.41	0.0364	22.76%	$43.06	15.18%
23	1988	250.48	0.0366	17.61%	$40.10	17.36%
24	1987	264.51	0.0317	-2.13%	$48.92	-9.84%
25	1986	208.19	0.0390	30.95%	$39.98	32.36%
26	1985	171.61	0.0451	25.83%	$32.57	35.05%
27	1984	166.39	0.0427	7.41%	$31.49	16.12%
28	1983	144.27	0.0479	20.12%	$29.41	20.65%
29	1982	117.28	0.0595	28.96%	$24.48	36.48%
30	1981	132.97	0.0480	-7.00%	$29.37	-3.01%
31	1980	110.87	0.0541	25.34%	$34.69	-3.81%
32	1979	99.71	0.0533	16.52%	$43.91	-11.89%
33	1978	90.25	0.0532	15.80%	$49.09	-2.40%
34	1977	103.80	0.0399	-9.06%	$50.95	4.20%
35	1976	96.86	0.0380	10.96%	$43.91	25.13%
36	1975	72.56	0.0507	38.56%	$41.76	14.75%
37	1974	96.11	0.0364	-20.86%	$52.54	-12.91%
38	1973	118.40	0.0269	-16.14%	$58.51	-3.37%

LINE NO.	YEAR	S&P 500 STOCK PRICE	STOCK DIVIDEND YIELD	STOCK RETURN	A-RATED BOND PRICE	BOND RETURN
39	1972	103.30	0.0296	17.58%	$56.47	10.69%
40	1971	93.49	0.0332	13.81%	$53.93	12.13%
41	1970	90.31	0.0356	7.08%	$50.46	14.81%
42	1969	102.00	0.0306	-8.40%	$62.43	-12.76%
43	1968	95.04	0.0313	10.45%	$66.97	-0.81%
44	1967	84.45	0.0351	16.05%	$78.69	-9.81%
45	1966	93.32	0.0302	-6.48%	$86.57	-4.48%
46	1965	86.12	0.0299	11.35%	$91.40	-0.91%
47	1964	76.45	0.0305	15.70%	$92.01	3.68%
48	1963	65.06	0.0331	20.82%	$93.56	2.61%
49	1962	69.07	0.0297	-2.84%	$89.60	8.89%
50	1961	59.72	0.0328	18.94%	$89.74	4.29%
51	1960	58.03	0.0327	6.18%	$84.36	11.13%
52	1959	55.62	0.0324	7.57%	$91.55	-3.49%
53	1958	41.12	0.0448	39.74%	$101.22	-5.60%
54	1957	45.43	0.0431	-5.18%	$100.70	4.49%
55	1956	44.15	0.0424	7.14%	$113.00	-7.35%
56	1955	35.60	0.0438	28.40%	$116.77	0.20%
57	1954	25.46	0.0569	45.52%	$112.79	7.07%
58	1953	26.18	0.0545	2.70%	$114.24	2.24%
59	1952	24.19	0.0582	14.05%	$113.41	4.26%
60	1951	21.21	0.0634	20.39%	$123.44	-4.89%
61	1950	16.88	0.0665	32.30%	$125.08	1.89%
62	1949	15.36	0.0620	16.10%	$119.82	7.72%
63	1948	14.83	0.0571	9.28%	$118.50	4.49%
64	1947	15.21	0.0449	1.99%	$126.02	-2.79%
65	1946	18.02	0.0356	-12.03%	$126.74	2.59%
66	1945	13.49	0.0460	38.18%	$119.82	9.11%
67	1944	11.85	0.0495	18.79%	$119.82	3.34%
68	1943	10.09	0.0554	22.98%	$118.50	4.49%
69	1942	8.93	0.0788	20.87%	$117.63	4.14%
70	1941	10.55	0.0638	-8.98%	$116.34	4.55%
71	1940	12.30	0.0458	-9.65%	$112.39	7.08%
72	1939	12.50	0.0349	1.89%	$105.75	10.05%
73	1938	11.31	0.0784	18.36%	$99.83	9.94%
74	1937	17.59	0.0434	-31.36%	$103.18	0.63%
75	Average	Stocks		11.06%		
76		Bonds		6.42%		
77		Risk Premium		4.64%		

Note: See Appendix 4 for an explanation of how stock and bond returns are derived and the source of the data presented.

WEST VIRGINIA AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 5
COMPARATIVE RETURNS ON S&P UTILITY STOCK INDEX
AND MOODY'S A-RATED BONDS 1937 – 2010

LINE NO.	YEAR	S&P UTILITY STOCK PRICE	STOCK DIVIDEND YIELD	STOCK RETURN	A-RATED BOND YIELD	BOND RETURN
1	2010				$75.02	
2	2009			10.71%	$68.43	15.48%
3	2008			-25.90%	$72.25	0.24%
4	2007			16.56%	$72.91	4.59%
5	2006			20.76%	$75.25	2.20%
6	2005			16.05%	$74.91	5.80%
7	2004			22.84%	$70.87	11.34%
8	2003			23.48%	$62.26	20.27%
9	2002			-14.73%	$57.44	15.35%
10						
11	2002	243.79	0.0362		$57.44	
12	2001	307.70	0.0287	-17.90%	$56.40	8.93%
13	2000	239.17	0.0413	32.78%	$52.60	14.82%
14	1999	253.52	0.0394	-1.72%	$63.03	-10.20%
15	1998	228.61	0.0457	15.47%	$62.43	7.38%
16	1997	201.14	0.0492	18.58%	$56.62	17.32%
17	1996	202.57	0.0454	3.83%	$60.91	-0.48%
18	1995	153.87	0.0584	37.49%	$50.22	29.26%
19	1994	168.70	0.0496	-3.83%	$60.01	-9.65%
20	1993	159.79	0.0537	10.95%	$53.13	20.48%
21	1992	149.70	0.0572	12.46%	$49.56	15.27%
22	1991	138.38	0.0607	14.25%	$44.84	19.44%
23	1990	146.04	0.0558	0.33%	$45.60	7.11%
24	1989	114.37	0.0699	34.68%	$43.06	15.18%
25	1988	106.13	0.0704	14.80%	$40.10	17.36%
26	1987	120.09	0.0588	-5.74%	$48.92	-9.84%
27	1986	92.06	0.0742	37.87%	$39.98	32.36%
28	1985	75.83	0.0860	30.00%	$32.57	35.05%
29	1984	68.50	0.0925	19.95%	$31.49	16.12%
30	1983	61.89	0.0948	20.16%	$29.41	20.65%
31	1982	51.81	0.1074	30.20%	$24.48	36.48%
32	1981	52.01	0.0978	9.40%	$29.37	-3.01%
33	1980	50.26	0.0953	13.01%	$34.69	-3.81%
34	1979	50.33	0.0893	8.79%	$43.91	-11.89%
35	1978	52.40	0.0791	3.96%	$49.09	-2.40%
36	1977	54.01	0.0714	4.16%	$50.95	4.20%
37	1976	46.99	0.0776	22.70%	$43.91	25.13%
38	1975	38.19	0.0920	32.24%	$41.76	14.75%
39	1974	48.60	0.0713	-14.29%	$52.54	-12.91%
40	1973	60.01	0.0556	-13.45%	$58.51	-3.37%
41	1972	60.19	0.0542	5.12%	$56.47	10.69%
42	1971	63.43	0.0504	-0.07%	$53.93	12.13%

LINE NO.	YEAR	S&P UTILITY STOCK PRICE	STOCK DIVIDEND YIELD	STOCK RETURN	A-RATED BOND YIELD	BOND RETURN
43	1970	55.72	0.0561	19.45%	$50.46	14.81%
44	1969	68.65	0.0445	-14.38%	$62.43	-12.76%
45	1968	68.02	0.0435	5.28%	$66.97	-0.81%
46	1967	70.63	0.0392	0.22%	$78.69	-9.81%
47	1966	74.50	0.0347	-1.72%	$86.57	-4.48%
48	1965	75.87	0.0315	1.34%	$91.40	-0.91%
49	1964	67.26	0.0331	16.11%	$92.01	3.68%
50	1963	63.35	0.0330	9.47%	$93.56	2.61%
51	1962	62.69	0.0320	4.25%	$89.60	8.89%
52	1961	52.73	0.0358	22.47%	$89.74	4.29%
53	1960	44.50	0.0403	22.52%	$84.36	11.13%
54	1959	43.96	0.0377	5.00%	$91.55	-3.49%
55	1958	33.30	0.0487	36.88%	$101.22	-5.60%
56	1957	32.32	0.0487	7.90%	$100.70	4.49%
57	1956	31.55	0.0472	7.16%	$113.00	-7.35%
58	1955	29.89	0.0461	10.16%	$116.77	0.20%
59	1954	25.51	0.0520	22.37%	$112.79	7.07%
60	1953	24.41	0.0511	9.62%	$114.24	2.24%
61	1952	22.22	0.0550	15.36%	$113.41	4.26%
62	1951	20.01	0.0606	17.10%	$123.44	-4.89%
63	1950	20.20	0.0554	4.60%	$125.08	1.89%
64	1949	16.54	0.0570	27.83%	$119.82	7.72%
65	1948	16.53	0.0535	5.41%	$118.50	4.49%
66	1947	19.21	0.0354	-10.41%	$126.02	-2.79%
67	1946	21.34	0.0298	-7.00%	$126.74	2.59%
68	1945	13.91	0.0448	57.89%	$119.82	9.11%
69	1944	12.10	0.0569	20.65%	$119.82	3.34%
70	1943	9.22	0.0621	37.45%	$118.50	4.49%
71	1942	8.54	0.0940	17.36%	$117.63	4.14%
72	1941	13.25	0.0717	-28.38%	$116.34	4.55%
73	1940	16.97	0.0540	-16.52%	$112.39	7.08%
74	1939	16.05	0.0553	11.26%	$105.75	10.05%
75	1938	14.30	0.0730	19.54%	$99.83	9.94%
76	1937	24.34	0.0432	-36.93%	$103.18	0.63%
77	Average	Stocks		10.5%		
78		Bonds		6.4%		
79		Risk Premium		4.1%		

See Appendix 5 for an explanation of how stock and bond returns are derived and the source of the data presented. Standard & Poor's discontinued its S&P Utilities Index in December 2001 and replaced its utilities stock index with separate indices for electric and natural gas utilities. In this study, the stock returns beginning in 2002 are based on the total returns for the EEI Index of U.S. shareholder-owned electric utilities, as reported by EEI on its website.
http://www.eei.org/industry_issues/finance_and_accounting/finance/research_and_analysis/EEI_Stock_Index

WEST VIRGINIA AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 6
USING THE ARITHMETIC MEAN TO ESTIMATE THE COST OF EQUITY CAPITAL

Consider an investment that in a given year generates a return of 30 percent with probability equal to .5 and a return of -10 percent with a probability equal to .5. For each one dollar invested, the possible outcomes of this investment at the end of year one are:

Ending Wealth	Probability
$1.30	0.50
$0.90	0.50

At the end of year two, the possible outcomes are:

Ending Wealth			Probability	Value x Probability
(1.30) (1.30)	=	$1.69	0.25	0.4225
(1.30) (.9)	=	$1.17	0.50	0.5850
(.9) (.9)	=	$0.81	0.25	0.2025
Expected Wealth	=			$1.21

The expected value of this investment at the end of year two is $1.21. In a competitive capital market, the cost of equity is equal to the expected rate of return on an investment. In the above example, the cost of equity is that rate of return which will make the initial investment of one dollar grow to the expected value of $1.21 at the end of two years. Thus, the cost of equity is the solution to the equation:

$$1(1+k)^2 = 1.21 \text{ or}$$

$$k = (1.21/1)^{.5} - 1 = 10\%.$$

The arithmetic mean of this investment is:

$$(30\%)\ (.5) + (-10\%)\ (.5) = 10\%.$$

Thus, the arithmetic mean is equal to the cost of equity capital.

The geometric mean of this investment is:

$$[(1.3)\ (.9)]^{.5} - 1 = .082 = 8.2\%.$$

Thus, the geometric mean is not equal to the cost of equity capital.

The lesson is obvious: for an investment with an uncertain outcome, the arithmetic mean is the best measure of the cost of equity capital.

WEST VIRGINIA AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 7
CALCULATION OF CAPITAL ASSET PRICING MODEL COST OF EQUITY
USING THE IBBOTSON® SBBI® 6.7 PERCENT RISK PREMIUM

Risk-free Rate	4.75%	-Long-term Treasury bond yield
Beta	0.71	Average Beta Comparable Water Companies
Risk Premium	6.70%	Long-horizon SBBI risk premium
Beta x Risk Premium	4.75%	
Flotation	0.25%	
CAPM cost of equity	9.8%	

Ibbotson® SBBI® risk premium from 2010 Ibbotson® SBBI® Stocks, Bonds, Bills, and Inflation® Valuation Yearbook; Value Line beta for comparable companies from Value Line Investment Analyzer April 2010. Forecast 20-year Treasury bond yield from Value Line Selection & Opinion, February 26, 2010, p. 3019.

WEST VIRGINIA AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 7 (continued)
COMPARABLE COMPANY BETAS

LINE NO.	COMPANY	BETA
1	Amer. States Water	0.80
2	Amer. Water Works	NA
3	Aqua America	0.65
4	Artesian Res. 'A'	0.55
4	California Water	0.75
5	Connecticut Water	0.80
6	Middlesex Water	0.80
7	York Water	0.65
8	Average	0.71

Data from Value Line Investment Analyzer April 2010.

WEST VIRGINIA AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 8
CALCULATION OF CAPITAL ASSET PRICING MODEL COST OF EQUITY
USING DCF ESTIMATE OF THE EXPECTED RATE OF RETURN
ON THE MARKET PORTFOLIO

LINE NO.			
1	Risk-free Rate	4.75%	Forecast 20-year Treasury Bond Yield
2	Beta	0.71	Average Beta Comparable Water Companies
3	DCF S&P 500	12.5%	DCF Cost of Equity S&P 500 (see following)
4	Risk Premium	7.75%	
5	Beta * Risk Premium	5.50%	
6	Flotation cost	0.25%	
7	Cost of Equity	10.5%	

Value Line beta for comparable companies from Value Line Investment Analyzer April 2010. Forecast 20-year Treasury bond yield from Value Line Selection & Opinion, February 26, 2010, p. 3019.

WEST VIRGINIA AMERICAN WATER COMPANY
EXHIBIT__(JVW-1)
SCHEDULE 8 (CONTINUED)
CALCULATION OF CAPITAL ASSET PRICING MODEL COST OF EQUITY
USING DCF ESTIMATE OF THE EXPECTED RATE OF RETURN
ON THE MARKET PORTFOLIO
SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS FOR S&P 500 COMPANIES

COMPANY	P_0	D_0	GROWTH	COST OF EQUITY
AMERISOURCEBERGEN	27.66	0.32	13.10%	14.4%
AUTOMATIC DATA PROC.	42.11	1.36	10.93%	14.6%
ALLERGAN	60.05	0.20	13.55%	13.9%
ASSURANT	31.51	0.60	8.50%	10.6%
APPLIED MATS.	12.96	0.28	11.50%	13.9%
AMPHENOL 'A'	42.38	0.06	12.53%	12.7%
AIRGAS	54.86	0.88	8.98%	10.7%
AVON PRODUCTS	31.55	0.88	10.43%	13.5%
AMERICAN EXPRESS	39.41	0.72	9.86%	11.9%
ALLEGHENY EN.	22.57	0.60	10.00%	13.0%
BOEING	62.89	1.68	8.33%	11.3%
BAXTER INTL.	58.23	1.16	11.81%	14.1%
BEST BUY	38.53	0.56	12.42%	14.1%
C R BARD	82.34	0.68	11.73%	12.7%
BECTON DICKINSON	77.55	1.48	11.38%	13.5%
FRANKLIN RESOURCES	104.05	0.88	10.00%	10.9%
BANK OF NEW YORK MELLON	29.16	0.36	11.00%	12.4%
CA	22.67	0.16	11.00%	11.8%
CARDINAL HEALTH	33.66	0.70	9.76%	12.1%
CHUBB	49.95	1.48	9.20%	12.5%
CBS 'B'	13.58	0.20	10.40%	12.0%
COLGATE-PALM.	81.98	2.12	9.00%	11.8%
COMCAST 'A'	16.63	0.38	11.63%	14.2%
CME GROUP	304.43	4.60	11.40%	13.1%
CSX	47.53	0.96	8.63%	10.8%
CINTAS	25.62	0.48	9.38%	11.4%
CVS CAREMARK	33.78	0.35	11.79%	13.0%
DEERE	55.84	1.12	9.75%	12.0%
QUEST DIAGNOSTICS	57.25	0.40	12.23%	13.0%
DANAHER	75.04	0.16	14.02%	14.3%
WALT DISNEY	31.49	0.35	9.57%	10.8%
DIAMOND OFFS.DRL.	92.16	0.50	11.14%	11.7%
DUKE ENERGY	16.61	0.96	4.33%	10.5%
EOG RES.	93.62	0.62	10.40%	11.1%
ENTERGY	78.81	3.32	6.96%	11.5%
EXPEDIA	22.97	0.28	11.60%	13.0%
FEDEX	84.27	0.44	11.75%	12.3%
FEDERATED INVRS.'B'	25.89	0.96	7.67%	11.7%
FLUOR	45.91	0.50	10.25%	11.5%
FPL GROUP	48.62	2.00	7.32%	11.8%
GENERAL DYNAMICS	70.92	1.68	7.80%	10.4%

COMPANY	P_0	D_0	GROWTH	COST OF EQUITY
GENERAL ELECTRIC	16.52	0.40	8.80%	11.5%
GENERAL MILLS	71.14	1.96	8.10%	11.1%
CORNING	18.71	0.20	12.80%	14.0%
GENUINE PARTS	39.92	1.64	7.33%	11.8%
GAP	20.97	0.40	10.73%	12.9%
GOODRICH	65.42	1.08	8.53%	10.3%
HALLIBURTON	30.97	0.36	10.67%	12.0%
HARTFORD FINL.SVS.GP.	25.46	0.20	11.77%	12.7%
HJ HEINZ	44.76	1.68	6.53%	10.6%
HONEYWELL INTL.	40.73	1.21	9.00%	12.3%
HEWLETT-PACKARD	50.28	0.32	13.40%	14.1%
INTERNATIONAL BUS.MCHS.	126.99	2.20	8.86%	10.8%
ITT	50.98	1.00	8.67%	10.8%
PENNEY JC	27.56	0.80	7.27%	10.4%
NORDSTROM	36.98	0.64	12.26%	14.2%
KELLOGG	53.66	1.50	10.25%	13.4%
KRAFT FOODS	28.93	1.16	7.53%	11.9%
KROGER	21.60	0.38	8.65%	10.6%
L3 COMMUNICATIONS	89.04	1.60	10.12%	12.1%
LOCKHEED MARTIN	78.21	2.52	8.92%	12.5%
LOWE'S COMPANIES	23.25	0.36	12.27%	14.0%
MARRIOTT INTL.'A'	27.94	0.16	10.08%	10.7%
MCDONALDS	64.15	2.20	10.01%	13.8%
MCKESSON	61.06	0.48	11.45%	12.3%
MOODY'S	27.95	0.42	10.57%	12.2%
MEDTRONIC	44.15	0.82	10.25%	12.3%
MASSEY EN.	44.99	0.24	11.00%	11.6%
METLIFE	37.59	0.74	9.04%	11.2%
MCGRAW-HILL	34.82	0.94	7.87%	10.8%
MEAD JOHNSON NUTRITION	47.20	0.90	9.77%	11.9%
MICROSOFT	29.05	0.52	11.25%	13.3%
NIKE 'B'	66.73	1.08	12.33%	14.2%
NORTHROP GRUMMAN	60.19	1.72	11.00%	14.2%
NORFOLK SOUTHERN	51.36	1.36	8.75%	11.7%
NATIONAL SEMICON.	14.34	0.32	9.33%	11.8%
NORTHEAST UTILITIES	26.16	1.02	7.81%	12.1%
NEWELL RUBBERMAID	14.37	0.20	9.33%	10.9%
OMNICOM GP.	37.26	0.80	10.93%	13.3%
PEOPLES UNITED FINANCIAL	15.85	0.61	9.00%	13.3%
PACCAR	37.35	0.36	11.25%	12.3%
PG&E	42.84	1.82	7.00%	11.6%
PREC.CASTPARTS	113.47	0.12	14.00%	14.1%
PRINCIPAL FINL.GP.	24.61	0.50	9.45%	11.7%
PROCTER & GAMBLE	62.30	1.76	9.33%	12.5%
PROGRESS ENERGY	39.13	2.48	3.72%	10.5%
PERKINELMER	21.87	0.28	13.05%	14.5%
PINNACLE WEST CAP.	36.78	2.10	7.00%	13.2%
PEPCO HOLDINGS	16.81	1.08	5.33%	12.3%
PRUDENTIAL FINL.	52.71	0.70	11.42%	12.9%
PRAXAIR	77.96	1.80	11.33%	13.9%
POLO RALPH LAUREN 'A'	82.39	0.40	10.63%	11.2%

COMPANY	P_0	D_0	GROWTH	COST OF EQUITY
ROPER INDS.NEW	54.04	0.38	12.00%	12.8%
RAYTHEON 'B'	54.78	1.50	8.67%	11.7%
SCANA	36.49	1.90	5.32%	10.9%
SIGMA ALDRICH	50.01	0.64	9.47%	10.9%
SARA LEE	12.98	0.44	8.47%	12.2%
SOUTHERN	32.38	1.75	4.77%	10.5%
STATE STREET	45.03	0.04	10.50%	10.6%
STRYKER	53.88	0.60	12.07%	13.3%
AT&T	25.92	1.68	5.79%	12.8%
TECO ENERGY	15.67	0.80	7.93%	13.5%
TIFFANY & CO	43.95	0.80	11.30%	13.3%
TJX COS.	39.86	0.48	12.44%	13.8%
TORCHMARK	46.98	0.60	9.38%	10.8%
T ROWE PRICE GP.	51.66	1.08	10.75%	13.1%
TOTAL SYSTEM SERVICES	15.21	0.28	8.70%	10.7%
TIME WARNER CABLE	46.54	1.60	8.27%	12.0%
UNUM GROUP	21.15	0.33	8.80%	10.5%
UNION PACIFIC	66.59	1.08	10.88%	12.7%
UNITED PARCEL SER.	60.00	1.88	8.22%	11.7%
UNITED TECHNOLOGIES	69.52	1.70	10.72%	13.5%
V F	75.66	2.40	9.60%	13.1%
VULCAN MATERIALS	46.64	1.00	10.60%	13.0%
VERIZON COMMUNICATIONS	30.19	1.90	4.86%	11.6%
WISCONSIN ENERGY	49.34	1.60	9.87%	13.5%
WELLS FARGO & CO	28.48	0.20	12.00%	12.8%
WAL MART STORES	54.05	1.21	10.80%	13.3%
WESTERN UNION	17.66	0.06	12.57%	13.0%
XCEL ENERGY	20.96	0.98	6.12%	11.2%
DENTSPLY INTL.	34.13	0.20	11.67%	12.3%
Market-weighted Average				12.5%

Notes: In applying the DCF model to the S&P 500, I included in the DCF analysis only those companies in the S&P 500 group which pay a dividend, have a positive growth rate, and have at least three analysts' long-term growth estimates. To be conservative, I also eliminated those 25% of companies with the highest and lowest DCF results.

d_0 = Current dividend per Thomson Reuters.
P_0 = Average of the monthly high and low stock prices during the three months ending March 2010 per Thomson Reuters.
g = I/B/E/S forecast of future earnings growth March 2010.
k = Cost of equity using the quarterly version of the DCF model shown below:

$$k = \left[\frac{d_0 (1+g)^{\frac{1}{4}}}{P_0} + (1+g)^{\frac{1}{4}} \right]^4 - 1$$

APPENDIX 1
QUALIFICATIONS OF JAMES H. VANDER WEIDE, PH.D.

JAMES H. VANDER WEIDE, Ph.D.
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James H. Vander Weide is Research Professor of Finance and Economics at Duke University, the Fuqua School of Business. Dr. Vander Weide is also founder and President of Financial Strategy Associates, a consulting firm that provides strategic, financial, and economic consulting services to corporate clients, including cost of capital and valuation studies.

Educational Background and Prior Academic Experience

Dr. Vander Weide holds a Ph.D. in Finance from Northwestern University and a Bachelor of Arts in Economics from Cornell University. He joined the faculty at Duke University and was named Assistant Professor, Associate Professor, Professor, and then Research Professor of Finance and Economics.

Since joining the faculty at Duke, Dr. Vander Weide has taught courses in corporate finance, investment management, and management of financial institutions. He has also taught courses in statistics, economics, and operations research, and a Ph.D. seminar on the theory of public utility pricing. In addition, Dr. Vander Weide has been active in executive education at Duke and Duke Corporate Education, leading executive development seminars on topics including financial analysis, cost of capital, creating shareholder value, mergers and acquisitions, real options, capital budgeting, cash management, measuring corporate performance, valuation, short-run financial planning, depreciation policies, financial strategy, and competitive strategy. Dr. Vander Weide has designed and served as Program Director for several executive education programs, including the Advanced Management Program, Competitive Strategies in Telecommunications, and the Duke Program for Manager Development for managers from the former Soviet Union.

Publications

Dr. Vander Weide has written a book entitled *Managing Corporate Liquidity: An Introduction to Working Capital Management* published by John Wiley and Sons, Inc. He has also written a chapter titled, "Financial Management in the Short Run" for *The Handbook of Modern Finance*;" a chapter for *The Handbook of Portfolio Construction: Contemporary Applications of Markowitz Techniques,* "Principles for Lifetime Portfolio Selection: Lessons from Portfolio Theory," and written research papers on such topics as portfolio management, capital budgeting, investments, the effect of regulation on the performance of public utilities, and cash management. His articles have been published in *American Economic Review, Financial Management, International Journal of Industrial Organization, Journal of Finance, Journal of Financial and Quantitative Analysis, Journal of Bank Research, Journal of Portfolio Management, Journal of Accounting Research, Journal of Cash Management, Management Science, Atlantic Economic Journal, Journal of Economics and Business,* and *Computers and Operations Research.*

Professional Consulting Experience

Dr. Vander Weide has provided financial and economic consulting services to firms in the electric, gas, insurance, telecommunications, and water industries for more than 25 years. He has testified on the cost of capital, competition, risk, incentive regulation, forward-looking economic cost, economic pricing guidelines, depreciation, accounting, valuation, and other financial and economic issues in more than 400 cases before the United States Congress, the Canadian Radio-Television and Telecommunications Commission, the Federal Communications Commission, the National Energy Board (Canada), the National Telecommunications and Information Administration, the Federal Energy Regulatory Commission, the public service commissions of 43 states, the District of Columbia, and three Canadian provinces, the insurance commissions of five states, the Iowa State Board of Tax Review, the National Association of Securities Dealers, and the North Carolina Property Tax Commission. In addition, he has testified as an expert witness in proceedings before the United States District Court for the District of New Hampshire; United States District Court for the Northern District of California; United States District Court for the Northern District of Illinois, United States District Court for the District of Nebraska; United States District Court for the Eastern District of North Carolina; Superior Court of North Carolina, the United States Bankruptcy Court for the Southern District of West Virginia; and United States District Court for the Eastern District of Michigan. With respect to implementation of the Telecommunications Act of 1996, Dr. Vander Weide has testified in 30 states on issues relating to the pricing of unbundled network elements and universal service cost studies and has consulted with Bell Canada, Deutsche Telekom, and Telefónica on similar issues. He has also provided expert testimony on issues related to electric and natural gas restructuring. He has worked for Bell Canada/Nortel on a special task force to study the effects of vertical integration in the Canadian telephone industry and has worked for Bell Canada as an expert witness on the cost of capital. Dr. Vander Weide has provided consulting and expert witness testimony to the following companies:

TELECOMMUNICATIONS COMPANIES	
ALLTEL and subsidiaries	Phillips County Cooperative Tel. Co.
Ameritech (now AT&T new)	Pine Drive Cooperative Telephone Co.
AT&T (old)	Roseville Telephone Company (SureWest)
Bell Canada/Nortel	SBC Communications (now AT&T new)
BellSouth and subsidiaries	Sherburne Telephone Company
Centel and subsidiaries	Siemens
Cincinnati Bell (Broadwing)	Southern New England Telephone
Cisco Systems	Sprint/United and subsidiaries
Citizens Telephone Company	Telefónica
Concord Telephone Company	Tellabs, Inc.
Contel and subsidiaries	The Stentor Companies
Deutsche Telekom	U S West (Qwest)
GTE and subsidiaries (now Verizon)	Union Telephone Company
Heins Telephone Company	United States Telephone Association
JDS Uniphase	Valor Telecommunications (Windstream)
Lucent Technologies	Verizon (Bell Atlantic) and subsidiaries

TELECOMMUNICATIONS COMPANIES	
Minnesota Independent Equal Access Corp.	Woodbury Telephone Company
NYNEX and subsidiaries (Verizon)	
Pacific Telesis and subsidiaries	

ELECTRIC, GAS, WATER, OIL COMPANIES	
Alcoa Power Generating, Inc.	MidAmerican Energy and subsidiaries
Alliant Energy and subsidiaries	Nevada Power Company
AltaLink, L.P.	NICOR
Ameren	North Carolina Natural Gas
American Water Works	North Shore Gas
Atmos Energy and subsidiaries	Northern Natural Gas Company
BP p.l.c.	NOVA Gas Transmission Ltd.
Central Illinois Public Service	PacifiCorp
Citizens Utilities	Peoples Energy and its subsidiaries
Consolidated Natural Gas and subsidiaries	PG&E
Dominion Resources and subsidiaries	Progress Energy
Duke Energy and subsidiaries	PSE&G
Empire District Electric Company	Public Service Company of North Carolina
EPCOR Distribution & Transmission Inc.	Sempra Energy
EPCOR Energy Alberta Inc.	South Carolina Electric and Gas
FortisAlberta Inc.	Southern Company and subsidiaries
Hope Natural Gas	Tennessee-American Water Company
Interstate Power Company	The Peoples Gas, Light and Coke Co.
Iowa Southern	TransCanada
Iowa-American Water Company	Trans Québec & Maritimes Pipeline Inc.
Iowa-Illinois Gas and Electric	Union Gas
Kentucky Power Company	United Cities Gas Company
Kentucky-American Water Company	Virginia-American Water Company
Kinder Morgan Energy Partners	

INSURANCE COMPANIES
Allstate
North Carolina Rate Bureau
United Services Automobile Association (USAA)
The Travelers Indemnity Company
Gulf Insurance Company

Other Professional Experience

Dr. Vander Weide conducts in-house seminars and training sessions on topics such as creating shareholder value, financial analysis, competitive strategy, cost of capital, real options, financial strategy, managing growth, mergers and acquisitions, valuation, measuring corporate performance, capital budgeting, cash management, and financial planning. Among the firms for whom he has designed and taught tailored programs and training sessions are ABB Asea Brown Boveri, Accenture, Allstate, Ameritech, AT&T, Bell Atlantic/Verizon, BellSouth, Progress Energy/Carolina Power & Light, Contel, Fisons, GlaxoSmithKline, GTE, Lafarge, MidAmerican Energy, New Century Energies, Norfolk Southern, Pacific Bell Telephone, The Rank Group, Siemens, Southern New England Telephone, TRW, and Wolseley Plc. Dr. Vander Weide has also hosted a nationally prominent conference/workshop on estimating the cost of capital. In 1989, at the request of Mr. Fuqua, Dr. Vander Weide designed the Duke Program for Manager Development for managers from the former Soviet Union, the first in the United States designed exclusively for managers from Russia and the former Soviet republics.

In the 1970's, Dr. Vander Weide helped found University Analytics, Inc., which at that time was one of the fastest growing small firms in the country. As an officer at University Analytics, he designed cash management models, databases, and software packages that are still used by most major U.S. banks in consulting with their corporate clients. Having sold his interest in University Analytics, Dr. Vander Weide now concentrates on strategic and financial consulting, academic research, and executive education.

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APPENDIX 2
THE QUARTERLY DCF MODEL

The simple DCF Model assumes that a firm pays dividends only at the end of each year. Since firms in fact pay dividends quarterly and investors appreciate the time value of money, the annual version of the DCF Model generally underestimates the value investors are willing to place on the firm's expected future dividend stream. In this appendix, we review two alternative formulations of the DCF Model that allow for the quarterly payment of dividends.

When dividends are assumed to be paid annually, the DCF Model suggests that the current price of the firm's stock is given by the expression:

$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \ldots + \frac{D_n + P_n}{(1+k)^n} \quad \textbf{(1)}$$

where

P_0	=	current price per share of the firm's stock,
$D_1, D_2, \ldots, D_n$	=	expected annual dividends per share on the firm's stock,
P_n	=	price per share of stock at the time investors expect to sell the stock, and
k	=	return investors expect to earn on alternative investments of the same risk, i.e., the investors' required rate of return.

Unfortunately, expression (1) is rather difficult to analyze, especially for the purpose of estimating k. Thus, most analysts make a number of simplifying assumptions. First, they assume that dividends are expected to grow at the constant rate g into the indefinite future. Second, they assume that the stock price at time n is simply the present value of all dividends expected in periods subsequent to n. Third, they assume that the investors' required rate of return, k, exceeds the expected dividend growth rate g. Under the above simplifying assumptions, a firm's stock price may be written as the following sum:

$$P_0 = \frac{D_0(1+g)}{(1+k)} + \frac{D_0(1+g)^2}{(1+k)^2} + \frac{D_0(1+g)^3}{(1+k)^3} + \ldots , \qquad \textbf{(2)}$$

where the three dots indicate that the sum continues indefinitely.

As we shall demonstrate shortly, this sum may be simplified to:

$$P_0 = \frac{D_0(1+g)}{(k - g)}$$

First, however, we need to review the very useful concept of a geometric progression.

<u>Geometric Progression</u>

Consider the sequence of numbers 3, 6, 12, 24,…, where each number after the first is obtained by multiplying the preceding number by the factor 2. Obviously, this sequence of numbers may also be expressed as the sequence 3, 3 x 2, 3 x 2^2, 3 x 2^3, etc. This sequence is an example of a geometric progression.

<u>Definition</u>: A geometric progression is a sequence in which each term after the first is obtained by multiplying some fixed number, called the common ratio, by the preceding term.

A general notation for geometric progressions is: a, the first term, r, the common ratio, and n, the number of terms. Using this notation, any geometric progression may be represented by the sequence:

$$a, ar, ar^2, ar^3, \ldots, ar^{n-1}.$$

In studying the DCF Model, we will find it useful to have an expression for the sum of n terms of a geometric progression. Call this sum S_n. Then

$$S_n = a + ar + \ldots + ar^{n-1} . \qquad \textbf{(3)}$$

However, this expression can be simplified by multiplying both sides of equation (3) by r and then subtracting the new equation from the old. Thus,

$$rS_n = ar + ar^2 + ar^3 + \ldots + ar^n$$

and

$$S_n - rS_n = a - ar^n \quad ,$$

or

$$(1 - r)\, S_n = a\,(1 - r^n) \quad .$$

Solving for S_n, we obtain:

$$S_n = \frac{a(1 - r^n)}{(1 - r)} \qquad \textbf{(4)}$$

as a simple expression for the sum of n terms of a geometric progression. Furthermore, if $|r| < 1$, then S_n is finite, and as n approaches infinity, S_n approaches a ÷ (1-r). Thus, for a geometric progression with an infinite number of terms and $|r| < 1$, equation (4) becomes:

$$S = \frac{a}{1 - r} \qquad \textbf{(5)}$$

Application to DCF Model

Comparing equation (2) with equation (3), we see that the firm's stock price (under the DCF assumption) is the sum of an infinite geometric progression with the first term

$$a = \frac{D_0(1+g)}{(1+k)}$$

and common factor

$$r = \frac{(1+g)}{(1+k)}$$

Applying equation (5) for the sum of such a geometric progression, we obtain

$$S = a \bullet \frac{1}{(1 - r)} = \frac{D_0(1+g)}{(1+k)} \bullet \frac{1}{1 - \frac{1+g}{1+k}} = \frac{D_0(1+g)}{(1+k)} \bullet \frac{1+k}{k - g} = \frac{D_0(1+g)}{k - g}$$

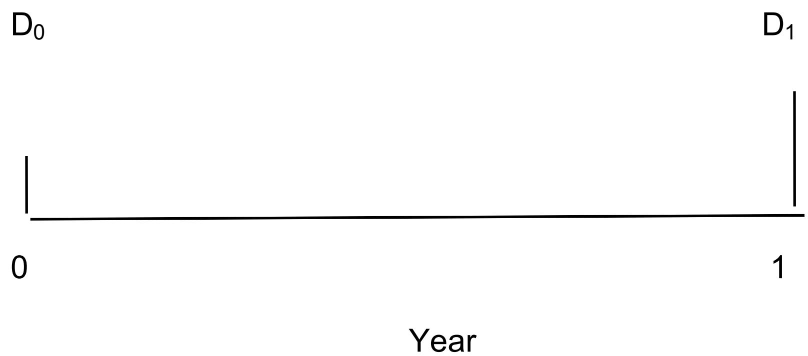
as we suggested earlier.

Quarterly DCF Model

The Annual DCF Model assumes that dividends grow at an annual rate of g% per year (see Figure 1).

Figure 1

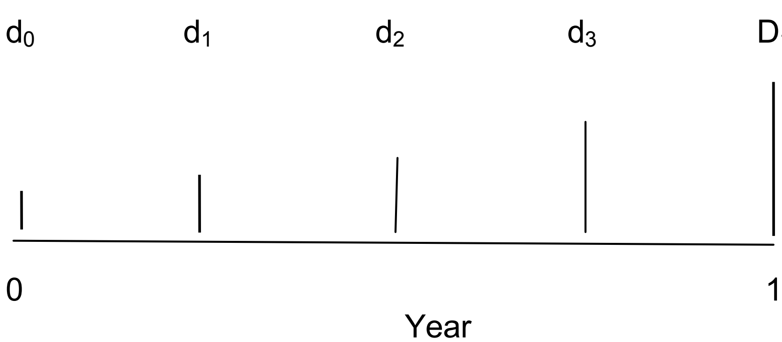
Annual DCF Model



$D_0 = 4d_0$ $D_1 = D_0(1 + g)$

Figure 2

Quarterly DCF Model (Constant Growth Version)



$d_1 = d_0(1+g)^{.25}$ $d_2 = d_0(1+g)^{.50}$

$d_3 = d_0(1+g)^{.75}$ $d_4 = d_0(1+g)$

In the Quarterly DCF Model, it is natural to assume that quarterly dividend payments differ from the preceding quarterly dividend by the factor $(1 + g)^{.25}$, where g is expressed in terms of percent per year and the decimal .25 indicates that the growth has

only occurred for one quarter of the year. (See Figure 2.) Using this assumption, along with the assumption of constant growth and ***k*** > ***g***, we obtain a new expression for the firm's stock price, which takes account of the quarterly payment of dividends. This expression is:

$$P_0 = \frac{d_0(1+g)^{\frac{1}{4}}}{(1+k)^{\frac{1}{4}}} + \frac{d_0(1+g)^{\frac{2}{4}}}{(1+k)^{\frac{2}{4}}} + \frac{d_0(1+g)^{\frac{3}{4}}}{(1+k)^{\frac{3}{4}}} + \ldots \qquad \textbf{(6)}$$

where d_0 is the last quarterly dividend payment, rather than the last annual dividend payment. (We use a lower case d to remind the reader that this is not the annual dividend.)

Although equation (6) looks formidable at first glance, it too can be greatly simplified using the formula [equation (4)] for the sum of an infinite geometric progression. As the reader can easily verify, equation (6) can be simplified to:

$$P_0 = \frac{d_0(1+g)^{\frac{1}{4}}}{(1+k)^{\frac{1}{4}} - (1+g)^{\frac{1}{4}}} \qquad \textbf{(7)}$$

Solving equation (7) for *k*, we obtain a DCF formula for estimating the cost of equity under the quarterly dividend assumption:

$$k = \left[\frac{d_0(1+g)^{\frac{1}{4}}}{P_0} + (1+g)^{\frac{1}{4}} \right]^4 - 1 \qquad \textbf{(8)}$$

An Alternative Quarterly DCF Model

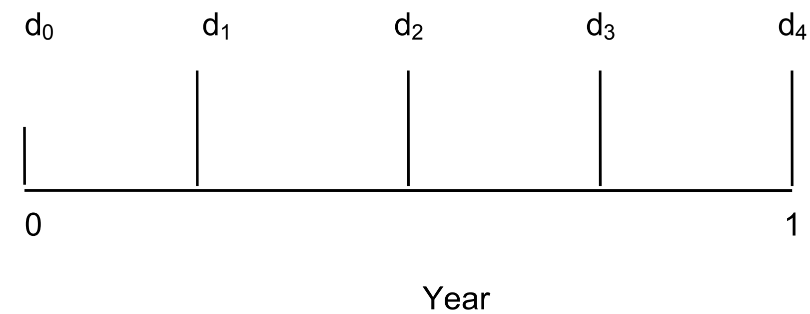
Although the constant growth Quarterly DCF Model [equation (8)] allows for the quarterly timing of dividend payments, it does require the assumption that the firm increases its dividend payments each quarter. Since this assumption is difficult for some analysts to accept, we now discuss a second Quarterly DCF Model that allows for constant quarterly dividend payments within each dividend year.

Assume then that the firm pays dividends quarterly and that each dividend payment is constant for four consecutive quarters. There are four cases to consider, with each case distinguished by varying assumptions about where we are evaluating the firm in relation to the time of its next dividend increase. (See Figure 3.)

Figure 3

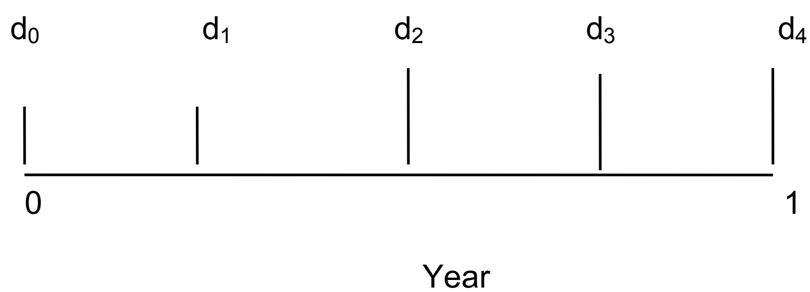
Quarterly DCF Model (Constant Dividend Version)

Case 1



$$d_1 = d_2 = d_3 = d_4 = d_0(1+g)$$

Case 2

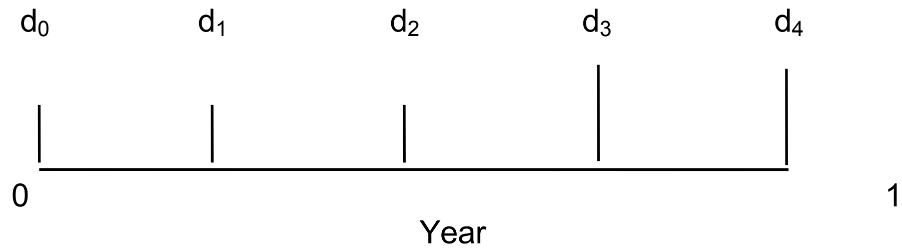


$$d_1 = d_0$$

$$d_2 = d_3 = d_4 = d_0(1+g)$$

<u>Figure 3</u> (continued)

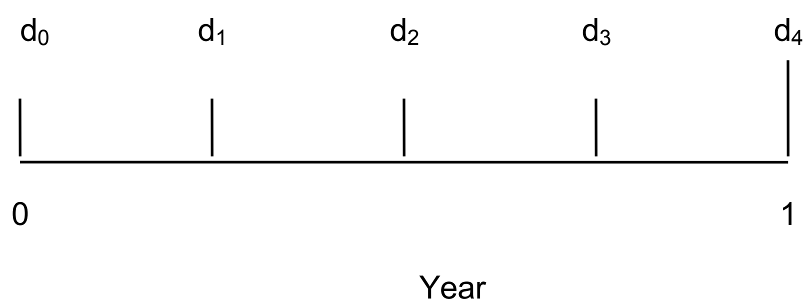
<u>Case 3</u>



$d_1 = d_2 = d_0$

$d_3 = d_4 = d_0(1+g)$

<u>Case 4</u>



$d_1 = d_2 = d_3 = d_0$

$d_4 = d_0(1+g)$

If we assume that the investor invests the quarterly dividend in an alternative investment of the same risk, then the amount accumulated by the end of the year will in all cases be given by

$$D_1^* = d_1\,(1+k)^{3/4} + d_2\,(1+k)^{1/2} + d_3\,(1+k)^{1/4} + d_4$$

where d_1, d_2, d_3 and d_4 are the four quarterly dividends. Under these new assumptions, the firm's stock price may be expressed by an Annual DCF Model of the form (2), with the exception that

$$D_1^* = d_1\,(1 + k)^{3/4} + d_2\,(1 + k)^{1/2} + d_3\,(1 + k)^{1/4} + d_4 \qquad \textbf{(9)}$$

is used in place of $D_0(1+g)$. But, we already know that the Annual DCF Model may be reduced to

$$P_0 = \frac{D_0(1+g)}{k - g}$$

Thus, under the assumptions of the second Quarterly DCF Model, the firm's cost of equity is given by

$$k = \frac{D_1^*}{P_0} + g \quad \textbf{(10)}$$

with D_1^* given by (9).

Although equation (10) looks like the Annual DCF Model, there are at least two very important practical differences. First, since D_1^* is always greater than $D_0(1+g)$, the estimates of the cost of equity are always larger (and more accurate) in the Quarterly Model (10) than in the Annual Model. Second, since D_1^* depends on k through equation (9), the unknown "k" appears on both sides of (10), and an iterative procedure is required to solve for k.

APPENDIX 3
ADJUSTING FOR FLOTATION COSTS IN DETERMINING
A PUBLIC UTILITY'S
ALLOWED RATE OF RETURN ON EQUITY

Introduction

Regulation of public utilities is guided by the principle that utility revenues should be sufficient to allow recovery of all prudently incurred expenses, including the cost of capital. As set forth in the 1944 *Hope Natural Gas* Case [*Federal Power Comm'n v. Hope Natural Gas Co*. 320 U. S. 591 (1944) at 603], the U. S. Supreme Court states:

> From the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock.…By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks.

Since the flotation costs arising from the issuance of debt and equity securities are an integral component of capital costs, this standard requires that the company's revenues be sufficient to fully recover flotation costs.

Despite the widespread agreement that flotation costs should be recovered in the regulatory process, several issues still need to be resolved. These include:

1. How is the term "flotation costs" defined? Does it include only the out-of-pocket costs associated with issuing securities (e. g., legal fees, printing costs, selling and underwriting expenses), or does it also include the reduction in a security's price that frequently accompanies flotation (i. e., market pressure)?
2. What should be the time pattern of cost recovery? Should a company be allowed to recover flotation costs immediately, or should flotation costs be recovered over the life of the issue?
3. For the purposes of regulatory accounting, should flotation costs be included as an expense? As an addition to rate base? Or as an additional element of a firm's allowed rate of return?
4. Do existing regulatory methods for flotation cost recovery allow a firm ***full*** recovery of flotation costs?

In this paper, I review the literature pertaining to the above issues and discuss my own views regarding how this literature applies to the cost of equity for a regulated firm.

Definition of Flotation Cost

The value of a firm is related to the future stream of net cash flows (revenues minus expenses measured on a cash basis) that can be derived from its assets. In the process of acquiring assets, a firm incurs certain expenses which reduce its value. Some of these expenses or costs are directly associated with revenue production in one period (e. g., wages, cost of goods sold), others are more properly associated with revenue production in many periods (e. g., the acquisition cost of plant and equipment). In either case, the word "cost" refers to any item that reduces the value of a firm.

If this concept is applied to the act of issuing new securities to finance asset purchases, many items are properly included in issuance or flotation costs. These include: (1) compensation received by investment bankers for underwriting services, (2) legal fees, (3) accounting fees, (4) engineering fees, (5) trustee's fees, (6) listing fees, (7) printing and engraving expenses, (8) SEC registration fees, (9) Federal Revenue Stamps, (10) state taxes, (11) warrants granted to underwriters as extra compensation, (12) postage expenses, (13) employees' time, (14) market pressure, and (15) the offer discount. The finance literature generally divides these flotation cost items into three categories, namely, underwriting expenses, issuer expenses, and price effects.

Magnitude of Flotation Costs

The finance literature contains several studies of the magnitude of the flotation costs associated with new debt and equity issues. These studies differ primarily with regard to the time period studied, the sample of companies included, and the source of data. The flotation cost studies generally agree, however, that for large issues, underwriting expenses represent approximately one and one-half percent of the proceeds of debt issues and three to five percent of the proceeds of seasoned equity issues. They also agree that issuer expenses represent approximately 0.5 percent of both debt and equity issues, and that the announcement of an equity issue reduces the company's stock price by at least two to three percent of the proceeds from the stock issue. Thus, total flotation costs represent approximately two percent[10] of the proceeds from debt issues, and five and one-half to eight and one-half percent of the proceeds of equity issues.

Lee *et. al.* [14] is an excellent example of the type of flotation cost studies found in the finance literature. The Lee study is a comprehensive recent study of the underwriting and issuer costs associated with debt and equity issues for both utilities and non-utilities. The results of the Lee *et. al.* study are reproduced in Tables 1 and 2. Table 1 demonstrates that the total underwriting and issuer expenses for the 1,092 debt issues in their study averaged 2.24 percent of the proceeds of the issues, while the total underwriting and issuer costs for the 1,593 seasoned equity issues in their study averaged 7.11 percent of the proceeds of the new issue. Table 1 also demonstrates that the total underwriting and issuer costs of seasoned equity offerings, as a percent of proceeds, decline with the size of the issue. For issues above $60 million, total underwriting and issuer costs amount to from three to five percent of the amount of the proceeds.

Table 2 reports the total underwriting and issuer expenses for 135 utility debt issues and 136 seasoned utility equity issues. Total underwriting and issuer expenses for utility bond offerings averaged 1.47 percent of the amount of the proceeds and for seasoned utility equity offerings averaged 4.92 percent of the amount of the proceeds. Again, there are some economies of scale associated with larger equity offerings. Total underwriting and issuer expenses for equity offerings in excess of 40 million dollars generally range from three to four percent of the proceeds.

The results of the Lee study for large equity issues are consistent with results of earlier studies by Bhagat and Frost [4], Mikkelson and Partch [17], and Smith [24]. Bhagat and Frost found that total underwriting and issuer expenses average approximately four and one-half percent of the amount of proceeds from negotiated utility offerings during the period 1973 to 1980, and approximately three and one-half percent of the amount of the proceeds from competitive utility offerings over the

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[10] The two percent flotation cost on debt only recognizes the cost of newly-issued debt. When interest rates decline, many companies exercise the call provisions on higher cost debt and reissue debt at lower rates. This process involves reacquisition costs that are not included in the academic studies. If reacquisition costs were included in the academic studies, debt flotation costs could increase significantly.

same period. Mikkelson and Partch found that total underwriting and issuer expenses average five and one-half percent of the proceeds from seasoned equity offerings over the 1972 to 1982 period. Smith found that total underwriting and issuer expenses for larger equity issues generally amount to four to five percent of the proceeds of the new issue.

The finance literature also contains numerous studies of the decline in price associated with sales of large blocks of stock to the public. These articles relate to the price impact of: (1) initial public offerings; (2) the sale of large blocks of stock from one investor to another; and (3) the issuance of seasoned equity issues to the general public. All of these studies generally support the notion that the announcement of the sale of large blocks of stock produces a decline in a company's share price. The decline in share price for initial public offerings is significantly larger than the decline in share price for seasoned equity offerings; and the decline in share price for public utilities is less than the decline in share price for non-public utilities. A comprehensive study of the magnitude of the decline in share price associated specifically with the sale of new equity by public utilities is reported in Pettway [19], who found the market pressure effect for a sample of 368 public utility equity sales to be in the range of two to three percent. This decline in price is a real cost to the utility, because the proceeds to the utility depend on the stock price on the day of issue.

In addition to the price decline associated with the announcement of a new equity issue, the finance literature recognizes that there is also a price decline associated with the actual issuance of equity securities. In particular, underwriters typically sell seasoned new equity securities to investors at a price lower than the closing market price on the day preceding the issue. The Rules of Fair Practice of the National Association of Securities Dealers require that underwriters not sell shares at a price above the offer price. Since the offer price represents a binding constraint to the underwriter, the underwriter tends to set the offer price slightly below the market price on the day of issue to compensate for the risk that the price received by the underwriter may go down, but can not increase. Smith provides evidence that the offer discount tends to be between 0.5 and 0.8 percent of the proceeds of an equity issue. I am not aware of any similar studies for debt issues.

In summary, the finance literature provides strong support for the conclusion that total underwriting and issuer expenses for public utility debt offerings represent approximately two percent of the amount of the proceeds, while total underwriting and issuer expenses for public utility equity offerings represent at least four to five percent of the amount of the proceeds. In addition, the finance literature supports the conclusion that the cost associated with the decline in stock price at the announcement date represents approximately two to three percent as a result of a large public utility equity issue.

TIME PATTERN OF FLOTATION COST RECOVERY

Although flotation costs are incurred only at the time a firm issues new securities, there is no reason why an issuing firm ought to recognize the expense only in the current period. In fact, if assets purchased with the proceeds of a security issue produce revenues over many years, a sound argument can be made in favor of recognizing flotation expenses over a reasonably lengthy period of time. Such recognition is certainly consistent with the generally accepted accounting principle that the time pattern of expenses match the time pattern of revenues, and it is also consistent with the normal treatment of debt flotation expenses in both regulated and unregulated industries.

In the context of a regulated firm, it should be noted that there are many possible time patterns for the recovery of flotation expenses. However, if it is felt that flotation expenses are most

appropriately recovered over a period of years, then it should be recognized that investors must also be compensated for the passage of time. That is to say, the value of an investor's capital will be reduced if the expenses are merely distributed over time, without any allowance for the time value of money.

ACCOUNTING FOR FLOTATION COST IN A REGULATORY SETTING

In a regulatory setting, a firm's revenue requirements are determined by the equation:

Revenue Requirement = Total Expenses + Allowed Rate of Return x Rate Base

Thus, there are three ways in which an issuing firm can account for and recover its flotation expenses: (1) treat flotation expenses as a current expense and recover them immediately; (2) include flotation expenses in rate base and recover them over time; and (3) adjust the allowed rate of return upward and again recover flotation expenses over time. Before considering methods currently being used to recover flotation expenses in a regulatory setting, I shall briefly consider the advantages and disadvantages of these three basic recovery methods.

Expenses. Treating flotation costs as a current expense has several advantages. Because it allows for recovery at the time the expense occurs, it is not necessary to compute amortized balances over time and to debate which interest rate should be applied to these balances. A firm's stockholders are treated fairly, and so are the firm's customers, because they pay neither more nor less than the actual flotation expense. Since flotation costs are relatively small compared to the total revenue requirement, treatment as a current expense does not cause unusual rate hikes in the year of flotation, as would the introduction of a large generating plant in a state that does not allow Construction Work in Progress in rate base.

On the other hand, there are two major disadvantages of treating flotation costs as a current expense. First, since the asset purchased with the acquired funds will likely generate revenues for many years into the future, it seems unfair that current ratepayers should bear the full cost of issuing new securities, when future ratepayers share in the benefits. Second, this method requires an estimate of the underpricing effect on each security issue. Given the difficulties involved in measuring the extent of underpricing, it may be more accurate to estimate the average underpricing allowance for many securities than to estimate the exact figure for one security.

Rate Base. In an article in *Public Utilities Fortnightly*, Bierman and Hass [5] recommend that flotation costs be treated as an intangible asset that is included in a firm's rate base along with the assets acquired with the stock proceeds. This approach has many advantages. For ratepayers, it provides a better match between benefits and expenses: the future ratepayers who benefit from the financing costs contribute the revenues to recover these costs. For investors, if the allowed rate of return is equal to the investors' required rate of return, it is also theoretically fair since they are compensated for the opportunity cost of their investment (including both the time value of money and the investment risk).

Despite the compelling advantages of this method of cost recovery, there are several disadvantages that probably explain why it has not been used in practice. First, a firm will only recover the proper amount for flotation expenses if the rate base is multiplied by the appropriate cost of capital. To the extent that a commission under or over estimates the cost of capital, a firm will under or over recover its flotation expenses. Second, it is may be both legally and psychologically difficult for commissioners to include an intangible asset in a firm's rate base. According to established legal doctrine, assets are to be included in rate base only if they are

"used and useful" in the public service. It is unclear whether intangible assets such as flotation expenses meet this criterion.

Rate of Return. The prevailing practice among state regulators is to treat flotation expenses as an additional element of a firm's cost of capital or allowed rate of return. This method is similar to the second method above (treatment in rate base) in that some part of the initial flotation cost is amortized over time. However, it has a disadvantage not shared by the rate base method. If flotation cost is included in rate base, it is fairly easy to keep track of the flotation cost on each new equity issue and see how it is recovered over time. Using the rate of return method, it is not possible to track the flotation cost for specific issues because the flotation cost for a specific issue is never recorded. Thus, it is not clear to participants whether a current allowance is meant to recover (1) flotation costs actually incurred in a test period, (2) expected future flotation costs, or (3) past flotation costs. This confusion never arises in the treatment of debt flotation costs. Because the exact costs are recorded and explicitly amortized over time, participants recognize that current allowances for debt flotation costs are meant to recover some fraction of the flotation costs on all past debt issues.

EXISTING REGULATORY METHODS

Although most state commissions prefer to let a regulated firm recover flotation expenses through an adjustment to the allowed rate of return, there is considerable controversy about the magnitude of the required adjustment. The following are some of the most frequently asked questions: (1) Should an adjustment to the allowed return be made every year, or should the adjustment be made only in those years in which new equity is raised? (2) Should an adjusted rate of return be applied to the entire rate base, or should it be applied only to that portion of the rate base financed with paid-in capital (as opposed to retained earnings)? (3) What is the appropriate formula for adjusting the rate of return?

This section reviews several methods of allowing for flotation cost recovery. Since the regulatory methods of allowing for recovery of debt flotation costs is well known and widely accepted, I will begin my discussion of flotation cost recovery procedures by describing the widely accepted procedure of allowing for debt flotation cost recovery.

Debt Flotation Costs

Regulators uniformly recognize that companies incur flotation costs when they issue debt securities. They typically allow recovery of debt flotation costs by making an adjustment to both the cost of debt and the rate base (see Brigham [6]). Assume that: (1) a regulated company issues \$100 million in bonds that mature in 10 years; (2) the interest rate on these bonds is seven percent; and (3) flotation costs represent four percent of the amount of the proceeds. Then the cost of debt for regulatory purposes will generally be calculated as follows:

$$\begin{aligned}\text{Cost of Debt} &= \frac{\text{Interest expense} + \text{Amortization of flotation costs}}{\text{Principal value - Unamortized flotation costs}} \\ &= \frac{\$7{,}000{,}000 + \$400{,}000}{\$100{,}000{,}000 - \$4{,}000{,}000} \\ &= 7.71\%\end{aligned}$$

Thus, current regulatory practice requires that the cost of debt be adjusted upward by approximately 71 basis points, in this example, to allow for the recovery of debt flotation costs. This example does not include losses on reacquisition of debt. The flotation cost allowance would increase if losses on reacquisition of debt were included.

The logic behind the traditional method of allowing for recovery of debt flotation costs is simple. Although the company has issued $100 million in bonds, it can only invest $96 million in rate base because flotation costs have reduced the amount of funds received by $4 million. If the company is not allowed to earn a 71 basis point higher rate of return on the $96 million invested in rate base, it will not generate sufficient cash flow to pay the seven percent interest on the $100 million in bonds it has issued. Thus, proper regulatory treatment is to increase the required rate of return on debt by 71 basis points.

Equity Flotation Costs

The finance literature discusses several methods of recovering equity flotation costs. Since each method stems from a specific model, (i. e., set of assumptions) of a firm and its cash flows, I will highlight the assumptions that distinguish one method from another.

Arzac and Marcus. Arzac and Marcus [2] study the proper flotation cost adjustment formula for a firm that makes continuous use of retained earnings and external equity financing and maintains a constant capital structure (debt/equity ratio). They assume at the outset that underwriting expenses and underpricing apply only to new equity obtained from external sources. They also assume that a firm has previously recovered all underwriting expenses, issuer expenses, and underpricing associated with previous issues of new equity.

To discuss and compare various equity flotation cost adjustment formulas, Arzac and Marcus make use of the following notation:

k	=	an investors' required return on equity
r	=	a utility's allowed return on equity base
S	=	value of equity in the absence of flotation costs
S_f	=	value of equity net of flotation costs
K_t	=	equity base at time t
E_t	=	total earnings in year t
D_t	=	total cash dividends at time t
b	=	$(E_t - D_t) \div E_t$ = retention rate, expressed as a fraction of earnings
h	=	new equity issues, expressed as a fraction of earnings
m	=	equity investment rate, expressed as a fraction of earnings, $m = b + h < 1$
f	=	flotation costs, expressed as a fraction of the value of an issue.

Because of flotation costs, Arzac and Marcus assume that a firm must issue a greater amount of external equity each year than it actually needs. In terms of the above notation, a firm issues $hE_t \div (1-f)$ to obtain hE_t in external equity funding. Thus, each year a firm loses:

Equation 3

$$L = \frac{hE_t}{1-f} - hE_t = \frac{f}{1-f} \times hE_t$$

due to flotation expenses. The present value, V, of all future flotation expenses is:

Equation 4

$$V = \sum_{t=1}^{\infty} \frac{fhE_t}{(1-f)(1+k)^t} = \frac{fh}{1-f} \times \frac{rK_0}{k-mr}$$

To avoid diluting the value of the initial stockholder's equity, a regulatory authority needs to find the value of r, a firm's allowed return on equity base, that equates the value of equity net of flotation costs to the initial equity base ($S_f = K_0$). Since the value of equity net of flotation costs equals the value of equity in the absence of flotation costs minus the present value of flotation costs, a regulatory authority needs to find that value of *r* that solves the following equation:

$$S_f = S - L.$$

This value is:

Equation 5

$$r = \frac{k}{1 - \frac{fh}{1-f}}$$

To illustrate the Arzac-Marcus approach to adjusting the allowed return on equity for the effect of flotation costs, suppose that the cost of equity in the absence of flotation costs is 12 percent. Furthermore, assume that a firm obtains external equity financing each year equal to 10 percent of its earnings and that flotation expenses equal 5 percent of the value of each issue. Then, according to Arzac and Marcus, the allowed return on equity should be:

$$r = \frac{.12}{1 - \frac{(.05).(.1)}{.95}} = .1206 = 12.06\%$$

Summary. With respect to the three questions raised at the beginning of this section, it is evident that Arzac and Marcus believe the flotation cost adjustment should be applied each year, since continuous external equity financing is a fundamental assumption of their model. They also believe that the adjusted rate of return should be applied to the entire equity-financed portion of the rate base because their model is based on the assumption that the flotation cost adjustment mechanism will be applied to the entire equity financed portion of the rate base. Finally, Arzac and Marcus recommend a flotation cost adjustment formula, Equation (3), that implicitly excludes recovery of financing costs associated with financing in previous periods and includes only an allowance for the fraction of equity financing obtained from external sources.

Patterson. The Arzac-Marcus flotation cost adjustment formula is significantly different from the conventional approach (found in many introductory textbooks) which recommends the adjustment equation:

Equation 6

$$r = \frac{D_t}{P_{t-1}(1-f)} + g$$

where P_{t-1} is the stock price in the previous period and g is the expected dividend growth rate. Patterson [18] compares the Arzac-Marcus adjustment formula to the conventional approach and reaches the conclusion that the Arzac-Marcus formula effectively expenses issuance costs as they are incurred, while the conventional approach effectively amortizes them over an assumed infinite life of the equity issue. Thus, the conventional formula is similar to the formula for the recovery of debt flotation costs: it is not meant to compensate investors for the flotation costs of future issues, but instead is meant to compensate investors for the flotation costs of previous issues. Patterson argues that the conventional approach is more appropriate for rate making purposes because the plant purchased with external equity funds will yield benefits over many future periods.

Illustration. To illustrate the Patterson approach to flotation cost recovery, assume that a newly organized utility sells an initial issue of stock for $100 per share, and that the utility plans to finance all new investments with retained earnings. Assume also that: (1) the initial dividend per share is six dollars; (2) the expected long-run dividend growth rate is six percent; (3) the flotation cost is five percent of the amount of the proceeds; and (4) the payout ratio is 51.28 percent. Then, the investor's required rate of return on equity is [k = (D/P) + g = 6 percent + 6 percent = 12 percent]; and the flotation-cost-adjusted cost of equity is [6 percent (1/.95) + 6 percent = 12.316 percent].

The effects of the Patterson adjustment formula on the utility's rate base, dividends, earnings, and stock price are shown in Table 3. We see that the Patterson formula allows earnings and dividends to grow at the expected six percent rate. We also see that the present value of expected future dividends, $100, is just sufficient to induce investors to part with their money. If the present value of expected future dividends were less than $100, investors would not have been willing to invest $100 in the firm. Furthermore, the present value of future dividends will only equal $100 if the firm is allowed to earn the 12.316 percent flotation-cost-adjusted cost of equity on its entire rate base.

Summary. Patterson's opinions on the three issues raised in this section are in stark contrast to those of Arzac and Marcus. He believes that: (1) a flotation cost adjustment should be applied in every year, regardless of whether a firm issues any new equity in each year; (2) a flotation cost adjustment should be applied to the entire equity-financed portion of the rate base, including that portion financed by retained earnings; and (3) the rate of return adjustment formula should allow a firm to recover an appropriate fraction of all previous flotation expenses.

CONCLUSION

Having reviewed the literature and analyzed flotation cost issues, I conclude that:

Definition of Flotation Cost: A regulated firm should be allowed to recover both the total underwriting and issuance expenses associated with issuing securities and the cost of market pressure.

<u>Time Pattern of Flotation Cost Recovery</u>. Shareholders are indifferent between the alternatives of immediate recovery of flotation costs and recovery over time, as long as they are fairly compensated for the opportunity cost of their money. This opportunity cost must include both the time value of money and a risk premium for equity investments of this nature.

<u>Regulatory Recovery of Flotation Costs</u>. The Patterson approach to recovering flotation costs is the only rate-of-return-adjustment approach that meets the *Hope* case criterion that a regulated company's revenues must be sufficient to allow the company an opportunity to recover all prudently incurred expenses, including the cost of capital. The Patterson approach is also the only rate-of-return-adjustment approach that provides an incentive for investors to invest in the regulated company.

<u>Implementation of a Flotation Cost Adjustment</u>. As noted earlier, prevailing regulatory practice seems to be to allow the recovery of flotation costs through an adjustment to the required rate of return. My review of the literature on this subject indicates that there are at least two recommended methods of making this adjustment: the Patterson approach and the Arzac-Marcus approach. The Patterson approach assumes that a firm's flotation expenses on new equity issues are treated in the same manner as flotation expenses on new bond issues, i. e., they are amortized over future time periods. If this assumption is true (and I believe it is), then the flotation cost adjustment should be applied to a firm's entire equity base, including retained earnings. In practical terms, the Patterson approach produces an increase in a firm's cost of equity of approximately thirty basis points. The Arzac-Marcus approach assumes that flotation costs on new equity issues are recovered entirely in the year in which the securities are sold. Under the Arzac-Marcus assumption, a firm should not be allowed any adjustments for flotation costs associated with previous flotations. Instead, a firm should be allowed only an adjustment on future security sales as they occur. Under reasonable assumptions about the rate of new equity sales, this method produces an increase in the cost of equity of approximately six basis points. Since the Arzac-Marcus approach does not allow the company to recover the entire amount of its flotation cost, I recommend that this approach be rejected and the Patterson approach be accepted.

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Table 1

Direct Costs as a Percentage of Gross Proceeds for Equity (IPOs and SEOs) and Straight and Convertible Bonds Offered by Domestic Operating Companies 1990—1994[11]

Equities

	IPOs				SEOs			
Proceeds ($ in millions)	No. of Issues	Gross Spreads	Other Direct Expenses	Total Direct Costs	No. of Issues	Gross Spreads	Other Direct Expenses	Total Direct Costs
2-9.99	337	9.05%	7.91%	16.96%	167	7.72%	5.56%	13.28%
10-19.99	389	7.24%	4.39%	11.63%	310	6.23%	2.49%	8.72%
20-39.99	533	7.01%	2.69%	9.70%	425	5.60%	1.33%	6.93%
40-59.99	215	6.96%	1.76%	8.72%	261	5.05%	0.82%	5.87%
60-79.99	79	6.74%	1.46%	8.20%	143	4.57%	0.61%	5.18%
80-99.99	51	6.47%	1.44%	7.91%	71	4.25%	0.48%	4.73%
100-199.99	106	6.03%	1.03%	7.06%	152	3.85%	0.37%	4.22%
200-499.99	47	5.67%	0.86%	6.53%	55	3.26%	0.21%	3.47%
500 and up	10	5.21%	0.51%	5.72%	9	3.03%	0.12%	3.15%
Total/Average	**1,767**	**7.31%**	**3.69%**	**11.00%**	**1,593**	**5.44%**	**1.67%**	**7.11%**

Bonds

	Convertible Bonds				Straight Bonds			
Proceeds ($ in millions)	No. of Issues	Gross Spreads	Other Direct Expenses	Total Direct Costs	No. of Issues	Gross Spreads	Other Direct Expenses	Total Direct Costs
2-9.99	4	6.07%	2.68%	8.75%	32	2.07%	2.32%	4.39%
10-19.99	14	5.48%	3.18%	8.66%	78	1.36%	1.40%	2.76%
20-39.99	18	4.16%	1.95%	6.11%	89	1.54%	0.88%	2.42%
40-59.99	28	3.26%	1.04%	4.30%	90	0.72%	0.60%	1.32%
60-79.99	47	2.64%	0.59%	3.23%	92	1.76%	0.58%	2.34%
80-99.99	13	2.43%	0.61%	3.04%	112	1.55%	0.61%	2.16%
100-199.99	57	2.34%	0.42%	2.76%	409	1.77%	0.54%	2.31%
200-499.99	27	1.99%	0.19%	2.18%	170	1.79%	0.40%	2.19%
500 and up	3	2.00%	0.09%	2.09%	20	1.39%	0.25%	1.64%
Total/Average	**211**	**2.92%**	**0.87%**	**3.79%**	**1,092**	**1.62%**	**0.62%**	**2.24%**

Notes:

Closed-end funds and unit offerings are excluded from the sample. Rights offerings for SEOs are also excluded. Bond offerings do not include securities backed by mortgages and issues by Federal agencies. Only firm commitment offerings and non-shelf-registered offerings are included.
Gross Spreads as a percentage of total proceeds, including management fee, underwriting fee, and selling concession.
Other Direct Expenses as a percentage of total proceeds, including management fee, underwriting fee, and selling concession.
Total Direct Costs as a percentage of total proceeds (total direct costs are the sum of gross spreads and other direct expenses).

[11] Inmoo Lee, Scott Lochhead, Jay Ritter, and Quanshui Zhao, "The Costs of Raising Capital," *Journal of Financial Research* Vol 19 No 1 (Spring 1996) pp. 59—74.

Table 2

Direct Costs of Raising Capital 1990—1994
Utility versus Non-Utility Companies[12]

Equities

Non-Utilities	IPOs			SEOs		
Proceeds ($ in millions)	No. of Issues	Gross Spreads	Total Direct Costs	No. Of Issues	Gross Spreads	Total Direct Costs
2-9.99	332	9.04%	16.97%	154	7.91%	13.76%
10-19.99	388	7.24%	11.64%	278	6.42%	9.01%
20-39.99	528	7.01%	9.70%	399	5.70%	7.07%
40-59.99	214	6.96%	8.71%	240	5.17%	6.02%
60-79.99	78	6.74%	8.21%	131	4.68%	5.31%
80-99.99	47	6.46%	7.88%	60	4.35%	4.84%
100-199.99	101	6.01%	7.01%	137	3.97%	4.36%
200-499.99	44	5.65%	6.49%	50	3.27%	3.48%
500 and up	10	5.21%	5.72%	8	3.12%	3.25%
Total/Average	1,742	7.31%	11.01%	1,457	5.57%	7.32%
Utilities Only						
2-9.99	5	9.40%	16.54%	13	5.41%	7.68%
10-19.99	1	7.00%	8.77%	32	4.59%	6.21%
20-39.99	5	7.00%	9.86%	26	4.17%	4.96%
40-59.99	1	6.98%	11.55%	21	3.69%	4.12%
60-79.99	1	6.50%	7.55%	12	3.39%	3.72%
80-99.99	4	6.57%	8.24%	11	3.68%	4.11%
100-199.99	5	6.45%	7.96%	15	2.83%	2.98%
200-499.99	3	5.88%	7.00%	5	3.19%	3.48%
500 and up	0			1	2.25%	2.31%
Total/Average	25	7.15%	10.14%	136	4.01%	4.92%

[12] Lee *et al, op. cit*.

Table 2 (continued)
Direct Costs of Raising Capital 1990—1994
Utility versus Non-Utility Companies[13]

Bonds

Non- Utilities	Convertible Bonds			Straight Bonds		
Proceeds ($ in millions)	No. of Issues	Gross Spreads	Total Direct Costs	No. of Issues	Gross Spreads	Total Direct Costs
2-9.99	4	6.07%	8.75%	29	2.07%	4.53%
10-19.99	12	5.54%	8.65%	47	1.70%	3.28%
20-39.99	16	4.20%	6.23%	63	1.59%	2.52%
40-59.99	28	3.26%	4.30%	76	0.73%	1.37%
60-79.99	47	2.64%	3.23%	84	1.84%	2.44%
80-99.99	12	2.54%	3.19%	104	1.61%	2.25%
100-199.99	55	2.34%	2.77%	381	1.83%	2.38%
200-499.99	26	1.97%	2.16%	154	1.87%	2.27%
500 and up	3	2.00%	2.09%	19	1.28%	1.53%
Total/Average	203	2.90%	3.75%	957	1.70%	2.34%
Utilities Only						
2-9.99	0			3	2.00%	3.28%
10-19.99	2	5.13%	8.72%	31	0.86%	1.35%
20-39.99	2	3.88%	5.18%	26	1.40%	2.06%
40-59.99	0			14	0.63%	1.10%
60-79.99	0			8	0.87%	1.13%
80-99.99	1	1.13%	1.34%	8	0.71%	0.98%
100-199.99	2	2.50%	2.74%	28	1.06%	1.42%
200-499.99	1	2.50%	2.65%	16	1.00%	1.40%
500 and up	0			1	3.50%	na[14]
Total/Average	8	3.33%	4.66%	135	1.04%	1.47%

Notes:
Total proceeds raised in the United States, excluding proceeds from the exercise of over allotment options.
Gross spreads as a percentage of total proceeds (including management fee, underwriting fee, and selling concession).
Other direct expenses as a percentage of total proceeds (including registration fee and printing, legal, and auditing costs).

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[13] Lee *et al, op. cit*.

[14] Not available because of missing data on other direct expenses.

Table 3
Illustration of Patterson Approach to Flotation Cost Recovery

Time Period	Rate Base	Earnings @ 12.32%	Earnings @ 12.00%	Dividends	Amortization Initial FC
0	95.00				
1	100.70	11.70	11.40	6.00	0.3000
2	106.74	12.40	12.08	6.36	0.3180
3	113.15	13.15	12.81	6.74	0.3371
4	119.94	13.93	13.58	7.15	0.3573
5	127.13	14.77	14.39	7.57	0.3787
6	134.76	15.66	15.26	8.03	0.4015
7	142.84	16.60	16.17	8.51	0.4256
8	151.42	17.59	17.14	9.02	0.4511
9	160.50	18.65	18.17	9.56	0.4782
10	170.13	19.77	19.26	10.14	0.5068
11	180.34	20.95	20.42	10.75	0.5373
12	191.16	22.21	21.64	11.39	0.5695
13	202.63	23.54	22.94	12.07	0.6037
14	214.79	24.96	24.32	12.80	0.6399
15	227.67	26.45	25.77	13.57	0.6783
16	241.33	28.04	27.32	14.38	0.7190
17	255.81	29.72	28.96	15.24	0.7621
18	271.16	31.51	30.70	16.16	0.8078
19	287.43	33.40	32.54	17.13	0.8563
20	304.68	35.40	34.49	18.15	0.9077
21	322.96	37.52	36.56	19.24	0.9621
22	342.34	39.77	38.76	20.40	1.0199
23	362.88	42.16	41.08	21.62	1.0811
24	384.65	44.69	43.55	22.92	1.1459
25	407.73	47.37	46.16	24.29	1.2147
26	432.19	50.21	48.93	25.75	1.2876
27	458.12	53.23	51.86	27.30	1.3648
28	485.61	56.42	54.97	28.93	1.4467
29	514.75	59.81	58.27	30.67	1.5335
30	545.63	63.40	61.77	32.51	1.6255
Present Value@12%		195.00	190.00	100.00	5.00

APPENDIX 4
EX ANTE RISK PREMIUM APPROACH

My ex ante risk premium method is based on studies of the DCF expected return on proxy companies compared to the interest rate on Moody's A-rated utility bonds. Specifically, for each month in my study period, I calculate the risk premium using the equation,

$$RP_{PROXY} = DCF_{PROXY} - I_A$$

where:

RP_{PROXY}	=	the required risk premium on an equity investment in the proxy group of companies,
DCF_{PROXY}	=	average DCF estimated cost of equity on a portfolio of proxy companies; and
I_A	=	the yield to maturity on an investment in A-rated utility bonds.

For my ex ante risk premium analysis, I begin with my comparable group of natural gas companies shown in Schedule 2. Previous studies have shown that the ex ante risk premium tends to vary inversely with the level of interest rates, that is, the risk premium tends to increase when interest rates decline, and decrease when interest rates go up. To test whether my studies also indicate that the ex ante risk premium varies inversely with the level of interest rates, I perform a regression analysis of the relationship between the ex ante risk premium and the yield to maturity on A-rated utility bonds, using the equation,

$$RP_{PROXY} = a + (b \times I_A) + e$$

where:

RP_{PROXY} = risk premium on proxy company group;

I_A = yield to maturity on A-rated utility bonds;

e = a random residual; and

a, b = coefficients estimated by the regression procedure.

Regression analysis assumes that the statistical residuals from the regression equation are random. My examination of the residuals reveals that there is a significant probability that the residuals are serially correlated (non-zero serial correlation indicates that the residual in one time period tends to be correlated with the residual in the previous time period). Therefore, I make adjustments to my data to correct for the possibility of serial correlation in the residuals.

The common procedure for dealing with serial correlation in the residuals is to estimate the regression coefficients in two steps. First, a multiple regression analysis is used to estimate the serial correlation coefficient, *r*. Second, the estimated serial correlation coefficient is used to transform the original variables into new variables whose serial correlation is approximately zero. The regression coefficients are then re-estimated using the transformed variables as inputs in the regression equation. Based on my knowledge of the statistical relationship between the yield to maturity on A-rated utility bonds and the required risk premium, my estimate of the ex ante risk premium on an investment in my proxy natural gas company group as compared to an investment in A-rated utility bonds is given by the equation:

$$RP_{PROXY} = \underset{(8.87)}{0.706} - \underset{(-2.99)}{-.3494} \times I_A.$$ [15]

[15] The t-statistics are shown in parentheses.

Using a 6.57 percent forecasted yield to maturity on A-rated utility bonds at March 2010,[16] the regression equation produces an ex ante risk premium based on the natural gas proxy group equal to 4.77 percent (0.0706 – .3494 x 6.57 = 4.77).

To estimate the cost of equity using the ex ante risk premium method, one may add the estimated risk premium over the yield on A-rated utility bonds to the forecasted yield to maturity on A-rated utility bonds. As described above, my analyses produce an estimated risk premium over the yield on A-rated utility bonds equal to 4.77 percent. Adding an estimated risk premium of 4.77 percent to the 6.57 percent forecasted yield to maturity on A-rated utility bonds produces a cost of equity estimate of 11.34 percent using the ex ante risk premium method.

[16] As described in the testimony, is obtained by adding the 57-basis point spread between the average March 2010 yield on AAA-rated corporate bonds (5.27 percent) and A-rated utility bonds (5.84 percent) to Value Line's forecasted 6.0 percent yield on AAA-rated corporate bonds. *See* Value Line Selection & Opinion, February 26, 2010, p. 3019.

APPENDIX 5
EX POST RISK PREMIUM APPROACH

Source

Stock price and yield information is obtained from Standard & Poor's Security Price publication. Standard & Poor's derives the stock dividend yield by dividing the aggregate cash dividends (based on the latest known annual rate) by the aggregate market value of the stocks in the group. The bond price information is obtained by calculating the present value of a bond due in 30 years with a $4.00 coupon and a yield to maturity of a particular year's indicated Moody's A-rated Utility bond yield. The values shown on Schedules 4 and 5 are the January values of the respective indices.

Calculation of Stock and Bond Returns

Sample calculation of "Stock Return" column:

$$\text{Stock Return (2009)} = \left[\frac{\text{Stock Price (2010) - Stock Price (2009) + Dividend (2009)}}{\text{Stock Price (2009)}}\right]$$

where Dividend (2009) = Stock Price (2009) x Stock Div. Yield (2009)

Sample calculation of "Bond Return" column:

$$\text{Bond Return (2009)} = \left[\frac{\text{Bond Price (2010) - Bond Price (2009) + Interest (2009)}}{\text{Bond Price (2009)}}\right]$$

where Interest = $4.00.

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COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Scott W. Rungren

3. In Case No. 2012-00393,[1] Kentucky-American projected its issuance of $8 million in long-term debt in November 2012. In the present case, Kentucky-American has included the November 2012 long-term debt issuance in its forecasted capital structure.[2]

a. Confirm that Kentucky-American issued $8 million of long-term debt in November 2012 as originally projected.

b. (1) If Kentucky-American issued $8 million of long-term debt in November 2012, provide the terms and conditions of the $8 million long-term debt issuance. Include in the response the issuance date, actual interest rate, debt issuance cost, and principal amount.

(2) If Kentucky-American did not issue $8 million of long-term debt in November 2012, provide Kentucky-American's current projection for the issuance date, principal amount, interest rate, and the debt issuance cost and the reasons for the delay in the issuance of the projected debt.

Response:

a. The Company has not yet issued the $8 million of new long-term debt that was originally proposed in November 2012.

b. (1) Not applicable.

(2) The Company's current projection is that the debt will be issued in mid-May 2013, and will be combined with the $3 million issuance that was also scheduled for May 2013. Thus, the total issuance in May is expected to be $11 million. The projected interest rate is 5.20%, and the debt issuance costs are projected to be 3.0% of the issue amount.

The primary reason for postponing the debt financing until May 2013 is due to the delay related to the Northern Connection Project, the certificate for which was just approved by the Kentucky PSC on February 28, 2013.

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Witness: Linda C. Bridwell/Scott W. Rungren

4. In Case No. 2012-00393, Kentucky-American projected that the issuance of $3 million of long-term debt in March 2013 and in March 2014. In this current proceeding, Kentucky-American projects these issuances will be in May 2013 and May 2014. State the reasons for the changes in the dates of issuance.

Response:

The March 2013 and March 2014 dates were in error in the Case No. 2012-00393 application – the projected debt issuances were budgeted for May 2013 and May 2014.

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COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Scott W. Rungren

5. At page 8 of his direct testimony, Scott Rungren states that he added 2 percent to the September 7, 2012 Bloomberg's forward yield curve for 30-year Treasuries "to capture the estimated spread at which BBB+ rated utilities have issued above the 30 year treasury rate." List each state utility regulatory commission that has accepted Mr. Rungren's methodology to project the long-term interest rate and provide a representative decision from that commission.

Response:

Mr. Rungren does not recall specifically using this methodology in a previous case. The purpose of the methodology is to replicate the rate at which American Water Capital Corp. ("AWCC") is expected to issue debt at the projected financing date. AWCC's projected rate is used since KAWC's debt financing is expected to be obtained through AWCC. The Company continually strives to improve its methodology for forecasting its debt costs, which has resulted in the current approach of adding 2 percentage points to the projected 30-year U.S. Treasury rate.

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Witness: Scott W. Rungren

6. In its Response to Item 46 of Commission Staff's Second Request for Information, Kentucky-American provides a comparison of budgeted to actual debt issuance for the four-year period from 2009 through 2012. During this four-year period, Kentucky-American's actual weighted cost of debt is 86.57 percent[3] of the budgeted weighted cost. Explain why, in light of this information, Kentucky-American's projection for long-term interest rates is "indicative of the rate the Company will attain on issuances in 2013 and 2014."[4]

Response:

None of the projected interest rates noted in KAWC's response to Item 46 of the Commission Staff's Second Request for Information were calculated using the methodology the Company employed in this case to forecast its long-term debt interest rates. The projections developed by the Company in this case are based on the Bloomberg forward yield curve for 30-year U.S. Treasuries, with 2 percentage points added to reflect the spread in credit quality between American Water Capital Corp. ("AWCC") and the 30-year U.S. Treasury.

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[3] Actual: $6,706,875 (Interest) ÷ $117,390,000 (Principal) = 5.713%. Budgeted: $7,852,373 (Interest) ÷ $119,002,000 (Principal) = 6.599%. 5.713% (Actual Weighted Cost-of-Debt) ÷ 6.599% (Budgeted Weighted Cost-of-Debt) = 86.57%.

[4] Kentucky-American's Response to the Commission Staff's Second Information Request, Item 45(a).

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Witness: Scott W. Rungren

7. Calculate Kentucky-American's projected long-term interest rate using the Bloomberg's forward yield curve for 30-year Treasuries for February 28, 2013.

Response:

Using Bloomberg's forward yield curve for 30-year U.S. Treasuries and assuming current credit spread of 2.00%, American Water Capital Corp's indicative new issue pricing in the coming year would be between 5.3%-5.4% which would then be loaned to Kentucky-American at cost.

American Water Capital Corp indicative new issue pricing [1]

	May-13	Nov-13	May-14
Treasury Yield [2]	3.26%	3.34%	3.42%
Reoffer Spread [2][3]	2.00%	2.00%	2.00%
Reoffer Yield	5.26%	5.34%	5.42%

[1] For a 30-year unsecured, taxable, bullet bond with a make-whole call premium
[2] Based on Bloomberg forward curve for 30-year U.S. Treasuries
[3] Assumes that the credit spread stays constant at 200 bps

<HELP> for explanation. N193

US Treasury Actives Curve | 5) Export | 6) Graph | 55) Feedback | Forward Analysis

Curve Date 13-Mar-2013 Market Mid Back Test 13-Mar-2013 « Curve List

7) Horizon Curve | 8) Implied Forwards

Horizon Curve Dates

15-May-2013 Dt Projected | 15-Nov-2013 Dt Projected
15-May-2014 Dt Projected | 9 Mo Projected

US Treasury Actives Curve (REF)

Tenor	Spot	05/15/2013 (P)	11/15/2013 (P)	05/15/2014 (P)
1 Mo	0.0925	0.0938	0.1797	0.3141
2 Mo	0.0925	0.1066	0.1859	0.3238
3 Mo	0.0927	0.1154	0.1921	0.3338
6 Mo	0.1120	0.1355	0.2274	0.3624
9 Mo	0.1305	0.1546	0.2632	0.3918
1 Yr	0.1486	0.1814	0.2948	0.4338
2 Yr	0.2644	0.3074	0.4476	0.6274
3 Yr	0.4159	0.4780	0.6793	0.9062
4 Yr	0.6559	0.7233	0.9351	1.1718
5 Yr	0.8959	0.9705	1.2024	1.4531
7 Yr	1.4208	1.4918	1.7072	1.9337
9 Yr	1.8445	1.9170	2.1358	2.3342
10 Yr	2.0563	2.1027	2.2397	2.3772
12 Yr	2.1738	2.2169	2.3440	2.4718
15 Yr	2.3501	2.3900	2.5078	2.6266
20 Yr	2.6438	2.6811	2.7912	2.9026
30 Yr	3.2313	3.2586	3.3395	3.4206
50 Yr	3.3175	3.3398	3.4056	3.4717

Zoom 100%

KENTUCKY-AMERICAN WATER COMPANY
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COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Linda C. Bridwell

8. At page 20 of her direct testimony, Linda Bridwell states: "Each month, depreciation is recognized for 1/12th of each account's annual depreciation rate, multiplied by each account's prior month UPIS balance." In its prior forecasted rate cases, Kentucky-American calculated depreciation expense by multiplying the 13-month average utility plant is service by its depreciation rate.[5]

    a. State whether Kentucky-American's calculation of depreciation expense in this current case conforms to the methodology that it has used in prior forecasted rate cases. If not, explain the reason for the change in methodology.

    b. Calculate depreciation expenses for the forecasted test-period using the 13-month average utility plant in service balances. Compare the results by account to the depreciation expenses that Kentucky-American has requested in this proceeding.

Response:

a. The two methods of calculation are nearly mathematically identical. The current method conforms within a materiality threshold to the method used in the past.

b. Please see the attachment, which shows filed depreciation expense by account compared with the depreciation expense that would have been calculated for each account had a 13-month average been used. The attachment shows that there would have been an additional $16,163 in depreciation expense calculated using the latter method, a variance of approximately 1/10 of one percent.

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[5] *See, e.g.,* Case No. 97-034, *Application of Kentucky-American Water Company to Increase Its Rates* (Ky PSC Sept. 30, 1997) at 43.

Kentucky American Water
Case No. 2012-00520
Response to Commission Staff's Third Request for Information, item 8b.
KAW_R_PSCDR3_NUM08

Depreciation Expense Per Filing Using a Monthly Calculation
Including recognition of non-depreciating plant & depreciation adjustments

Depreciation Expense Uisng 13 Month Average UPIS
Including recognition of non-depreciating plant & depreciation adjustments

Utility	Account	Utility Plant Account	NARUC Acct	A Per Filing Forecasted Expense Aug 13-Jul 14 Expense	Forecast 13-Month Avg UPIS	UPIS Not Deprec.	Forecast 13-Month Avg Net UPIS	Annual Deprec. Rate	Depreciation Expense Before Adjust	Annual Deprec Adjust	B Per 13-Month Avg Forecasted Expense	Variance =B-A
Water	301000-Organization	301000	301.1	$ -	$ 37,450		$ 37,450	0.00%	$ -	$ -	$ -	$ -
Water	302000-Franchises	302000	302.1	$ -	$ 70,261		$ 70,261	0.00%	$ -	$ -	$ -	$ -
Water	303200-Land & Land Rights-Supply	303200	303.2	$ -	$ 1,077,363		$ 1,077,363	0.00%	$ -	$ -	$ -	$ -
Water	303300-Land & Land Rights-Pumping	303300	303.2	$ -	$ 195,966		$ 195,966	0.00%	$ -	$ -	$ -	$ -
Water	303400-Land & Land Rights-Treatment	303400	303.3	$ -	$ 800,183		$ 800,183	0.00%	$ -	$ -	$ -	$ -
Water	303500-Land & Land Rights-T&D	303500	303.4	$ -	$ 7,692,948		$ 7,692,948	0.00%	$ -	$ -	$ -	$ -
Water	304100-Struct & Imp-Supply	304100	304.2	$ 203,187	$ 6,958,361	$ -	$ 6,958,361	2.92%	$ 203,184	$ -	$ 203,184	$ (3)
Water	304200-Struct & Imp-Pumping	304200	304.2	$ 227,619	$ 9,602,924	$ -	$ 9,602,924	2.37%	$ 227,589	$ -	$ 227,589	$ (29)
Water	304300-Struct & Imp-Treatment	304300	304.3	$ 649,514	$ 26,418,624	$ -	$ 26,418,624	2.46%	$ 649,898	$ -	$ 649,898	$ 384
Water	304400-Struct & Imp-T&D	304400	304.4	$ 22,755	$ 909,077	$ -	$ 909,077	2.50%	$ 22,727	$ -	$ 22,727	$ (28)
Water	304500-Struct & Imp-General	304500	304.5	$ 120,231	$ 4,272,344	$ -	$ 4,272,344	2.82%	$ 120,480	$ -	$ 120,480	$ 249
Water	304600-Struct & Imp-Offices	304600	304.5	$ 109,719	$ 5,744,299	$ -	$ 5,744,299	1.91%	$ 109,716	$ -	$ 109,716	$ (3)
Water	304610-Struct & Imp-HVAC	304610	304.5	$ -	$ 10,570	$ -	$ 10,570	0.00%	$ -	$ -	$ -	$ -
Water	304700-Struct & Imp-Store,Shop,Gar	304700	304.5	$ 36,260	$ 1,786,124	$ -	$ 1,786,124	2.03%	$ 36,258	$ -	$ 36,258	$ (2)
Water	304800-Struct & Imp-Misc	304800	304.5	$ 75,169	$ 1,652,591	$ -	$ 1,652,591	4.53%	$ 74,862	$ -	$ 74,862	$ (306)
Water	305000-Collect & Impound Reservoirs	305000	305.2	$ 13,126	$ 986,753	$ -	$ 986,753	1.33%	$ 13,124	$ -	$ 13,124	$ (2)
Water	306000-Lake, River & Other Intakes	306000	306.2	$ 152,574	$ 7,449,191	$ -	$ 7,449,191	2.05%	$ 152,708	$ -	$ 152,708	$ 135
Water	309000-Supply Mains	309000	309.2	$ 557,645	$ 27,882,254	$ -	$ 27,882,254	2.00%	$ 557,645	$ -	$ 557,645	$ (0)
Water	310000-Power Generation Equip	310000	310.2	$ 98,900	$ 3,374,873	$ -	$ 3,374,873	2.93%	$ 98,884	$ -	$ 98,884	$ (16)
Water	311200-Pump Eqp Electric	311200	311.2	$ 222,983	$ 11,941,694	$ -	$ 11,941,694	1.87%	$ 223,310	$ -	$ 223,310	$ 327
Water	311300-Pump Eqp Diesel	311300	311.2	$ 13,137	$ 698,587	$ -	$ 698,587	1.88%	$ 13,133	$ -	$ 13,133	$ (4)
Water	311400-Pump Eqp Hydraulic	311400	311.2	$ 147	$ 7,728	$ -	$ 7,728	1.90%	$ 147	$ -	$ 147	$ -
Water	311500-Pump Eqp Other	311500	311.2	$ -	$ (1,481)	$ -	$ (1,481)	0.00%	$ -	$ -	$ -	$ -
Water	311520-Pump Eqp-SOS & Pumping	311520	311.2	$ 297,815	$ 14,739,896	$ -	$ 14,739,896	2.02%	$ 297,746	$ -	$ 297,746	$ (69)
Water	311530-Pump Eqp Wtr Treatment	311530	311.3	$ -	$ -	$ -	$ -	2.02%	$ -	$ -	$ -	$ -
Water	311540-Pumping Equipment TD	311540	311.4	$ 5,569	$ 285,667	$ -	$ 285,667	2.02%	$ 5,770	$ -	$ 5,770	$ 202
Water	320100-WT Equip Non-Media	320100	320.3	$ 1,139,438	$ 52,590,019	$ -	$ 52,590,019	2.16%	$ 1,135,944	$ -	$ 1,135,944	$ (3,493)
Water	320200-WT Equip Filter Media	320200	320.3	$ 123,485	$ 508,588	$ -	$ 508,588	24.28%	$ 123,485	$ -	$ 123,485	$ -
Water	330000-Dist Reservoirs & Standpipes	330000	330.4	$ 29,405	$ 1,771,358	$ -	$ 1,771,358	1.66%	$ 29,405	$ -	$ 29,405	$ -
Water	330100-Elevated Tanks & Standpipes	330100	330.4	$ 194,539	$ 12,083,404	$ -	$ 12,083,404	1.62%	$ 195,751	$ -	$ 195,751	$ 1,212
Water	330200-Ground Level Tanks	330200	330.4	$ 49,378	$ 3,582,591	$ -	$ 3,582,591	1.38%	$ 49,440	$ -	$ 49,440	$ 61
Water	330400-Clearwell	330400	330.4	$ 43,374	$ 2,581,757	$ -	$ 2,581,757	1.68%	$ 43,374	$ -	$ 43,374	$ -
Water	331001-TD Mains Not Classified	331001	331.4	$ 2,351,366	$ 163,769,332	$ -	$ 163,769,332	1.44%	$ 2,358,278	$ -	$ 2,358,278	$ 6,912
Water	331100-TD Mains 4in & Less	331100	331.4	$ 80,283	$ 5,575,196	$ -	$ 5,575,196	1.44%	$ 80,283	$ -	$ 80,283	$ (0)
Water	331200-TD Mains 6in to 8in	331200	331.4	$ 300,219	$ 20,848,506	$ -	$ 20,848,506	1.44%	$ 300,218	$ -	$ 300,218	$ (0)
Water	331300-TD Mains 10in to 16in	331300	331.4	$ 130,997	$ 9,097,048	$ -	$ 9,097,048	1.44%	$ 130,997	$ -	$ 130,997	$ -
Water	331400-TD Mains 18in & Grtr	331400	331.4	$ 1,048,367	$ 72,803,256	$ -	$ 72,803,256	1.44%	$ 1,048,367	$ -	$ 1,048,367	$ (0)
Water	333000-Services	333000	333.4	$ 750,658	$ 50,133,322	$ -	$ 50,133,322	1.50%	$ 752,000	$ -	$ 752,000	$ 1,342
Water	334100-Meters	334100	334.4	$ 423,442	$ 17,509,021	$ -	$ 17,509,021	2.44%	$ 427,220	$ -	$ 427,220	$ 3,778
Water	334110-Meters Bronze Case	334110	334.4	$ 56,549	$ 2,270,905	$ -	$ 2,270,905	2.49%	$ 56,546	$ -	$ 56,546	$ (4)
Water	334120-Meters Plastic Case	334120	334.4	$ 7,355	$ 242,892	$ -	$ 242,892	2.95%	$ 7,165	$ -	$ 7,165	$ (189)
Water	334130-Meters Other	334130	334.4	$ 160,930	$ 6,082,047	$ -	$ 6,082,047	2.64%	$ 160,566	$ -	$ 160,566	$ (364)
Water	334131-Meter Reading Units	334131	334.4	$ 8,293	$ 314,141	$ -	$ 314,141	2.64%	$ 8,293	$ -	$ 8,293	$ -
Water	334200-Meter Installations	334200	334.4	$ 466,586	$ 18,446,208	$ -	$ 18,446,208	2.53%	$ 466,689	$ -	$ 466,689	$ 103
Water	334300-Meter Vaults	334300	334.4	$ 12,490	$ 510,582	$ -	$ 510,582	2.48%	$ 12,662	$ -	$ 12,662	$ 172
Water	335000-Hydrants	335000	335.4	$ 172,878	$ 14,553,433	$ -	$ 14,553,433	1.19%	$ 173,186	$ -	$ 173,186	$ 308
Water	339100-Other P/E-Intangible	339100	339.1	$ 1,625	$ 8,375	$ -	$ 8,375	19.40%	$ 1,625	$ -	$ 1,625	$ -
Water	339600-Other P/E-CPS	339600	339.1	$ 82,169	$ 768,447	$ -	$ 768,447	10.72%	$ 82,378	$ -	$ 82,378	$ 209
Water	340100-Office Furniture & Equip	340100	340.5	$ 25,830	$ 767,891	$ 103,460	$ 664,431	5.00%	$ 33,222	$ 7,456	$ 25,766	$ (64)
Water	340210-Comp & Periph Mainframe	340210	340.5	$ 18,060	$ 81,974	$ 11,522	$ 70,452	20.00%	$ 14,090	$ (3,926)	$ 18,016	$ (44)
Water	340220-Comp & Periph Personal	340220	340.5	$ (52,517)	$ 847,824	$ 414,948	$ 432,877	20.00%	$ 86,575	$ 139,902	$ (53,327)	$ (809)
Water	340230-Comp & Periph Other	340230	340.5	$ 145,091	$ 736,455	$ 88,579	$ 647,876	20.00%	$ 129,575	$ (15,423)	$ 144,999	$ (92)
Water	340240-Comp & Periph Capital Lease	340240	340.5	$ -	$ -	$ -	$ -	0.00%	$ -	$ -	$ -	$ -
Water	340300-Computer Software	340300	340.5	$ (72,421)	$ 3,586,100	$ 3,459,484	$ 126,616	20.00%	$ 25,323	$ 99,167	$ (73,844)	$ (1,423)

Kentucky American Water
Case No. 2012-00520
Response to Commission Staff's Third Request for Information, item 8b.
KAW_R_PSCDR3_NUM08

				Depreciation Expense Per Filing Using a Monthly Calculation Including recognition of non-depreciating plant & depreciation adjustments	**Depreciation Expense Uisng 13 Month Average UPIS Including recognition of non-depreciating plant & depreciation adjustments**							**Variance**
				A							**B**	=B-A
Utility	Account	Utility Plant Account	NARUC Acct	**Per Filing Forecasted Expense Aug 13-Jul 14 Expense**	Forecast 13-Month Avg UPIS	UPIS Not Deprec.	Forecast 13-Month Avg Net UPIS	Annual Deprec. Rate	Depreciation Expense Before Adjust	Annual Deprec Adjust	**Per 13-Month Avg Forecasted Expense**	
Water	340320-Comp Software Personal	340320	340.5	$ (84,352)	$ 3,481	$ 400	$ 3,081	20.00%	$ 616	$ 84,968	$ (84,352)	**$ -**
Water	340325-Comp Software Customized	340325	340.5	$ 140,044	$ 700,218	$ -	$ 700,218	20.00%	$ 140,044	$ -	$ 140,044	**$ -**
Water	340330-Comp Software Other	340330	340.5	$ 26,328	$ 765,081	$ 527,874	$ 237,207	20.00%	$ 47,441	$ 21,113	$ 26,328	**$ -**
Water	340500-Other Office Equipment	340500	340.5	$ 1,078	$ 65,686	$ 4,285	$ 61,401	6.67%	$ 4,095	$ 3,035	$ 1,061	**$ (17)**
Water	341100-Trans Equip Lt Duty Trks	341100	341.5	$ 37,433	$ 1,959,641	$ -	$ 1,959,641	1.91%	$ 37,429	$ -	$ 37,429	**$ (4)**
Water	341200-Trans Equip Hvy Duty Trks	341200	341.5	$ 51,755	$ 1,891,616	$ -	$ 1,891,616	2.75%	$ 52,019	$ -	$ 52,019	**$ 264**
Water	341300-Trans Equip Autos	341300	341.5	$ 22,494	$ 332,674	$ 96,396	$ 236,278	10.00%	$ 23,628	$ -	$ 23,628	**$ 1,134**
Water	341400-Trans Equip Other	341400	341.5	$ 32,073	$ 581,429	$ -	$ 581,429	5.51%	$ 32,037	$ -	$ 32,037	**$ (36)**
Water	342000-Stores Equipment	342000	342.5	$ 957	$ 37,494	$ 2,268	$ 35,226	4.00%	$ 1,409	$ 452	$ 957	**$ (1)**
Water	343000-Tools,Shop,Garage Equip	343000	343.5	$ 102,075	$ 2,635,323	$ 167,786	$ 2,467,538	5.00%	$ 123,377	$ 20,392	$ 102,985	**$ 910**
Water	344000-Laboratory Equipment	344000	344.5	$ 51,215	$ 1,265,250	$ 121,286	$ 1,143,963	6.67%	$ 76,302	$ 25,176	$ 51,126	**$ (88)**
Water	345000-Power Operated Equipment	345000	345.5	$ 36,333	$ 1,440,950	$ -	$ 1,440,950	2.52%	$ 36,312	$ -	$ 36,312	**$ (21)**
Water	346100-Comm Equip Non-Telephone	346100	346.5	$ 196,701	$ 1,805,033	$ 189,097	$ 1,615,935	6.67%	$ 107,783	$ (88,768)	$ 196,551	**$ (150)**
Water	346190-Remote Control & Instrument	346190	346.5	$ 225,526	$ 3,427,142	$ -	$ 3,427,142	6.67%	$ 228,590	$ (151)	$ 228,741	**$ 3,215**
Water	346200-Comm Equip Telephone	346200	346.5	$ 21,038	$ 283,749	$ -	$ 283,749	6.67%	$ 18,926	$ (2,112)	$ 21,038	**$ -**
Water	347000-Misc Equipment	347000	347.5	$ 80,879	$ 1,520,141	$ 87,357	$ 1,432,783	5.00%	$ 71,639	$ (9,200)	$ 80,839	**$ (40)**
Water	348000-Other Tangible Property	348000	348.5	$ (20,453)	$ 377,207	$ -	$ 377,207	5.00%	$ 18,860	$ 39,296	$ (20,436)	**$ 17**
Water	354200-WW Struct & Imp Collection	354200	354.2	$ -	$ -	$ -	$ -	5.00%	$ -	$ -	$ -	**$ -**
Water	340315-Comp Software Specia	340315	C3405	$ 1,152,023	$ 11,545,570	$ -	$ 11,545,570	10.00%	$ 1,154,557	$ -	$ 1,154,557	**$ 2,534**
Water	339300-Other P/E-Treatment	339300	C3393	$ -	$ 237,772	$ -	$ 237,772	0.00%	$ -	$ -	$ -	**$ -**
	Water Life Rate Depreciation Expense			$ 12,577,367	$ 627,540,378				$ 12,914,907	$ 321,378	$ 12,593,529	**$ 16,163**
											Variance:	**0.129%**

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Linda C. Bridwell

9. At page 21 of her direct testimony, Linda Bridwell states that depreciation expense and the Cost of Removal ("COR") have been separated. State whether Kentucky-American's methodology for these two expenses in the current proceeding conforms to the methodology that Kentucky-American proposed and the Commission accepted in Case No. 2010-00036.[6]

Response:

This methodology conforms to the methodology that Kentucky American proposed and the Commission accepted in Case No. 2010-00036. Depreciation and Cost of Removal rates may be combined or segregated with mathematically identical results. Please see equations below.

<u>In the 2010 Case, the calculation was as follows:</u>
UPIS x (Cost of Removal % + Depreciation %) = Expense

<u>In the 2012 Case, the calculation is:</u>
(UPIS x Cost of Removal %) + (UPIS x Depreciation %) = Expense

These are identical calculations.

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[6] Case No. 2010-00036, *Application of Kentucky-American Water Company for an Adjustment of Rates Supported by a Fully Forecasted Test Year* (Ky. PSC Dec. 14, 2010).

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: **Linda C. Bridwell**

10. At page 12 of his direct testimony, Lance Williams describes projects I12-300003 and IP-1235-5, the Northern Division Connection. On February 28, 2013, the Commission granted Kentucky-American a Certificate of Convenience and Necessity to construct the Northern Division Connection.[7]

a. Describe the effect of the date of the Commission's action, if any, on Kentucky-American's projected construction schedule for the Northern Division Connection.

b. Provide a schedule listing each item currently included in rate base, capital structure, and income statement that involves the Northern Division Connection. Show the effect of the construction of the Northern Division Connection on Kentucky-American's requested revenue requirement increase.

c. If Kentucky-American's projected construction schedule for the Northern Division Connection is affected by the date of the Commission's action, provide a schedule similar to the schedule provided in Item 10(b) that shows the effect on Kentucky-American's revenue requirement. Provide all work papers, state all assumptions, and show all calculations used to derive this Response.

Response:

a. Kentucky American has confirmed with its contractors that the projected in-service date will remain 12/28/2013. The monthly capital expenditures forecast has been revised based on the detailed information from the contractors and materials suppliers.

b. Please see the first page of the attachment, which lists each item in the current case associated with the Northern Division Connection. The effect on Kentucky American's requested increase is $693,839. The overall effect on the revenue requirement is $1,015,424, but $321,585 of this is covered by present rate revenues from AFUDC, consistent with prior treatment of CWIP.

Please note that this is for a partial year of costs and savings, with different components at different levels of maturity (see footnote of first page of attachment.)

c. Updated schedules from the contractors, including price escalators of approximately $461,298 that were included in the bid, would increase the rate request by $27,143. The overall effect on the revenue requirement would be $31,409, but $4,267 of this is covered by present rate revenues from AFUDC. Please see pages 2 - 105 of the attached for the summary schedule and supporting work papers. Key assumption is the revised capital spend timeline shown on pages 7-10 of attachment.

[7] Case No. 2012-00096, *Application of Kentucky-American Water Company for A Certificate of Public Convenience and Necessity Authorizing Construction of the Northern Division Connection* (Ky. PSC Feb. 28, 2013).

Kentucky American Water
Case No. 2012-00520
Commission Staff's Third Request for information, Item 10 B
Northern Division in Current Case

Line #	Revenue Requirement Item Related to Northern Connection Project	2012-00520 Filing With Northern Cnxn	2012-00520 If Northern Cnxn Not In Case	Variance = Northern Cnxn Impact on Case [2]
1	**Income Statement:**			
2				
3	AFUDC Revenues (CWIP)	$ 491,629	$ 170,044	$ 321,585
4	**Total Revenues (Line 3)**	**$ 491,629**	**$ 170,044**	**$ 321,585**
5				
6	Purchased Water	$ 207,227	$ 335,669	$ (128,442)
7	Fuel & Power	$ 3,768,292	$ 3,794,314	$ (26,022)
8	Chemicals	$ 1,779,872	$ 1,875,293	$ (95,421)
9	Waste Disposal	$ 336,750	$ 347,600	$ (10,850)
10	Salaries and Wages	$ 6,880,213	$ 7,015,959	$ (135,746)
11	Pension	$ 983,207	$ 986,369	$ (3,161)
12	Group Insurance	$ 2,109,504	$ 2,133,112	$ (23,608)
13	Other Benefits	$ 403,472	$ 408,188	$ (4,716)
14	Depreciation	$ 11,517,623	$ 11,413,154	$ 104,469
15	Cost of Removal	$ 1,603,978	$ 1,585,732	$ 18,246
16	General Tax	$ 5,114,771	$ 5,056,490	$ 58,281
17	Income Tax Effect of Expenses (Sum Lines 6 through 16 x .389) x -1	$ (13,500,210)	$ (13,596,281)	$ 96,072
18	Income Tax Effect of Debt Expense (Line 35 x .389 x weighted cost of debt 3.22%) x-1			$ (161,066)
19	**Total Expenses (Sum Lines 6 - Line 18)**	**$ 21,204,699**	**$ 21,355,599**	**$ (311,966)**
20				
21	**Increase or (Decrease) to Utility Operating Income: (Line 4 - Line 19)**	**$ (20,713,070)**	**$ (21,185,555)**	**$ 633,550**
22				
23	**Rate Base**			
24	Utility Plant in Service (Additions net of Retirements)	$ 627,540,378	$ 619,924,912	$ 7,615,467
25	Construction Work in Progress	$ 6,851,268	$ 2,530,297	$ 4,320,971
26	Accumulated Depreciation UPIS (Accumulations net of Retirements)	$ 136,601,886	$ 137,619,226	$ (1,017,340) [1]
27	**Net Plant (Line 24 + Line 25 - Line 26)**	**$ 497,789,759**	**$ 484,835,982**	**$ 12,953,777**
28				
29	Working Capital	$ 3,946,000	$ 3,917,000	$ 29,000
30	**Total Additions**	**$ 3,946,000**	**$ 3,917,000**	**$ 29,000**
31				
32	Deferred Taxes	$ 57,007,044	$ 56,883,025	$ 124,019
33	**Total Deductions:**	**$ 57,007,044**	**$ 56,883,025**	**$ 124,019**
34				
35	**Increase or (Decrease) to Net Rate Base (Line 27 + Line 30 - Line 33)**			**$ 12,858,758**
36	**Capital Structure:**			
37	It is presumed that the Northern Connection is funded in the same fashion as other projects.			
38	The presumed impact on capital structures is an increase consistent with rate base			**$ 12,858,758**
39				
40	**Rate of Return**			8.20%
41				
42	**Increase or (Decrease) to Return on Rate Base (Line 35 x Line 40)**			**$ 1,054,418**
43				
44	Less Operating Income (Line 21)			$ 633,550
45				
46	**Increase in Operating Income Required (Line 42 - Line 44)**			**$ 420,868**
47				
48	Gross Up (Exhibit 37, Schedule H)			1.648591461
49				
50	**Total Impact on Rate Increase Request (Line 46 x Line 48)**			**$ 693,839** [2]
51				
52	**Total Effect on Revenue Requirement (Line 11+ Line 50)** **($321,585 is covered by AFUDC and is not reflected in rate increase to customer]**			**$ 1,015,424**
53				
54	[1] - Accumulated Depreciation is a larger liability without the Northern Connection, because the Owenton WTP retirement does not take place. (UPIS is inverseley affected by this lack of retirement.)			
55	[2] This reflects:			
56	-Approximately 91% of rate base & property tax costs. ($12.953m net plant out of $14.135m project)			
57	-Approximately 58% of O&M savings & 58% of new UPIS depreciation costs, (7 months)			
58	-Approximately 31% of retirement impacts (4 months)			

Kentucky American Water
Case No. 2012-00520
Commission Staff's Third Request for information, Item 10 C
Ratemaking Impact of Latest Northern Division Construction Schedule, including impact of Cost Escalators Due to Certificate Approval Timing

Line #	Revenue Requirement Item Related to Northern Connection Project	2012-00520 Per Fiing	With Cost Escalator Updates	Variance = Impact on Case
1	**Income Statement:**			
2				
3	AFUDC Revenues (CWIP)	$ 491,629	495,896	$ 4,267
4	**Total Revenues (Line 3)**	**$ 491,629**	**$ 495,896**	**$ 4,267**
5				
6	Depreciation	$ 11,517,623	$ 11,522,350	$ 4,727
7	Cost of Removal	$ 1,603,978	$ 1,604,831	$ 852
8	General Tax	$ 5,114,771	$ 5,118,296	$ 3,525
9	Income Tax Effect of Expenses (Sum Lines 6 through 16 x .389) x -1	$ (7,093,949)	$ (7,097,491)	$ (3,542)
10	Income Tax Effect of Debt Expense (Line 35 x .389 x weighted cost of debt 3.22%) x-1	$ -	$ -	$ (2,735)
11	**Total Expenses (Sum Lines 6 - Line 10)**	**$ 11,142,424**	**$ 11,147,986**	**$ 2,828**
12				
13	**Increase or (Decrease) to Utility Operating Income: (Line 4 - Line 11)**	**$ (10,650,794)**	**$ (10,652,091)**	**$ 1,439**
14				
15	**Rate Base**			
16	Utility Plant in Service (Additions net of Retirements)	$ 627,540,378	$ 627,857,862	$ 317,484
17	Construction Work in Progress	$ 6,851,268	$ 6,759,272	$ (91,995)
18	Accumulated Provision for Depreciation UPIS (Accumulations net of Retirements)	$ 136,601,886	$ 136,603,786	$ 1,899
19	**Net Plant (Line 16 + Line 17 - Line 18)**	**$ 497,789,759**	**$ 498,013,349**	**$ 223,589**
20				
21	Deferred Taxes	$ 57,007,044	$ 57,012,307	$ 5,263
22	**Total Deductions:**			**$ 5,263**
23				
24	**Increase or (Decrease) to Net Rate Base (Line 19 - Line 22)**			**$ 218,326**
25	**Capital Structure:**			
26	It is presumed that the Northern Connection is funded in the same fashion as other projects.			
27	The presumed impact on capital structures is an increase consistent with rate base			**$ 218,326**
28				
29	**Rate of Return**			8.20%
30				
31	**Increase or (Decrease) to Return on Rate Base (Line 24 x Line 29)**			**$ 17,903**
32				
33	Less Operating Income (Line 13)			$ 1,439
34				
35	**Increase in Operating Income Required (Line 31 - Line 33)**			**$ 16,464**
36				
37	Gross Up (Exhibit 37, Schedule H)			1.648591461
38				
39	**Total Impact on Rate Increase Request (Line 35 x Line 37)**			**$ 27,143**
40				
41	**Total Effect on Revenue Requirement (Line 4 + Line 39)** **($4,267 is covered by AFUDC and is not reflected in rate increase to customer)**			**$ 31,409**
42				

KENTUCKY-AMERICAN WATER COMPANY
Case No. 2012-00520
RATE BASE SUMMARY
AS OF MARCH 31, 2013

EXHIBIT 37, SCHEDULE B-1
Exhibits\Rate Base\[K_RB12 - revised.xlsx]Sch B-1
PAGE 1 OF 2
Witness Responsible L. Bridwell

DATA: _X_ BASE PERIOD ___ FORECASTED PERIOD
TYPE OF FILING: _X_ ORIGINAL __ UPDATED __ REVISED

Line No.	Rate Base Component	Supporting Schedule Reference	Base Period	Excel File Location
1				
2	Utility Plant In Service	B-2	$ 598,439,503	Exhibits\Rate Base\[K_RB12 - revised.xlsx]Sch B-2
3				
4	Property Held for Future Use	B-2.6	0	Exhibits\Rate Base\[K_RB12 - revised.xlsx]Sch B-2
5				
6	Utility Plant Acquisition Adjustments		0	
7				
8	Accumulated Depreciation	B-3	(128,076,322)	Exhibits\Rate Base\[K_RB12 - revised.xlsx]Sch B-3
9				
10				
11				
12	Net Utility Plant In Service		470,363,181	
13				
14				
15	Construction Work in Progress	B-4	11,962,256	Exhibits\Rate Base\[K_RB12 - revised.xlsx]Sch B-4
16				
17	Working Capital Allowance	B-5/W/P - 1-13	2,700,000	Exhibits\Rate Base\[K_RB12 - revised.xlsx]Sch B-5
18				
19	Other Working Capital Allowance	B-5 & W/P - 1-5	727,081	Exhibits\Rate Base\[K_RB12 - revised.xlsx]Sch B-5
20				
21	Contributions in Aid of Construction	B-6	(52,036,709)	Exhibits\Rate Base\[K_RB12 - revised.xlsx]Sch B-6
22				
23	Customer Advances	B-6	(13,545,381)	Exhibits\Rate Base\[K_RB12 - revised.xlsx]Sch B-6
24				
25	Deferred Income Taxes	B-6	(55,288,734)	Exhibits\Rate Base\[K_RB12 - revised.xlsx]Sch B-6
26				
27	Deferred Investment Tax Credits	B-6	(61,653)	Exhibits\Rate Base\[K_RB12 - revised.xlsx]Sch B-6
28				
29	Deferred Maintenance	W/P-1-10	3,226,606	Exhibits\Rate Base\[2012 Rate Case Deferred Maintenance 10.xlsx]Schedule - rate base
30				
31	Deferred Debits	W/P-1-11	1,583,971	Exhibits\Rate Base\[2012 Rate Case Deferred Debits.xlsx]summary
32				
33	Other Rate Base Elements	W/P-1-12	739,176	Exhibits\Rate Base\[Other Rate Base.xls]Schedule
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45	Jurisdictional Rate Base		$370,369,793	

KENTUCKY-AMERICAN WATER COMPANY
Case No. 2012-00520
RATE BASE SUMMARY
AS OF JULY 31, 2014

EXHIBIT 37, SCHEDULE B-1
Exhibits\Rate Base\[K_RB12 - revised.xlsx]Sch B-1
PAGE 2 OF 2
Witness Responsible L. Bridwell

DATA: ___ BASE PERIOD _X_ FORECASTED PERIOD
TYPE OF FILING: _X_ ORIGINAL __ UPDATED __ REVISED

Line No.	Rate Base Component	Supporting Schedule Reference	End of Period Amount	13 Month Avg Forecasted Period Amount	
1					
2	Utility Plant In Service	B-2	$637,683,434	$627,857,862	Exhibits\Rate Base\[K_RB12 - revised.xlsx]Sch B-2
3					
4	Property Held for Future Use	B-2.6	0	0	Exhibits\Rate Base\[K_RB12 - revised.xlsx]Sch B-2
5					
6	Utility Plant Acquisition Adjustments		0	0	
7					
8	Accumulated Depreciation	B-3	(140,037,046)	(136,603,785)	Exhibits\Rate Base\[K_RB12 - revised.xlsx]Sch B-3
9					
10					
11					
12	Net Utility Plant In Service		497,646,388	491,254,077	
13					
14					
15	Construction Work in Progress	B-4	5,769,198	6,759,272	Exhibits\Rate Base\[K_RB12 - revised.xlsx]Sch B-4
16					
17	Working Capital Allowance	B-5/W/P - 1-13	3,946,000	3,946,000	Exhibits\Rate Base\[K_RB12 - revised.xlsx]Sch B-5
18					
19	Other Working Capital Allowance	B-5 & W/P - 1-5	727,081	727,081	Exhibits\Rate Base\[K_RB12 - revised.xlsx]Sch B-5
20					
21	Contributions in Aid of Construction	B-6	(52,303,874)	(52,238,690)	Exhibits\Rate Base\[K_RB12 - revised.xlsx]Sch B-6
22					
23	Customer Advances	B-6	(14,239,381)	(13,997,843)	Exhibits\Rate Base\[K_RB12 - revised.xlsx]Sch B-6
24					
25	Deferred Income Taxes	B-6	(59,359,631)	(57,012,307)	Exhibits\Rate Base\[K_RB12 - revised.xlsx]Sch B-6
26					
27	Deferred Investment Tax Credits	B-6	(51,450)	(55,276)	Exhibits\Rate Base\[K_RB12 - revised.xlsx]Sch B-6
28					
29	Deferred Maintenance	W/P-1-10	5,061,367	4,644,233	Exhibits\Rate Base\[2012 Rate Case Deferred Maintenance 10.xlsx]Schedule - rate base
30					
31	Deferred Debits	W/P-1-11	1,507,864	1,536,404	Exhibits\Rate Base\[2012 Rate Case Deferred Debits.xlsx]summary
32					
33	Other Rate Base Elements	W/P-1-12	562,831	650,081	Exhibits\Rate Base\[Other Rate Base.xls]Schedule
34					
35					
36					
37					
38					
39					
40					
41					
42					
43					
44					
45	Jurisdictional Rate Base		$389,266,393	$386,213,033	

Workpaper #: **W/P - 5**
Excel Reference: **Exhibits\Expense\[General Tax.xlsx]Exhibit - General Tax**

Kentucky American Water Company
Case No. 2012-00520
ProForma Adjustment of General Tax
For the 12 Months Ending July 31, 2014

Witness Responsible:
Type of Filing: __X__ Original _____ Updated _____ Revised

Line No.	Description	Base Year at 3/31/2013	Adjustments	Forecast Year at 7/31/2014	Reference
1	**Base Year for the 12 Months Ended 3/31/113**				
2	Property Tax	$ 4,132,859		$ 4,132,859	
3	Payroll Taxes	$ 535,417		$ 535,417	
4	Reg Assessment Taxes	$ 126,894		$ 126,894	
5	Tax Discounts	$ (7,847)			
6	Othr Taxes &Licenses	$ 10,000			
7	**Total Base Year**	**$ 4,797,323**		$ 4,797,323	
8					
9	**Adjustments:**				
10	Apply Known & Measurable Current Property Tax Rate to Forecasted Property Levels		$ 326,437	$ 326,437	
11	Adjust Paryoll Taxes for Merit Increases & Contract Wage Changes		(2,816)	$ (2,816)	
12	Adjust Reg Assessment Fees for Average Tax Rate x Forecasted Present Rate Revenue		(3,235)	$ (3,235)	
13	Tax Discount Adjustment		7,847	$ 7,847	
14	Other Taxes & Licenses Adjustment		(7,260)	$ (7,260)	
15	**Total Adjustments:**		**$ 320,973**	$ 320,973	
16					
17					
18	Adjusted Property Tax			$ 4,459,297	Exhibits\Expense\[General Tax.xlsx]Property Tax Wksht
19	Adjusted Payroll Tax			$ 532,600	Exhibits\Expense\[Labor and Labor Related.xlsx]Exhibit Payroll Taxes
20	Adjusted Reg Assessment Fee Tax			$ 123,659	Exhibits\Expense\[PSC Fees Exhibit.xlsx]PSC Fee
21	Adjusted Taxes & Licenses			$ 2,740	Exhibits\Expense\[General Tax.xlsx]Taxes & Licenses
22	**Forecasted Year at Present Rates**			**$ 5,118,296**	
23					

Kentucky American **W/P - 5-1**
Calculation of Forecast Year Property Tax **Exhibits\Expense\[General Tax.xlsx]Property Tax Wksht**

Line No.	Description		2012	
1	**Baseline Tax Rate:**			
2	Property Taxes for 2012 Bills	$	4,215,160	
3	UPIS, CWIP & Materials & Supplies 12/31/2011	$	591,511,776	
4	2012 Property Tax Per Dollar of Property (Line 2 / Line 3)		0.7126%	
5				
6				
7	**Forecast Year Property**		**Amount**	**Months of Forecast Year**
8	Water Utility Plant in Service, CWIP, & Materials & Supplies 12/31/2012	$	610,985,735	5
9	Water Utility Plant in Service, CWIP, & Materials & Supplies 12/31/2013	$	636,332,536	7
	Weighted Average			
10	((Line 8 Amount x Line 8 Months)+(Line 9 Amount x Line 9 Months))/12 Months	$	625,771,369	
11	Tax Rate (Line 4)		0.7126%	
12	**Forecast Year Property Tax (Line 10 x Line 11)**	**$**	**4,459,297**	
13				

Business	Kentucky
Revision	March 14, 2013
Descripti	KY 2 Yr BP 2012-2014 SCEP

U.S. $

Business Unit	SAP WBS	Project Title	In-service Date	Prior Yrs Actuals	2012 Period 1 (actual)	2 (actual)	3 (actual)	4 (actual)	5 (actual)	6 (actual)	7 (actual)	8 (actual)	9 (actual)	10	11	12	Total 2012
IP-1232-3		**Northern Division Connection**		344,375	**18,571**	**28,980**	**76,250**	**34,001**	**29,814**	**11,190**	**(542,470)**						**(343,665)**
IP-1232-5	**I12-300003**	**Northern Division Connection**	12/28/2013								**579,160**	**33,025**	**71,731**	**3,197,620**	**286,930**	**(193,111)**	**3,975,356**
		303500-Land & Land Rights-T&D			279	435	1,144	510	447	168	550	495	1,076	47,964	4,304	(2,897)	54,475
		331001-T&D Mains			12,721	19,851	52,231	23,291	20,423	7,665	25,133	22,622	49,136	2,190,370	196,547	(132,281)	2,487,708
		311540-Pumping Equipment Td			464	724	1,906	850	745	280	917	826	1,793	79,941	7,173	(4,828)	90,792
		311200-Pump Eqp Electric			371	580	1,525	680	596	224	734	661	1,435	63,952	5,739	(3,862)	72,634
		346190-Remote Control & Instrument			93	145	381	170	149	56	183	165	359	15,988	1,435	(966)	18,158
		330100-Elevated Tanks & Standpipes			4,643	7,245	19,062	8,500	7,454	2,797	9,173	8,256	17,933	799,405	71,733	(48,278)	907,923

Actuals through February 2013	$1,060,806.11
Phase 1 - Construction	$2,975,619.00
Phase 1 - Materials	$1,328,388.62
Phase 2 - Construction	$2,562,760.00
Phase 2 - Materials	$1,492,718.49
Phase 3 - Construction/Materials	$3,786,600.00
Construction Admin	$48,741.77
Contengency (2%)	$242,921.72
Capital Overhead (From SAP)	$630,478.66
AFUDC (From SAP)	$437,842.12
Total	**$14,566,876.49**

Business	Kentucky	0
Revision	March 14, 2013	
Descripti	KY 2 Yr BP 2012-2014 SCEP	

Busines s Unit	SAP WBS	Project Title	In-service Date	2013 Period 1	2	3	4	5	6	7	8	9	10	11	12	Total 2013	2014 Period 1
				2013												U.S. $	
IP-1232-3		**Northern Division Connection**														**0**	
IP-1232-5	**I12-300003**	**Northern Division Connection**	12/28/2013	**(2,933,335)**	**18,786**	**134,591**	**1,309,660**	**1,257,196**	**1,728,428**	**1,799,713**	**2,401,029**	**1,516,321**	**1,652,052**	**1,063,985**	**602,021**	**10,550,446**	**25,895**
		303500-Land & Land Rights-T&D		(44,000)	282	2,019	19,645	18,858	25,926	26,996	36,015	22,745	24,781	15,960	9,030	158,257	388
		331001-T&D Mains		(2,009,335)	12,868	92,195	897,117	861,179	1,183,973	1,232,803	1,644,705	1,038,680	1,131,656	728,830	412,384	7,227,056	17,738
		311540-Pumping Equipment Td		(73,333)	470	3,365	32,742	31,430	43,211	44,993	60,026	37,908	41,301	26,600	15,051	263,761	647
		311200-Pump Eqp Electric		(58,667)	376	2,692	26,193	25,144	34,569	35,994	48,021	30,326	33,041	21,280	12,040	211,009	518
		346190-Remote Control & Instrument		(14,667)	94	673	6,548	6,286	8,642	8,999	12,005	7,582	8,260	5,320	3,010	52,752	129
		330100-Elevated Tanks & Standpipes		(733,334)	4,697	33,648	327,415	314,299	432,107	449,928	600,257	379,080	413,013	265,996	150,505	2,637,612	6,474

Actuals through February 2013	$1,060,806.11
Phase 1 - Construction	$2,975,619.00
Phase 1 - Materials	$1,328,388.62
Phase 2 - Construction	$2,562,760.00
Phase 2 - Materials	$1,492,718.49
Phase 3 - Construction/Materials	$3,786,600.00
Construction Admin	$48,741.77
Contengency (2%)	$242,921.72
Capital Overhead (From SAP)	$630,478.66
AFUDC (From SAP)	$437,842.12
Total	**$14,566,876.49**

Business	Kentucky
Revision	March 14, 2013
Descripti	KY 2 Yr BP 2012-2014 SCEP

U.S. $

Busines s Unit	SAP WBS	Project Title	In-service Date	2014: 2	3	4	5	6	7	8	9	10	11	12	Total 2014
IP-1232-3		**Northern Division Connection**													**0**
IP-1232-5	**I12-300003**	**Northern Division Connection**	12/28/2013	**15,180**	**0**	**0**									**41,075**
		303500-Land & Land Rights-T&D		228	0	0	0	0	0	0	0	0	0	0	616
		331001-T&D Mains		10,398	0	0	0	0	0	0	0	0	0	0	28,136
		311540-Pumping Equipment Td		379	0	0	0	0	0	0	0	0	0	0	1,027
		311200-Pump Eqp Electric		304	0	0	0	0	0	0	0	0	0	0	821
		346190-Remote Control & Instrument		76	0	0	0	0	0	0	0	0	0	0	205
		330100-Elevated Tanks & Standpipes		3,795	0	0	0	0	0	0	0	0	0	0	10,269

Actuals through February 2013	$1,060,806.11
Phase 1 - Construction	$2,975,619.00
Phase 1 - Materials	$1,328,388.62
Phase 2 - Construction	$2,562,760.00
Phase 2 - Materials	$1,492,718.49
Phase 3 - Construction/Materials	$3,786,600.00
Construction Admin	$48,741.77
Contengency (2%)	$242,921.72
Capital Overhead (From SAP)	$630,478.66
AFUDC (From SAP)	$437,842.12
Total	**$14,566,876.49**

Business	Kentucky
Revision	March 14, 2013
Descripti	KY 2 Yr BP 2012-2014 SCEP

				For B-Schedule Compilation Only				
Business Unit	**SAP WBS**	**Project Title**	**In-service Date**		**Total project cost**	**% complete March 2013**	**% complete average 2014**	**Inservice Date**
IP-1232-3		**Northern Division Connection**		IP-1232-3	710	-	-	
IP-1232-5	**I12-300003**	**Northern Division Connection**	12/28/2013	**I12-300003**	14,566,876	0.34	1.00	12/28/2013
		303500-Land & Land Rights-T&D						
		331001-T&D Mains						
		311540-Pumping Equipment Td						
		311200-Pump Eqp Electric						
		346190-Remote Control & Instrument						
		330100-Elevated Tanks & Standpipes						

Actuals through February 2013	$1,060,806.11
Phase 1 - Construction	$2,975,619.00
Phase 1 - Materials	$1,328,388.62
Phase 2 - Construction	$2,562,760.00
Phase 2 - Materials	$1,492,718.49
Phase 3 - Construction/Materials	$3,786,600.00
Construction Admin	$48,741.77
Contengency (2%)	$242,921.72
Capital Overhead (From SAP)	$630,478.66
AFUDC (From SAP)	$437,842.12
Total	**$14,566,876.49**

Workpaper

Kentucky American Water Company
Case No. 2012-00520
Jurisdictional Rate Base Summary for the Base and Forecast Periods

DATA: X BASE PERIOD X FORECAST PERIOD
VERSION: X ORIGINAL _UPDATED _REVISED

Line No.	Components of Original Cost Rate Base	Supporting Schedule Reference	Base Year as of 3/31/2013	Adjustments	Forecast Year 13 Mo Avg 7/31/2013 - 7/31/2014
1	**Utility Plant:**				
2	Utility Plant in Service	Exhibit 37, Schedule B-2	$ 598,439,504	$ 29,418,358	$ 627,857,862
3	Property Held for Future Use		-	-	-
4	Utility Plant Acquisition Adjustments		-	-	-
5	Construction Work in Progress	Exhibit 37, Schedule B-4	11,962,256	(5,202,983)	6,759,272
6	**Total Utility Plant (Sum Lines 2-5)**		$ 610,401,760	$ 24,215,374	$ 634,617,134
7					
8	**Accumulated Depreciation:**				
9	Accumulated Provision for Depreciation UPIS	Exhbit 37, Schedule B-3	$ 128,073,154	$ 8,530,632	$ 136,603,786
10					
11	**Net Utility Plant (Line 6 - Line 9):**		**$ 482,328,606**	**$ 15,684,743**	**$ 498,013,349**
12					
13					
14	**Additions:**				
15	Working Capital	Exhibit 37, Schedule B-5	$ 2,700,000	$ 1,246,000	$ 3,946,000
16	Materials & Supplies	Exhibit 37, Schedule B-5	727,081	-	727,081
17	Deferred Maintenance / Tank Painting	0	3,226,606	1,417,627	4,644,233
18	Deferred Debits	0	1,583,971	(47,567)	1,536,404
19	**Total Additions (Sum Lines 15 - 18):**		$ 8,237,658	$ 2,616,060	$ 10,853,718
20					
21	**Deductions:**				
22	Deferred Income Taxes	Exhibit 37, Schedule B-6	$ 55,288,733	$ 1,723,573	$ 57,012,307
23	Deferred Investment Tax Credits	Exhibit 37, Schedule B-6	61,653	(6,377)	55,276
24	Customer Advances for Construction	Exhibit 37, Schedule B-6	13,545,381	452,462	13,997,843
25	Contributions in Aid of Construction	Exhibit 37, Schedule B-6	52,036,709	201,981	52,238,690
26	Other Rate Base Elements	0	(739,176)	89,095	(650,081)
27	**Total Deductions (Sum Lines 22 - 26):**		$ 120,193,301	$ 2,460,734	$ 122,654,035
28					
29					
30	**Original Cost Rate Base (Line 11 + Line 19 - Line 27):**		**$ 370,372,963**	**$ 15,840,069**	**$ 386,213,032**

Kentucky American Water
Case No. 2012-00520
UPIS Balances by Month, September 2012 - December 2014

Automatically calculates: Prior Month Balance + Placed in Service Activity - Removals Activity

Workpaper #: W/P - 1-1

Excel Reference: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Bal UPIS

	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13
Total Water UPIS	$ 587,304,590	$ 588,681,634	$ 590,388,802	$ 593,667,977	$ 594,700,853	$ 597,082,286	$ 598,439,504	$ 603,196,255

Line #	Utility	Account	JDE / Util Plant Account	SAP GL Account	NARUC Acct	UPIS Balance Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13
1	Water	301000-Organization	301000	10130100	301.1	$ 37,450	$ 37,450	$ 37,450	$ 37,450	$ 37,450	$ 37,450	$ 37,450	$ 37,450
2	Water	302000-Franchises	302000	10130200	302.1	$ 70,261	$ 70,261	$ 70,261	$ 70,261	$ 70,261	$ 70,261	$ 70,261	$ 70,261
3	Water	303200-Land & Land Rights-Supply	303200	10130320	303.2	$ 1,077,363	$ 1,077,363	$ 1,077,363	$ 1,077,363	$ 1,077,363	$ 1,077,363	$ 1,077,363	$ 1,077,363
4	Water	303300-Land & Land Rights-Pumping	303300	10130330	303.2	$ 195,966	$ 195,966	$ 195,966	$ 195,966	$ 195,966	$ 195,966	$ 195,966	$ 195,966
5	Water	303400-Land & Land Rights-Treatment	303400	10130340	303.3	$ 800,183	$ 800,183	$ 800,183	$ 800,183	$ 800,183	$ 800,183	$ 800,183	$ 800,183
6	Water	303500-Land & Land Rights-T&D	303500	10130350	303.4	$ 7,473,931	$ 7,473,931	$ 7,473,931	$ 7,473,931	$ 7,473,931	$ 7,473,931	$ 7,473,931	$ 7,473,931
7	Water	304100-Struct & Imp-Supply	304100	10130410	304.2	$ 6,953,802	$ 6,961,108	$ 6,960,925	$ 6,960,741	$ 6,960,558	$ 6,960,375	$ 6,960,192	$ 6,960,009
8	Water	304200-Struct & Imp-Pumping	304200	10130420	304.2	$ 9,642,371	$ 9,639,906	$ 9,637,440	$ 9,634,975	$ 9,632,510	$ 9,630,044	$ 9,627,579	$ 9,625,113
9	Water	304300-Struct & Imp-Treatment	304300	10130430	304.3	$ 25,719,554	$ 25,715,126	$ 25,710,699	$ 25,830,774	$ 25,932,850	$ 26,027,619	$ 26,023,192	$ 26,018,765
10	Water	304400-Struct & Imp-T&D	304400	10130440	304.4	$ 915,117	$ 915,117	$ 915,117	$ 915,117	$ 915,117	$ 915,117	$ 915,117	$ 915,117
11	Water	304500-Struct & Imp-General	304500	10130450	304.5	$ 3,927,194	$ 3,943,412	$ 4,001,970	$ 4,000,022	$ 4,000,022	$ 4,000,022	$ 4,000,022	$ 4,000,022
12	Water	304600-Struct & Imp-Offices	304600	10130450	304.5	$ 5,749,699	$ 5,749,362	$ 5,749,024	$ 5,748,687	$ 5,748,349	$ 5,748,012	$ 5,747,674	$ 5,747,337
13	Water	304610-Struct & Imp-HVAC	304610	10130450	304.5	$ 10,570	$ 10,570	$ 10,570	$ 10,570	$ 10,570	$ 10,570	$ 10,570	$ 10,570
14	Water	304700-Struct & Imp-Store,Shop,Gar	304700	10130450	304.5	$ 1,789,335	$ 1,789,135	$ 1,788,934	$ 1,788,733	$ 1,788,532	$ 1,788,332	$ 1,788,131	$ 1,787,930
15	Water	304800-Struct & Imp-Misc	304800	10130450	304.5	$ 1,752,103	$ 1,747,346	$ 1,742,588	$ 1,737,831	$ 1,733,074	$ 1,728,316	$ 1,723,559	$ 1,718,802
16	Water	305000-Collect & Impound Reservoirs	305000	10130500	305.2	$ 992,394	$ 992,041	$ 991,689	$ 991,336	$ 990,984	$ 990,631	$ 990,279	$ 989,926
17	Water	306000-Lake, River & Other Intakes	306000	10130600	306.2	$ 7,162,528	$ 7,162,306	$ 7,163,579	$ 7,210,046	$ 7,249,762	$ 7,286,739	$ 7,286,518	$ 7,286,296
18	Water	309000-Supply Mains	309000	10130900	309.2	$ 27,882,438	$ 27,882,426	$ 27,882,415	$ 27,882,403	$ 27,882,392	$ 27,882,380	$ 27,882,369	$ 27,882,357
19	Water	310000-Power Generation Equip	310000	10131000	310.2	$ 3,392,145	$ 3,391,065	$ 3,389,986	$ 3,388,906	$ 3,387,827	$ 3,386,747	$ 3,385,668	$ 3,384,589
20	Water	311200-Pump Eqp Electric	311200	10131120	311.2	$ 9,650,869	$ 9,645,918	$ 9,655,710	$ 9,728,573	$ 9,790,186	$ 9,847,233	$ 9,842,282	$ 11,321,222
21	Water	311300-Pump Eqp Diesel	311300	10131130	311.2	$ 704,706	$ 704,324	$ 703,941	$ 703,559	$ 703,176	$ 702,794	$ 702,411	$ 702,029
22	Water	311400-Pump Eqp Hydraulic	311400	10131140	311.2	$ 7,728	$ 7,728	$ 7,728	$ 7,728	$ 7,728	$ 7,728	$ 7,728	$ 7,728
23	Water	311500-Pump Eqp Other	311500	10131150	311.2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
24	Water	311520-Pump Eqp-SOS & Pumping	311520	10131152	311.2	$ 14,815,585	$ 14,811,279	$ 14,806,973	$ 14,802,668	$ 14,798,362	$ 14,794,056	$ 14,789,750	$ 14,785,444
25	Water	311530-Pump Eqp Wtr Treatment	311530	10131153	311.3	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
26	Water	311540-Pumping Equipment TD	311540	10131154	311.4	$ 109,092	$ 107,311	$ 105,529	$ 103,748	$ 101,966	$ 100,185	$ 98,403	$ 96,622
27	Water	320100-WT Equip Non-Media	320100	10132010	320.3	$ 53,685,967	$ 53,655,809	$ 53,625,650	$ 53,626,617	$ 53,623,085	$ 53,617,725	$ 53,587,567	$ 53,557,409
28	Water	320200-WT Equip Filter Media	320200	10132010	320.3	$ 508,588	$ 508,588	$ 508,588	$ 508,588	$ 508,588	$ 508,588	$ 508,588	$ 508,588
29	Water	330000-Dist Reservoirs & Standpipes	330000	10133000	330.4	$ 1,771,358	$ 1,771,358	$ 1,771,358	$ 1,771,358	$ 1,771,358	$ 1,771,358	$ 1,771,358	$ 1,771,358
30	Water	330100-Elevated Tanks & Standpipes	330100	10133000	330.4	$ 10,230,642	$ 10,229,353	$ 10,228,063	$ 10,226,773	$ 10,225,484	$ 10,224,194	$ 10,222,904	$ 10,221,615
31	Water	330200-Ground Level Tanks	330200	10133000	330.4	$ 2,677,265	$ 2,677,265	$ 2,880,968	$ 3,421,241	$ 3,447,866	$ 3,472,665	$ 3,472,665	$ 3,472,665
32	Water	330400-Clearwell	330400	10133000	330.4	$ 2,581,757	$ 2,581,757	$ 2,581,757	$ 2,581,757	$ 2,581,757	$ 2,581,757	$ 2,581,757	$ 2,581,757
33	Water	331001-TD Mains Not Classified	331001	10133100	331.4	$ 148,900,369	$ 149,031,099	$ 149,594,100	$ 150,135,406	$ 150,784,001	$ 152,319,925	$ 152,445,040	$ 154,256,047
34	Water	331100-TD Mains 4in & Less	331100	10133100	331.4	$ 5,575,212	$ 5,575,211	$ 5,575,210	$ 5,575,209	$ 5,575,208	$ 5,575,207	$ 5,575,206	$ 5,575,205
35	Water	331200-TD Mains 6in to 8in	331200	10133100	331.4	$ 20,849,197	$ 20,849,154	$ 20,849,111	$ 20,849,068	$ 20,849,024	$ 20,848,981	$ 20,848,938	$ 20,848,895
36	Water	331300-TD Mains 10in to 16in	331300	10133100	331.4	$ 9,097,048	$ 9,097,048	$ 9,097,048	$ 9,097,048	$ 9,097,048	$ 9,097,048	$ 9,097,048	$ 9,097,048
37	Water	331400-TD Mains 18in & Grtr	331400	10133100	331.4	$ 72,803,762	$ 72,803,731	$ 72,803,699	$ 72,803,667	$ 72,803,636	$ 72,803,604	$ 72,803,572	$ 72,803,541
38	Water	333000-Services	333000	10133300	333.4	$ 47,271,866	$ 47,451,886	$ 47,667,314	$ 47,854,746	$ 47,992,308	$ 48,173,755	$ 48,339,231	$ 48,582,274
39	Water	334100-Meters	334100	10133410	334.4	$ 11,080,862	$ 11,838,857	$ 12,414,091	$ 14,055,838	$ 14,077,894	$ 14,413,459	$ 14,508,727	$ 15,095,438
40	Water	334110-Meters Bronze Case	334110	10133410	334.4	$ 2,275,603	$ 2,275,309	$ 2,275,015	$ 2,274,722	$ 2,274,428	$ 2,274,135	$ 2,273,841	$ 2,273,548
41	Water	334120-Meters Plastic Case	334120	10133410	334.4	$ 448,304	$ 435,466	$ 422,627	$ 409,789	$ 396,951	$ 384,113	$ 371,274	$ 358,436
42	Water	334130-Meters Other	334130	10133410	334.4	$ 6,522,761	$ 6,495,217	$ 6,467,672	$ 6,440,127	$ 6,412,583	$ 6,385,038	$ 6,357,493	$ 6,329,949
43	Water	334131-Meter Reading Units	334131	10133410	334.4	$ 314,141	$ 314,141	$ 314,141	$ 314,141	$ 314,141	$ 314,141	$ 314,141	$ 314,141
44	Water	334200-Meter Installations	334200	10133420	334.4	$ 18,416,593	$ 18,416,653	$ 18,450,078	$ 18,449,491	$ 18,448,904	$ 18,448,316	$ 18,447,729	$ 18,447,142
45	Water	334300-Meter Vaults	334300	10133410	334.4	$ 504,160	$ 504,126	$ 504,092	$ 504,058	$ 504,025	$ 503,991	$ 503,957	$ 503,924
46	Water	335000-Hydrants	335000	10133500	335.4	$ 13,641,556	$ 13,675,049	$ 13,732,342	$ 13,776,127	$ 13,831,156	$ 13,919,833	$ 13,954,412	$ 14,030,381
47	Water	339100-Other P/E-Intangible	339100	10133910	339.1	$ 8,375	$ 8,375	$ 8,375	$ 8,375	$ 8,375	$ 8,375	$ 8,375	$ 8,375
48	Water	339600-Other P/E-CPS	339600	10133910	339.1	$ 306,385	$ 306,385	$ 306,385	$ 306,385	$ 306,385	$ 306,385	$ 706,661	$ 723,136

Kentucky American Water
Case No. 2012-00520
UPIS Balances by Month, September 2012 - December 2014

Automatically calculates: Prior Month Balance + Placed in Service Activity - Removals Activity

Workpaper #: W/P - 1-1

Excel Reference: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Bal UPIS

						Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13
					Total Water UPIS	$ 587,304,590	$ 588,681,634	$ 590,388,802	$ 593,667,977	$ 594,700,853	$ 597,082,286	$ 598,439,504	$ 603,196,255

Line #	Utility	Account	JDE / Util Plant Account	SAP GL Account	NARUC Acct	UPIS Balance Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13
49	Water	340100-Office Furniture & Equip	340100	10134010	340.5	$ 677,909	$ 806,408	$ 803,840	$ 801,272	$ 798,704	$ 796,137	$ 793,569	$ 791,001
50	Water	340210-Comp & Periph Mainframe	340210	10134010	340.5	$ 88,984	$ 88,546	$ 88,108	$ 87,670	$ 87,232	$ 86,794	$ 86,355	$ 85,917
51	Water	340220-Comp & Periph Personal	340220	10134010	340.5	$ 977,328	$ 969,234	$ 961,140	$ 953,046	$ 944,952	$ 936,858	$ 928,764	$ 920,670
52	Water	340230-Comp & Periph Other	340230	10134010	340.5	$ 751,175	$ 750,255	$ 749,335	$ 748,415	$ 747,495	$ 746,575	$ 745,655	$ 744,735
53	Water	340240-Comp & Periph Capital Lease	340240	10134010	340.5	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
54	Water	340300-Computer Software	340300	10134010	340.5	$ 3,805,919	$ 3,799,581	$ 3,785,349	$ 3,771,117	$ 3,756,885	$ 3,742,653	$ 3,728,421	$ 3,714,189
55	Water	340320-Comp Software Personal	340320	10134010	340.5	$ 3,481	$ 3,481	$ 3,481	$ 3,481	$ 3,481	$ 3,481	$ 3,481	$ 3,481
56	Water	340325-Comp Software Customized	340325	10134010	340.5	$ 700,218	$ 700,218	$ 700,218	$ 700,218	$ 700,218	$ 700,218	$ 700,218	$ 700,218
57	Water	340330-Comp Software Other	340330	10134010	340.5	$ 765,081	$ 765,081	$ 765,081	$ 765,081	$ 765,081	$ 765,081	$ 765,081	$ 765,081
58	Water	340500-Other Office Equipment	340500	10134010	340.5	$ 73,838	$ 73,329	$ 72,819	$ 72,310	$ 71,800	$ 71,291	$ 70,781	$ 70,272
59	Water	341100-Trans Equip Lt Duty Trks	341100	10134100	341.5	$ 2,119,633	$ 2,128,472	$ 2,113,261	$ 2,111,250	$ 2,085,919	$ 2,060,587	$ 2,035,255	$ 2,009,923
60	Water	341200-Trans Equip Hvy Duty Trks	341200	10134100	341.5	$ 1,737,108	$ 1,765,796	$ 1,770,228	$ 1,787,861	$ 1,782,172	$ 1,776,484	$ 1,770,795	$ 1,765,107
61	Water	341300-Trans Equip Autos	341300	10134100	341.5	$ 127,965	$ 160,216	$ 167,637	$ 188,659	$ 185,653	$ 182,648	$ 179,642	$ 176,636
62	Water	341400-Trans Equip Other	341400	10134100	341.5	$ 602,305	$ 601,000	$ 599,695	$ 598,391	$ 597,086	$ 595,781	$ 594,476	$ 593,172
63	Water	342000-Stores Equipment	342000	10134200	342.5	$ 38,109	$ 38,070	$ 38,032	$ 37,994	$ 37,955	$ 37,917	$ 37,878	$ 37,840
64	Water	343000-Tools,Shop,Garage Equip	343000	10134300	343.5	$ 2,145,935	$ 2,151,192	$ 2,209,909	$ 2,298,625	$ 2,298,213	$ 2,308,306	$ 2,321,550	$ 2,368,411
65	Water	344000-Laboratory Equipment	344000	10134400	344.5	$ 1,300,396	$ 1,297,752	$ 1,302,266	$ 1,299,622	$ 1,296,978	$ 1,294,334	$ 1,291,690	$ 1,289,046
66	Water	345000-Power Operated Equipment	345000	10134500	345.5	$ 1,465,286	$ 1,463,795	$ 1,462,305	$ 1,460,814	$ 1,459,324	$ 1,457,833	$ 1,456,342	$ 1,454,852
67	Water	346100-Comm Equip Non-Telephone	346100	10134600	346.5	$ 1,783,664	$ 1,872,626	$ 1,868,119	$ 1,863,613	$ 1,859,107	$ 1,854,601	$ 1,850,095	$ 1,845,588
68	Water	346190-Remote Control & Instrument	346190	10134600	346.5	$ 1,528,986	$ 1,528,986	$ 1,528,986	$ 1,528,986	$ 1,528,986	$ 1,528,986	$ 1,988,712	$ 2,230,246
69	Water	346200-Comm Equip Telephone	346200	10134600	346.5	$ 283,749	$ 283,749	$ 283,749	$ 283,749	$ 283,749	$ 283,749	$ 283,749	$ 283,749
70	Water	347000-Misc Equipment	347000	10134700	347.5	$ 1,283,663	$ 1,295,171	$ 1,294,347	$ 1,293,524	$ 1,292,700	$ 1,291,876	$ 1,291,052	$ 1,497,404
71	Water	348000-Other Tangible Property	348000	10134800	348.5	$ 138,485	$ 138,485	$ 138,485	$ 138,485	$ 138,485	$ 138,485	$ 366,304	$ 369,211
72	Water	354200-WW Struct & Imp Collection	354200	10135420	354.2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
73	Water	340315-Comp Software Specia	340315	10134010	C3405	$ 4,601,216	$ 4,667,721	$ 4,724,754	$ 4,781,691	$ 4,855,356	$ 5,006,966	$ 5,012,553	$ 5,018,141
74	Water	339300-Other P/E-Treatment	339300	10133930	C3393								$ 205,464
					Water	**$ 587,304,590**	**$ 588,681,634**	**$ 590,388,802**	**$ 593,667,977**	**$ 594,700,853**	**$ 597,082,286**	**$ 598,439,504**	**$ 603,196,255**

Kentucky American Water
Case No. 2012-00520
UPIS Balances by Month, September 2012 - December 2014

Automatically calculates: Prior Month Balance + Placed in Service Activity - Removals Activity

Workpaper #: W/P - 1-1

Excel Reference: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Bal UPIS

	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13
Total Water UPIS	$ 610,353,372	$ 612,208,698	$ 613,654,441	$ 614,895,916	$ 616,311,144	$ 617,359,286	$ 618,454,497	$ 633,761,524

Line #	Utility	Account	JDE / Util Plant Account	SAP GL Account	NARUC Acct	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13
1	Water	301000-Organization	301000	10130100	301.1	$ 37,450	$ 37,450	$ 37,450	$ 37,450	$ 37,450	$ 37,450	$ 37,450	$ 37,450
2	Water	302000-Franchises	302000	10130200	302.1	$ 70,261	$ 70,261	$ 70,261	$ 70,261	$ 70,261	$ 70,261	$ 70,261	$ 70,261
3	Water	303200-Land & Land Rights-Supply	303200	10130320	303.2	$ 1,077,363	$ 1,077,363	$ 1,077,363	$ 1,077,363	$ 1,077,363	$ 1,077,363	$ 1,077,363	$ 1,077,363
4	Water	303300-Land & Land Rights-Pumping	303300	10130330	303.2	$ 195,966	$ 195,966	$ 195,966	$ 195,966	$ 195,966	$ 195,966	$ 195,966	$ 195,966
5	Water	303400-Land & Land Rights-Treatment	303400	10130340	303.3	$ 800,183	$ 800,183	$ 800,183	$ 800,183	$ 800,183	$ 800,183	$ 800,183	$ 800,183
6	Water	303500-Land & Land Rights-T&D	303500	10130350	303.4	$ 7,473,931	$ 7,473,931	$ 7,473,931	$ 7,473,931	$ 7,473,931	$ 7,473,931	$ 7,473,931	$ 7,836,349
7	Water	304100-Struct & Imp-Supply	304100	10130410	304.2	$ 6,959,826	$ 6,959,643	$ 6,959,460	$ 6,959,276	$ 6,959,093	$ 6,958,910	$ 6,958,727	$ 6,958,544
8	Water	304200-Struct & Imp-Pumping	304200	10130420	304.2	$ 9,622,648	$ 9,620,182	$ 9,617,717	$ 9,615,252	$ 9,612,786	$ 9,610,321	$ 9,607,855	$ 9,605,390
9	Water	304300-Struct & Imp-Treatment	304300	10130430	304.3	$ 26,030,936	$ 26,103,207	$ 26,119,789	$ 26,220,074	$ 26,289,182	$ 26,334,839	$ 26,418,310	$ 26,485,721
10	Water	304400-Struct & Imp-T&D	304400	10130440	304.4	$ 915,117	$ 915,117	$ 915,117	$ 915,117	$ 915,117	$ 915,117	$ 915,117	$ 915,117
11	Water	304500-Struct & Imp-General	304500	10130450	304.5	$ 4,021,032	$ 4,042,042	$ 4,089,315	$ 4,115,578	$ 4,168,103	$ 4,241,638	$ 4,288,911	$ 4,315,172
12	Water	304600-Struct & Imp-Offices	304600	10130450	304.5	$ 5,746,999	$ 5,746,662	$ 5,746,324	$ 5,745,987	$ 5,745,649	$ 5,745,312	$ 5,744,974	$ 5,744,637
13	Water	304610-Struct & Imp-HVAC	304610	10130450	304.5	$ 10,570	$ 10,570	$ 10,570	$ 10,570	$ 10,570	$ 10,570	$ 10,570	$ 10,570
14	Water	304700-Struct & Imp-Store,Shop,Gar	304700	10130450	304.5	$ 1,787,729	$ 1,787,529	$ 1,787,328	$ 1,787,127	$ 1,786,926	$ 1,786,726	$ 1,786,525	$ 1,786,324
15	Water	304800-Struct & Imp-Misc	304800	10130450	304.5	$ 1,714,044	$ 1,709,287	$ 1,704,530	$ 1,699,772	$ 1,695,015	$ 1,690,257	$ 1,685,500	$ 1,680,743
16	Water	305000-Collect & Impound Reservoirs	305000	10130500	305.2	$ 989,574	$ 989,221	$ 988,869	$ 988,516	$ 988,163	$ 987,811	$ 987,458	$ 987,106
17	Water	306000-Lake, River & Other Intakes	306000	10130600	306.2	$ 7,292,299	$ 7,320,839	$ 7,328,496	$ 7,367,541	$ 7,394,896	$ 7,413,456	$ 7,446,196	$ 7,472,914
18	Water	309000-Supply Mains	309000	10130900	309.2	$ 27,882,346	$ 27,882,334	$ 27,882,323	$ 27,882,311	$ 27,882,300	$ 27,882,288	$ 27,882,277	$ 27,882,266
19	Water	310000-Power Generation Equip	310000	10131000	310.2	$ 3,383,509	$ 3,382,430	$ 3,381,350	$ 3,380,271	$ 3,379,191	$ 3,378,112	$ 3,377,032	$ 3,375,953
20	Water	311200-Pump Eqp Electric	311200	10131120	311.2	$ 11,361,644	$ 11,492,130	$ 11,587,810	$ 11,665,803	$ 11,706,812	$ 11,733,164	$ 11,783,149	$ 12,099,935
21	Water	311300-Pump Eqp Diesel	311300	10131130	311.2	$ 701,646	$ 701,264	$ 700,881	$ 700,499	$ 700,117	$ 699,734	$ 699,352	$ 698,969
22	Water	311400-Pump Eqp Hydraulic	311400	10131140	311.2	$ 7,728	$ 7,728	$ 7,728	$ 7,728	$ 7,728	$ 7,728	$ 7,728	$ 7,728
23	Water	311500-Pump Eqp Other	311500	10131150	311.2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
24	Water	311520-Pump Eqp-SOS & Pumping	311520	10131152	311.2	$ 14,781,138	$ 14,776,832	$ 14,772,526	$ 14,768,221	$ 14,763,915	$ 14,759,609	$ 14,755,303	$ 14,750,997
25	Water	311530-Pump Eqp Wtr Treatment	311530	10131153	311.3	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
26	Water	311540-Pumping Equipment TD	311540	10131154	311.4	$ 94,840	$ 93,059	$ 91,277	$ 89,496	$ 87,714	$ 85,933	$ 84,151	$ 428,417
27	Water	320100-WT Equip Non-Media	320100	10132010	320.3	$ 53,531,400	$ 53,520,416	$ 53,495,510	$ 53,491,530	$ 53,479,755	$ 53,462,118	$ 53,453,934	$ 53,441,735
28	Water	320200-WT Equip Filter Media	320200	10132010	320.3	$ 508,588	$ 508,588	$ 508,588	$ 508,588	$ 508,588	$ 508,588	$ 508,588	$ 508,588
29	Water	330000-Dist Reservoirs & Standpipes	330000	10133000	330.4	$ 1,771,358	$ 1,771,358	$ 1,771,358	$ 1,771,358	$ 1,771,358	$ 1,771,358	$ 1,771,358	$ 1,771,358
30	Water	330100-Elevated Tanks & Standpipes	330100	10133000	330.4	$ 10,220,325	$ 10,219,035	$ 10,217,746	$ 10,216,456	$ 10,215,166	$ 10,213,877	$ 10,212,587	$ 13,671,769
31	Water	330200-Ground Level Tanks	330200	10133000	330.4	$ 3,476,815	$ 3,495,989	$ 3,501,242	$ 3,527,420	$ 3,545,804	$ 3,558,325	$ 3,580,299	$ 3,598,259
32	Water	330400-Clearwell	330400	10133000	330.4	$ 2,581,757	$ 2,581,757	$ 2,581,757	$ 2,581,757	$ 2,581,757	$ 2,581,757	$ 2,581,757	$ 2,581,757
33	Water	331001-TD Mains Not Classified	331001	10133100	331.4	$ 154,527,297	$ 154,807,254	$ 155,179,162	$ 155,659,789	$ 156,213,133	$ 156,800,509	$ 157,340,612	$ 167,820,633
34	Water	331100-TD Mains 4in & Less	331100	10133100	331.4	$ 5,575,204	$ 5,575,203	$ 5,575,202	$ 5,575,201	$ 5,575,200	$ 5,575,199	$ 5,575,198	$ 5,575,197
35	Water	331200-TD Mains 6in to 8in	331200	10133100	331.4	$ 20,848,852	$ 20,848,809	$ 20,848,765	$ 20,848,722	$ 20,848,679	$ 20,848,636	$ 20,848,593	$ 20,848,550
36	Water	331300-TD Mains 10in to 16in	331300	10133100	331.4	$ 9,097,048	$ 9,097,048	$ 9,097,048	$ 9,097,048	$ 9,097,048	$ 9,097,048	$ 9,097,048	$ 9,097,048
37	Water	331400-TD Mains 18in & Grtr	331400	10133100	331.4	$ 72,803,509	$ 72,803,478	$ 72,803,446	$ 72,803,414	$ 72,803,383	$ 72,803,351	$ 72,803,319	$ 72,803,288
38	Water	333000-Services	333000	10133300	333.4	$ 48,769,881	$ 48,956,300	$ 49,148,100	$ 49,344,134	$ 49,514,153	$ 49,682,620	$ 49,816,831	$ 49,953,531
39	Water	334100-Meters	334100	10133410	334.4	$ 15,773,036	$ 16,323,936	$ 16,624,961	$ 16,749,717	$ 16,864,252	$ 16,910,342	$ 16,951,810	$ 16,976,149
40	Water	334110-Meters Bronze Case	334110	10133410	334.4	$ 2,273,254	$ 2,272,960	$ 2,272,667	$ 2,272,373	$ 2,272,080	$ 2,271,786	$ 2,271,492	$ 2,271,199
41	Water	334120-Meters Plastic Case	334120	10133410	334.4	$ 345,598	$ 332,759	$ 319,921	$ 307,083	$ 294,245	$ 281,406	$ 268,568	$ 255,730
42	Water	334130-Meters Other	334130	10133410	334.4	$ 6,302,404	$ 6,274,859	$ 6,247,315	$ 6,219,770	$ 6,192,225	$ 6,164,681	$ 6,137,136	$ 6,109,591
43	Water	334131-Meter Reading Units	334131	10133410	334.4	$ 314,141	$ 314,141	$ 314,141	$ 314,141	$ 314,141	$ 314,141	$ 314,141	$ 314,141
44	Water	334200-Meter Installations	334200	10133420	334.4	$ 18,446,555	$ 18,445,967	$ 18,445,380	$ 18,444,793	$ 18,444,206	$ 18,443,618	$ 18,443,031	$ 18,442,444
45	Water	334300-Meter Vaults	334300	10133410	334.4	$ 503,890	$ 503,856	$ 503,823	$ 503,789	$ 503,755	$ 503,722	$ 503,688	$ 503,654
46	Water	335000-Hydrants	335000	10133500	335.4	$ 14,078,023	$ 14,129,743	$ 14,192,117	$ 14,260,723	$ 14,332,522	$ 14,425,800	$ 14,480,577	$ 14,531,717
47	Water	339100-Other P/E-Intangible	339100	10133910	339.1	$ 8,375	$ 8,375	$ 8,375	$ 8,375	$ 8,375	$ 8,375	$ 8,375	$ 8,375
48	Water	339600-Other P/E-CPS	339600	10133910	339.1	$ 739,610	$ 756,084	$ 756,084	$ 756,084	$ 756,084	$ 756,084	$ 756,084	$ 756,084

Kentucky American Water
Case No. 2012-00520
UPIS Balances by Month, September 2012 - December 2014

Automatically calculates: Prior Month Balance + Placed in Service Activity - Removals Activity

Workpaper #: W/P - 1-1

Excel Reference: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Bal UPIS

	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13
Total Water UPIS	**$ 610,353,372**	**$ 612,208,698**	**$ 613,654,441**	**$ 614,895,916**	**$ 616,311,144**	**$ 617,359,286**	**$ 618,454,497**	**$ 633,761,524**

Line #	Utility	Account	JDE / Util Plant Account	SAP GL Account	NARUC Acct	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13
49	Water	340100-Office Furniture & Equip	340100	10134010	340.5	$ 788,433	$ 785,866	$ 783,298	$ 780,730	$ 778,162	$ 775,595	$ 773,027	$ 770,459
50	Water	340210-Comp & Periph Mainframe	340210	10134010	340.5	$ 85,479	$ 85,041	$ 84,603	$ 84,165	$ 83,726	$ 83,288	$ 82,850	$ 82,412
51	Water	340220-Comp & Periph Personal	340220	10134010	340.5	$ 912,576	$ 904,482	$ 896,388	$ 888,294	$ 880,200	$ 872,106	$ 864,012	$ 855,918
52	Water	340230-Comp & Periph Other	340230	10134010	340.5	$ 743,815	$ 742,895	$ 741,975	$ 741,055	$ 740,135	$ 739,215	$ 738,295	$ 737,375
53	Water	340240-Comp & Periph Capital Lease	340240	10134010	340.5	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
54	Water	340300-Computer Software	340300	10134010	340.5	$ 3,699,957	$ 3,685,725	$ 3,671,492	$ 3,657,260	$ 3,643,028	$ 3,628,796	$ 3,614,564	$ 3,600,332
55	Water	340320-Comp Software Personal	340320	10134010	340.5	$ 3,481	$ 3,481	$ 3,481	$ 3,481	$ 3,481	$ 3,481	$ 3,481	$ 3,481
56	Water	340325-Comp Software Customized	340325	10134010	340.5	$ 700,218	$ 700,218	$ 700,218	$ 700,218	$ 700,218	$ 700,218	$ 700,218	$ 700,218
57	Water	340330-Comp Software Other	340330	10134010	340.5	$ 765,081	$ 765,081	$ 765,081	$ 765,081	$ 765,081	$ 765,081	$ 765,081	$ 765,081
58	Water	340500-Other Office Equipment	340500	10134010	340.5	$ 69,762	$ 69,253	$ 68,743	$ 68,234	$ 67,724	$ 67,215	$ 66,705	$ 66,196
59	Water	341100-Trans Equip Lt Duty Trks	341100	10134100	341.5	$ 2,001,924	$ 1,976,592	$ 2,060,460	$ 2,035,128	$ 2,009,796	$ 1,984,464	$ 2,011,132	$ 1,985,800
60	Water	341200-Trans Equip Hvy Duty Trks	341200	10134100	341.5	$ 1,776,751	$ 1,771,063	$ 1,874,574	$ 1,868,885	$ 1,863,197	$ 1,857,508	$ 1,903,820	$ 1,898,131
61	Water	341300-Trans Equip Autos	341300	10134100	341.5	$ 191,488	$ 188,483	$ 297,985	$ 294,980	$ 291,974	$ 288,968	$ 339,537	$ 336,532
62	Water	341400-Trans Equip Other	341400	10134100	341.5	$ 591,867	$ 590,562	$ 589,257	$ 587,953	$ 586,648	$ 585,343	$ 584,038	$ 582,733
63	Water	342000-Stores Equipment	342000	10134200	342.5	$ 37,802	$ 37,763	$ 37,725	$ 37,686	$ 37,648	$ 37,610	$ 37,571	$ 37,533
64	Water	343000-Tools,Shop,Garage Equip	343000	10134300	343.5	$ 2,483,555	$ 2,493,648	$ 2,498,489	$ 2,603,125	$ 2,602,713	$ 2,602,301	$ 2,601,889	$ 2,601,477
65	Water	344000-Laboratory Equipment	344000	10134400	344.5	$ 1,286,402	$ 1,283,758	$ 1,281,114	$ 1,278,470	$ 1,275,826	$ 1,273,182	$ 1,270,538	$ 1,267,894
66	Water	345000-Power Operated Equipment	345000	10134500	345.5	$ 1,453,361	$ 1,451,871	$ 1,450,380	$ 1,448,890	$ 1,447,399	$ 1,445,908	$ 1,444,418	$ 1,442,927
67	Water	346100-Comm Equip Non-Telephone	346100	10134600	346.5	$ 1,841,082	$ 1,836,576	$ 1,832,070	$ 1,827,564	$ 1,823,058	$ 1,818,551	$ 1,814,045	$ 1,809,539
68	Water	346190-Remote Control & Instrument	346190	10134600	346.5	$ 2,317,899	$ 2,809,727	$ 2,822,227	$ 2,824,727	$ 3,146,385	$ 3,156,890	$ 3,161,617	$ 3,230,827
69	Water	346200-Comm Equip Telephone	346200	10134600	346.5	$ 283,749	$ 283,749	$ 283,749	$ 283,749	$ 283,749	$ 283,749	$ 283,749	$ 283,749
70	Water	347000-Misc Equipment	347000	10134700	347.5	$ 1,501,581	$ 1,513,257	$ 1,524,933	$ 1,526,609	$ 1,525,786	$ 1,524,962	$ 1,524,138	$ 1,523,315
71	Water	348000-Other Tangible Property	348000	10134800	348.5	$ 372,118	$ 375,026	$ 375,026	$ 375,026	$ 375,026	$ 375,026	$ 375,026	$ 375,026
72	Water	354200-WW Struct & Imp Collection	354200	10135420	354.2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
73	Water	340315-Comp Software Specia	340315	10134010	C3405	$ 10,778,826	$ 10,888,473	$ 11,016,436	$ 11,140,084	$ 11,257,880	$ 11,371,845	$ 11,437,463	$ 11,501,736
74	Water	339300-Other P/E-Treatment	339300	10133930	C3393	$ 210,464	$ 222,964	$ 235,464	$ 237,964	$ 237,964	$ 237,964	$ 237,964	$ 237,964
					Water	**$ 610,353,372**	**$ 612,208,698**	**$ 613,654,441**	**$ 614,895,916**	**$ 616,311,144**	**$ 617,359,286**	**$ 618,454,497**	**$ 633,761,524**

Kentucky American Water
Case No. 2012-00520
UPIS Balances by Month, September 2012 - December 2014 | **Oct-Dec 2012**

Automatically calculates: Prior Month Balance + Placed in Service Activity - Removals Activity

Workpaper #: W/P - 1-1

Excel Reference: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Bal UPIS

	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Additions
Total Water UPIS	$ 634,318,618	$ 635,310,704	$ 636,003,943	$ 633,531,805	$ 634,814,907	$ 636,051,986	$ 637,683,436	$ 6,363,387

Line #	Utility	Account	JDE / Util Plant Account	SAP GL Account	NARUC Acct	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Oct-Dec 2012
1	Water	301000-Organization	301000	10130100	301.1	$ 37,450	$ 37,450	$ 37,450	$ 37,450	$ 37,450	$ 37,450	$ 37,450	$ -
2	Water	302000-Franchises	302000	10130200	302.1	$ 70,261	$ 70,261	$ 70,261	$ 70,261	$ 70,261	$ 70,261	$ 70,261	$ -
3	Water	303200-Land & Land Rights-Supply	303200	10130320	303.2	$ 1,077,363	$ 1,077,363	$ 1,077,363	$ 1,077,363	$ 1,077,363	$ 1,077,363	$ 1,077,363	$ -
4	Water	303300-Land & Land Rights-Pumping	303300	10130330	303.2	$ 195,966	$ 195,966	$ 195,966	$ 195,966	$ 195,966	$ 195,966	$ 195,966	$ -
5	Water	303400-Land & Land Rights-Treatment	303400	10130340	303.3	$ 800,183	$ 800,183	$ 800,183	$ 800,183	$ 800,183	$ 800,183	$ 800,183	$ -
6	Water	303500-Land & Land Rights-T&D	303500	10130350	303.4	$ 7,836,738	$ 7,836,965	$ 7,836,965	$ 7,825,772	$ 7,825,772	$ 7,825,772	$ 7,825,772	$ -
7	Water	304100-Struct & Imp-Supply	304100	10130410	304.2	$ 6,958,361	$ 6,958,178	$ 6,957,994	$ 6,957,811	$ 6,957,628	$ 6,957,445	$ 6,957,262	$ 6,939
8	Water	304200-Struct & Imp-Pumping	304200	10130420	304.2	$ 9,602,924	$ 9,600,459	$ 9,597,994	$ 9,595,528	$ 9,593,063	$ 9,590,597	$ 9,588,132	$ (7,396)
9	Water	304300-Struct & Imp-Treatment	304300	10130430	304.3	$ 26,489,697	$ 26,485,270	$ 26,480,843	$ 26,476,416	$ 26,486,696	$ 26,549,501	$ 26,605,774	$ 111,221
10	Water	304400-Struct & Imp-T&D	304400	10130440	304.4	$ 915,117	$ 915,117	$ 915,117	$ 895,487	$ 895,487	$ 895,487	$ 895,487	$ -
11	Water	304500-Struct & Imp-General	304500	10130450	304.5	$ 4,315,172	$ 4,315,172	$ 4,315,172	$ 4,315,172	$ 4,336,182	$ 4,346,687	$ 4,378,202	$ 72,828
12	Water	304600-Struct & Imp-Offices	304600	10130450	304.5	$ 5,744,299	$ 5,743,962	$ 5,743,624	$ 5,743,287	$ 5,742,949	$ 5,742,612	$ 5,742,275	$ (1,012)
13	Water	304610-Struct & Imp-HVAC	304610	10130450	304.5	$ 10,570	$ 10,570	$ 10,570	$ 10,570	$ 10,570	$ 10,570	$ 10,570	$ -
14	Water	304700-Struct & Imp-Store,Shop,Gar	304700	10130450	304.5	$ 1,786,124	$ 1,785,923	$ 1,785,722	$ 1,785,521	$ 1,785,321	$ 1,785,120	$ 1,784,919	$ (602)
15	Water	304800-Struct & Imp-Misc	304800	10130450	304.5	$ 1,675,985	$ 1,671,228	$ 1,666,471	$ 1,585,680	$ 1,580,923	$ 1,576,165	$ 1,571,408	$ (14,272)
16	Water	305000-Collect & Impound Reservoirs	305000	10130500	305.2	$ 986,753	$ 986,401	$ 986,048	$ 985,696	$ 985,343	$ 984,990	$ 984,638	$ (1,058)
17	Water	306000-Lake, River & Other Intakes	306000	10130600	306.2	$ 7,475,843	$ 7,475,622	$ 7,475,400	$ 7,475,179	$ 7,480,472	$ 7,505,463	$ 7,528,004	$ 47,518
18	Water	309000-Supply Mains	309000	10130900	309.2	$ 27,882,254	$ 27,882,243	$ 27,882,231	$ 27,882,220	$ 27,882,208	$ 27,882,197	$ 27,882,185	$ (34)
19	Water	310000-Power Generation Equip	310000	10131000	310.2	$ 3,374,873	$ 3,373,794	$ 3,372,714	$ 3,371,635	$ 3,370,555	$ 3,369,476	$ 3,368,396	$ (3,238)
20	Water	311200-Pump Eqp Electric	311200	10131120	311.2	$ 12,100,754	$ 12,096,106	$ 12,091,155	$ 12,086,204	$ 12,090,445	$ 12,127,514	$ 12,160,501	$ 77,704
21	Water	311300-Pump Eqp Diesel	311300	10131130	311.2	$ 698,587	$ 698,204	$ 697,822	$ 697,439	$ 697,057	$ 696,674	$ 696,292	$ (1,147)
22	Water	311400-Pump Eqp Hydraulic	311400	10131140	311.2	$ 7,728	$ 7,728	$ 7,728	$ 7,728	$ 7,728	$ 7,728	$ 7,728	$ -
23	Water	311500-Pump Eqp Other	311500	10131150	311.2	$ -	$ -	$ -	$ (4,813)	$ (4,813)	$ (4,813)	$ (4,813)	$ -
24	Water	311520-Pump Eqp-SOS & Pumping	311520	10131152	311.2	$ 14,746,691	$ 14,742,385	$ 14,738,079	$ 14,711,688	$ 14,707,382	$ 14,703,076	$ 14,698,770	$ (12,918)
25	Water	311530-Pump Eqp Wtr Treatment	311530	10131153	311.3	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
26	Water	311540-Pumping Equipment TD	311540	10131154	311.4	$ 427,283	$ 425,881	$ 424,099	$ 422,318	$ 420,536	$ 418,755	$ 416,973	$ (5,344)
27	Water	320100-WT Equip Non-Media	320100	10132010	320.3	$ 53,413,678	$ 53,383,520	$ 53,353,361	$ 50,704,057	$ 50,677,576	$ 50,664,226	$ 50,649,242	$ (59,349)
28	Water	320200-WT Equip Filter Media	320200	10132010	320.3	$ 508,588	$ 508,588	$ 508,588	$ 508,588	$ 508,588	$ 508,588	$ 508,588	$ -
29	Water	330000-Dist Reservoirs & Standpipes	330000	10133000	330.4	$ 1,771,358	$ 1,771,358	$ 1,771,358	$ 1,771,358	$ 1,771,358	$ 1,771,358	$ 1,771,358	$ -
30	Water	330100-Elevated Tanks & Standpipes	330100	10133000	330.4	$ 13,676,953	$ 13,679,458	$ 13,678,169	$ 13,100,352	$ 13,099,063	$ 13,097,773	$ 13,096,483	$ (3,869)
31	Water	330200-Ground Level Tanks	330200	10133000	330.4	$ 3,600,360	$ 3,600,360	$ 3,600,360	$ 3,600,360	$ 3,604,036	$ 3,620,844	$ 3,636,019	$ 743,975
32	Water	330400-Clearwell	330400	10133000	330.4	$ 2,581,757	$ 2,581,757	$ 2,581,757	$ 2,581,757	$ 2,581,757	$ 2,581,757	$ 2,581,757	$ -
33	Water	331001-TD Mains Not Classified	331001	10133100	331.4	$ 168,260,674	$ 168,559,796	$ 168,695,952	$ 168,885,113	$ 169,141,596	$ 169,427,371	$ 169,822,906	$ 1,235,038
34	Water	331100-TD Mains 4in & Less	331100	10133100	331.4	$ 5,575,196	$ 5,575,195	$ 5,575,194	$ 5,575,193	$ 5,575,192	$ 5,575,191	$ 5,575,190	$ (3)
35	Water	331200-TD Mains 6in to 8in	331200	10133100	331.4	$ 20,848,506	$ 20,848,463	$ 20,848,420	$ 20,848,377	$ 20,848,334	$ 20,848,290	$ 20,848,247	$ (130)
36	Water	331300-TD Mains 10in to 16in	331300	10133100	331.4	$ 9,097,048	$ 9,097,048	$ 9,097,048	$ 9,097,048	$ 9,097,048	$ 9,097,048	$ 9,097,048	$ -
37	Water	331400-TD Mains 18in & Grtr	331400	10133100	331.4	$ 72,803,256	$ 72,803,224	$ 72,803,193	$ 72,803,161	$ 72,803,130	$ 72,803,098	$ 72,803,066	$ (95)
38	Water	333000-Services	333000	10133300	333.4	$ 50,082,428	$ 50,225,350	$ 50,393,358	$ 50,584,924	$ 50,790,873	$ 50,990,033	$ 51,206,855	$ 582,880
39	Water	334100-Meters	334100	10133410	334.4	$ 16,991,706	$ 17,298,377	$ 17,416,939	$ 17,905,123	$ 18,549,101	$ 19,011,831	$ 19,366,970	$ 2,974,976
40	Water	334110-Meters Bronze Case	334110	10133410	334.4	$ 2,270,905	$ 2,270,612	$ 2,270,318	$ 2,270,025	$ 2,269,731	$ 2,269,437	$ 2,269,144	$ (881)
41	Water	334120-Meters Plastic Case	334120	10133410	334.4	$ 242,892	$ 230,053	$ 217,215	$ 204,377	$ 191,538	$ 178,700	$ 165,862	$ (38,515)
42	Water	334130-Meters Other	334130	10133410	334.4	$ 6,082,047	$ 6,054,502	$ 6,026,957	$ 5,999,413	$ 5,971,868	$ 5,944,323	$ 5,916,778	$ (82,634)
43	Water	334131-Meter Reading Units	334131	10133410	334.4	$ 314,141	$ 314,141	$ 314,141	$ 314,141	$ 314,141	$ 314,141	$ 314,141	$ -
44	Water	334200-Meter Installations	334200	10133420	334.4	$ 18,441,857	$ 18,441,269	$ 18,440,682	$ 18,440,095	$ 18,439,508	$ 18,438,920	$ 18,494,897	$ 32,898
45	Water	334300-Meter Vaults	334300	10133410	334.4	$ 503,621	$ 503,587	$ 503,553	$ 503,519	$ 503,486	$ 503,452	$ 593,920	$ (101)
46	Water	335000-Hydrants	335000	10133500	335.4	$ 14,580,341	$ 14,619,201	$ 14,660,596	$ 14,700,624	$ 14,747,091	$ 14,799,260	$ 14,864,060	$ 134,570
47	Water	339100-Other P/E-Intangible	339100	10133910	339.1	$ 8,375	$ 8,375	$ 8,375	$ 8,375	$ 8,375	$ 8,375	$ 8,375	$ -
48	Water	339600-Other P/E-CPS	339600	10133910	339.1	$ 756,084	$ 765,013	$ 773,942	$ 782,871	$ 791,801	$ 791,801	$ 791,801	$ -

Kentucky American Water
Case No. 2012-00520
UPIS Balances by Month, September 2012 - December 2014 — **Oct-Dec 2012**

Automatically calculates: Prior Month Balance + Placed in Service Activity - Removals Activity

Workpaper #: W/P - 1-1

Excel Reference: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Bal UPIS

	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Additions
Total Water UPIS	**$ 634,318,618**	**$ 635,310,704**	**$ 636,003,943**	**$ 633,531,805**	**$ 634,814,907**	**$ 636,051,986**	**$ 637,683,436**	**$ 6,363,387**

Line #	Utility	Account	JDE / Util Plant Account	SAP GL Account	NARUC Acct	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Oct-Dec 2012
49	Water	340100-Office Furniture & Equip	340100	10134010	340.5	$ 767,891	$ 765,324	$ 762,756	$ 760,188	$ 757,620	$ 755,053	$ 752,485	$ 123,363
50	Water	340210-Comp & Periph Mainframe	340210	10134010	340.5	$ 81,974	$ 81,536	$ 81,098	$ 80,659	$ 80,221	$ 79,783	$ 79,345	$ (1,314)
51	Water	340220-Comp & Periph Personal	340220	10134010	340.5	$ 847,824	$ 839,730	$ 831,636	$ 823,542	$ 815,449	$ 807,355	$ 799,261	$ (24,282)
52	Water	340230-Comp & Periph Other	340230	10134010	340.5	$ 736,455	$ 735,535	$ 734,615	$ 733,695	$ 732,775	$ 731,855	$ 730,935	$ (2,760)
53	Water	340240-Comp & Periph Capital Lease	340240	10134010	340.5	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
54	Water	340300-Computer Software	340300	10134010	340.5	$ 3,586,100	$ 3,571,868	$ 3,557,636	$ 3,543,404	$ 3,529,171	$ 3,514,939	$ 3,500,707	$ (34,802)
55	Water	340320-Comp Software Personal	340320	10134010	340.5	$ 3,481	$ 3,481	$ 3,481	$ 3,481	$ 3,481	$ 3,481	$ 3,481	$ -
56	Water	340325-Comp Software Customized	340325	10134010	340.5	$ 700,218	$ 700,218	$ 700,218	$ 700,218	$ 700,218	$ 700,218	$ 700,218	$ -
57	Water	340330-Comp Software Other	340330	10134010	340.5	$ 765,081	$ 765,081	$ 765,081	$ 765,081	$ 765,081	$ 765,081	$ 765,081	$ -
58	Water	340500-Other Office Equipment	340500	10134010	340.5	$ 65,686	$ 65,177	$ 64,667	$ 64,158	$ 63,648	$ 63,139	$ 62,629	$ (1,529)
59	Water	341100-Trans Equip Lt Duty Trks	341100	10134100	341.5	$ 1,960,468	$ 1,935,136	$ 1,909,804	$ 1,884,472	$ 1,874,393	$ 1,867,088	$ 1,957,196	$ (8,383)
60	Water	341200-Trans Equip Hvy Duty Trks	341200	10134100	341.5	$ 1,892,442	$ 1,886,754	$ 1,881,065	$ 1,875,377	$ 1,884,942	$ 1,897,280	$ 2,007,031	$ 50,753
61	Water	341300-Trans Equip Autos	341300	10134100	341.5	$ 333,526	$ 330,520	$ 327,514	$ 324,508	$ 337,218	$ 352,785	$ 468,717	$ 60,694
62	Water	341400-Trans Equip Other	341400	10134100	341.5	$ 581,429	$ 580,124	$ 578,819	$ 577,514	$ 576,210	$ 574,905	$ 573,600	$ (3,914)
63	Water	342000-Stores Equipment	342000	10134200	342.5	$ 37,494	$ 37,456	$ 37,417	$ 37,379	$ 37,341	$ 37,302	$ 37,264	$ (115)
64	Water	343000-Tools,Shop,Garage Equip	343000	10134300	343.5	$ 2,601,065	$ 2,600,653	$ 2,610,746	$ 2,619,841	$ 2,698,217	$ 2,764,905	$ 2,853,785	$ 152,689
65	Water	344000-Laboratory Equipment	344000	10134400	344.5	$ 1,265,250	$ 1,262,606	$ 1,259,962	$ 1,257,318	$ 1,254,674	$ 1,252,030	$ 1,249,386	$ (775)
66	Water	345000-Power Operated Equipment	345000	10134500	345.5	$ 1,441,437	$ 1,439,946	$ 1,438,456	$ 1,435,383	$ 1,433,892	$ 1,432,402	$ 1,430,911	$ (4,472)
67	Water	346100-Comm Equip Non-Telephone	346100	10134600	346.5	$ 1,805,033	$ 1,800,527	$ 1,796,020	$ 1,791,514	$ 1,787,008	$ 1,782,502	$ 1,777,996	$ 79,949
68	Water	346190-Remote Control & Instrument	346190	10134600	346.5	$ 3,257,219	$ 3,578,953	$ 3,686,172	$ 3,793,391	$ 3,900,610	$ 4,007,830	$ 4,007,830	$ -
69	Water	346200-Comm Equip Telephone	346200	10134600	346.5	$ 283,749	$ 283,749	$ 283,749	$ 283,749	$ 283,749	$ 283,749	$ 283,749	$ -
70	Water	347000-Misc Equipment	347000	10134700	347.5	$ 1,522,491	$ 1,521,667	$ 1,520,843	$ 1,513,007	$ 1,512,183	$ 1,511,359	$ 1,510,536	$ 9,861
71	Water	348000-Other Tangible Property	348000	10134800	348.5	$ 375,026	$ 376,601	$ 378,177	$ 379,753	$ 381,329	$ 381,329	$ 381,329	$ -
72	Water	354200-WW Struct & Imp Collection	354200	10135420	354.2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
73	Water	340315-Comp Software Specia	340315	10134010	C3405	$ 11,540,569	$ 11,578,420	$ 11,849,596	$ 11,849,596	$ 11,849,596	$ 11,849,596	$ 11,849,596	$ 180,475
74	Water	339300-Other P/E-Treatment	339300	10133930	C3393	$ 237,964	$ 237,964	$ 237,964	$ 237,964	$ 237,964	$ 237,964	$ 237,964	$ -
					Water	**$ 634,318,618**	**$ 635,310,704**	**$ 636,003,943**	**$ 633,531,805**	**$ 634,814,907**	**$ 636,051,986**	**$ 637,683,436**	**$ 6,363,387**

Kentucky American Water
Case No. 2012-00520
UPIS Balances by Month, September 2012 - December 2014

Automatically calculates: Prior Month Balance + Placed in Service Activity - Removals Activity

Workpaper #: W/P - 1-1

Excel Reference: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Bal UPIS

	2013 Additions	2014 Additions	Base Period as of 31-Mar-13	Forecast 13-Month Avg Jul-13 - Jul-14
Total Water UPIS	$ 40,093,547	$ 17,719,465	$ 598,439,504	$ 627,857,862

Line #	Utility	Account	JDE / Util Plant Account	SAP GL Account	NARUC Acct	2013 Additions	2014 Additions	Base Period as of 31-Mar-13	Forecast 13-Month Average
1	Water	301000-Organization	301000	10130100	301.1	$ -	$ -	$ 37,450	$ 37,450
2	Water	302000-Franchises	302000	10130200	302.1	$ -	$ -	$ 70,261	$ 70,261
3	Water	303200-Land & Land Rights-Supply	303200	10130320	303.2	$ -	$ -	$ 1,077,363	$ 1,077,363
4	Water	303300-Land & Land Rights-Pumping	303300	10130330	303.2	$ -	$ -	$ 195,966	$ 195,966
5	Water	303400-Land & Land Rights-Treatment	303400	10130340	303.3	$ -	$ -	$ 800,183	$ 800,183
6	Water	303500-Land & Land Rights-T&D	303500	10130350	303.4	$ 362,419	$ (10,578)	$ 7,473,931	$ 7,693,827
7	Water	304100-Struct & Imp-Supply	304100	10130410	304.2	$ (2,198)	$ (2,198)	$ 6,960,192	$ 6,958,361
8	Water	304200-Struct & Imp-Pumping	304200	10130420	304.2	$ (29,585)	$ (29,585)	$ 9,627,579	$ 9,602,924
9	Water	304300-Struct & Imp-Treatment	304300	10130430	304.3	$ 654,947	$ 554,186	$ 26,023,192	$ 26,418,624
10	Water	304400-Struct & Imp-T&D	304400	10130440	304.4	$ -	$ (19,630)	$ 915,117	$ 909,077
11	Water	304500-Struct & Imp-General	304500	10130450	304.5	$ 315,150	$ 283,635	$ 4,000,022	$ 4,272,344
12	Water	304600-Struct & Imp-Offices	304600	10130450	304.5	$ (4,050)	$ (4,050)	$ 5,747,674	$ 5,744,299
13	Water	304610-Struct & Imp-HVAC	304610	10130450	304.5	$ -	$ -	$ 10,570	$ 10,570
14	Water	304700-Struct & Imp-Store,Shop,Gar	304700	10130450	304.5	$ (2,409)	$ (2,409)	$ 1,788,131	$ 1,786,124
15	Water	304800-Struct & Imp-Misc	304800	10130450	304.5	$ (57,088)	$ (133,121)	$ 1,723,559	$ 1,652,591
16	Water	305000-Collect & Impound Reservoirs	305000	10130500	305.2	$ (4,231)	$ (4,231)	$ 990,279	$ 986,753
17	Water	306000-Lake, River & Other Intakes	306000	10130600	306.2	$ 262,868	$ 189,444	$ 7,286,518	$ 7,449,191
18	Water	309000-Supply Mains	309000	10130900	309.2	$ (138)	$ (138)	$ 27,882,369	$ 27,882,254
19	Water	310000-Power Generation Equip	310000	10131000	310.2	$ (12,954)	$ (12,954)	$ 3,385,668	$ 3,374,873
20	Water	311200-Pump Eqp Electric	311200	10131120	311.2	$ 2,371,362	$ 772,162	$ 9,842,282	$ 11,948,412
21	Water	311300-Pump Eqp Diesel	311300	10131130	311.2	$ (4,590)	$ (4,590)	$ 702,411	$ 698,587
22	Water	311400-Pump Eqp Hydraulic	311400	10131140	311.2	$ -	$ -	$ 7,728	$ 7,728
23	Water	311500-Pump Eqp Other	311500	10131150	311.2	$ -	$ (4,813)	$ -	$ (1,481)
24	Water	311520-Pump Eqp-SOS & Pumping	311520	10131152	311.2	$ (51,670)	$ (73,756)	$ 14,789,750	$ 14,739,896
25	Water	311530-Pump Eqp Wtr Treatment	311530	10131153	311.3	$ -	$ -	$ -	$ -
26	Water	311540-Pumping Equipment TD	311540	10131154	311.4	$ 324,669	$ (20,351)	$ 98,403	$ 294,064
27	Water	320100-WT Equip Non-Media	320100	10132010	320.3	$ (184,882)	$ (2,662,902)	$ 53,587,567	$ 52,590,019
28	Water	320200-WT Equip Filter Media	320200	10132010	320.3	$ -	$ -	$ 508,588	$ 508,588
29	Water	330000-Dist Reservoirs & Standpipes	330000	10133000	330.4	$ -	$ -	$ 1,771,358	$ 1,771,358
30	Water	330100-Elevated Tanks & Standpipes	330100	10133000	330.4	$ 3,444,995	$ (581,734)	$ 10,222,904	$ 12,167,373
31	Water	330200-Ground Level Tanks	330200	10133000	330.4	$ 177,018	$ 128,068	$ 3,472,665	$ 3,582,591
32	Water	330400-Clearwell	330400	10133000	330.4	$ -	$ -	$ 2,581,757	$ 2,581,757
33	Water	331001-TD Mains Not Classified	331001	10133100	331.4	$ 17,685,227	$ 12,382,512	$ 152,445,040	$ 163,985,173
34	Water	331100-TD Mains 4in & Less	331100	10133100	331.4	$ (12)	$ (12)	$ 5,575,206	$ 5,575,196
35	Water	331200-TD Mains 6in to 8in	331200	10133100	331.4	$ (518)	$ (518)	$ 20,848,938	$ 20,848,506
36	Water	331300-TD Mains 10in to 16in	331300	10133100	331.4	$ -	$ -	$ 9,097,048	$ 9,097,048
37	Water	331400-TD Mains 18in & Grtr	331400	10133100	331.4	$ (380)	$ (380)	$ 72,803,572	$ 72,803,256
38	Water	333000-Services	333000	10133300	333.4	$ 2,098,785	$ 2,317,902	$ 48,339,231	$ 50,133,322
39	Water	334100-Meters	334100	10133410	334.4	$ 2,920,311	$ 2,733,439	$ 14,508,727	$ 17,509,021
40	Water	334110-Meters Bronze Case	334110	10133410	334.4	$ (3,523)	$ (3,523)	$ 2,273,841	$ 2,270,905
41	Water	334120-Meters Plastic Case	334120	10133410	334.4	$ (154,059)	$ (154,059)	$ 371,274	$ 242,892
42	Water	334130-Meters Other	334130	10133410	334.4	$ (330,536)	$ (330,536)	$ 6,357,493	$ 6,082,047
43	Water	334131-Meter Reading Units	334131	10133410	334.4	$ -	$ -	$ 314,141	$ 314,141
44	Water	334200-Meter Installations	334200	10133420	334.4	$ (7,047)	$ 55,453	$ 18,447,729	$ 18,446,208
45	Water	334300-Meter Vaults	334300	10133410	334.4	$ (404)	$ 99,596	$ 503,957	$ 510,582
46	Water	335000-Hydrants	335000	10133500	335.4	$ 755,590	$ 880,965	$ 13,954,412	$ 14,553,433
47	Water	339100-Other P/E-Intangible	339100	10133910	339.1	$ -	$ -	$ 8,375	$ 8,375
48	Water	339600-Other P/E-CPS	339600	10133910	339.1	$ 449,699	$ 35,717	$ 706,661	$ 768,447

Kentucky American Water
Case No. 2012-00520
UPIS Balances by Month, September 2012 - December 2014

Automatically calculates: Prior Month Balance + Placed in Service Activity - Removals Activity

Workpaper #: W/P - 1-1

Excel Reference: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Bal UPIS

	2013 Additions	2014 Additions	Base Period as of 31-Mar-13	Forecast 13-Month Avg Jul-13 - Jul-14
Total Water UPIS	**$ 40,093,547**	**$ 17,719,465**	**$ 598,439,504**	**$ 627,857,862**

Line #	Utility	Account	JDE / Util Plant Account	SAP GL Account	NARUC Acct	2013 Additions	2014 Additions	Base Period as of 31-Mar-13	Forecast 13-Month Average
49	Water	340100-Office Furniture & Equip	340100	10134010	340.5	$ (30,813)	$ (30,813)	$ 793,569	$ 767,891
50	Water	340210-Comp & Periph Mainframe	340210	10134010	340.5	$ (5,258)	$ (5,258)	$ 86,355	$ 81,974
51	Water	340220-Comp & Periph Personal	340220	10134010	340.5	$ (97,127)	$ (97,127)	$ 928,764	$ 847,824
52	Water	340230-Comp & Periph Other	340230	10134010	340.5	$ (11,040)	$ (11,040)	$ 745,655	$ 736,455
53	Water	340240-Comp & Periph Capital Lease	340240	10134010	340.5	$ -	$ -	$ -	$ -
54	Water	340300-Computer Software	340300	10134010	340.5	$ (170,785)	$ (170,785)	$ 3,728,421	$ 3,586,100
55	Water	340320-Comp Software Personal	340320	10134010	340.5	$ -	$ -	$ 3,481	$ 3,481
56	Water	340325-Comp Software Customized	340325	10134010	340.5	$ -	$ -	$ 700,218	$ 700,218
57	Water	340330-Comp Software Other	340330	10134010	340.5	$ -	$ -	$ 765,081	$ 765,081
58	Water	340500-Other Office Equipment	340500	10134010	340.5	$ (6,114)	$ (6,114)	$ 70,781	$ 65,686
59	Water	341100-Trans Equip Lt Duty Trks	341100	10134100	341.5	$ (125,451)	$ (118,517)	$ 2,035,255	$ 1,959,641
60	Water	341200-Trans Equip Hvy Duty Trks	341200	10134100	341.5	$ 110,270	$ 117,203	$ 1,770,795	$ 1,891,616
61	Water	341300-Trans Equip Autos	341300	10134100	341.5	$ 147,872	$ 155,016	$ 179,642	$ 332,674
62	Water	341400-Trans Equip Other	341400	10134100	341.5	$ (15,657)	$ (15,657)	$ 594,476	$ 581,429
63	Water	342000-Stores Equipment	342000	10134200	342.5	$ (461)	$ (461)	$ 37,878	$ 37,494
64	Water	343000-Tools,Shop,Garage Equip	343000	10134300	343.5	$ 302,852	$ 337,627	$ 2,321,550	$ 2,635,323
65	Water	344000-Laboratory Equipment	344000	10134400	344.5	$ (31,728)	$ (31,728)	$ 1,291,690	$ 1,265,250
66	Water	345000-Power Operated Equipment	345000	10134500	345.5	$ (17,887)	$ (19,469)	$ 1,456,342	$ 1,440,950
67	Water	346100-Comm Equip Non-Telephone	346100	10134600	346.5	$ (54,074)	$ (54,074)	$ 1,850,095	$ 1,805,033
68	Water	346190-Remote Control & Instrument	346190	10134600	346.5	$ 1,701,841	$ 864,811	$ 1,988,712	$ 3,428,822
69	Water	346200-Comm Equip Telephone	346200	10134600	346.5	$ -	$ -	$ 283,749	$ 283,749
70	Water	347000-Misc Equipment	347000	10134700	347.5	$ 229,791	$ 28,889	$ 1,291,052	$ 1,520,141
71	Water	348000-Other Tangible Property	348000	10134800	348.5	$ 236,541	$ 6,303	$ 366,304	$ 377,207
72	Water	354200-WW Struct & Imp Collection	354200	10135420	354.2	$ -	$ -	$ -	$ -
73	Water	340315-Comp Software Specia	340315	10134010	C3405	$ 6,720,044	$ 347,860	$ 5,012,553	$ 11,545,570
74	Water	339300-Other P/E-Treatment	339300	10133930	C3393	$ 237,964	$ 45,787	$ -	$ 237,772
					Water	**$ 40,093,547**	**$ 17,719,465**	**$ 598,439,504**	**$ 627,857,862**

Kentucky American Water
Case No. 2012-00520
CWIP Balance by Month, September 2012 - December 2014

Automatically calculates: Prior month balance + Capital Additions - Placed in Service Amounts

Workpaper: W/P - 1-3

Excel : Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Bal CWIP

	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13
Water CWIP Balance	$ 8,889,193	$ 13,092,597	$ 14,161,477	$ 16,590,677	$ 13,313,810	$ 12,024,764
AFUDC Eligible CWIP Balance	$ 7,270,301	$ 11,835,105	$ 13,290,362	$ 16,277,344	$ 13,099,340	$ 11,809,411

FP#	Project Description	JDE / Utility Plant Account	SAP GL Acct	NARUC Account	AFUDC?	IP In-Service Date Non-IP Months in Construx	Water CWIP Bal Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13
D12-**01-P	Projects Funded by Others	331001-T&D Mains	10133100	331.4	N	2	$ 407,312	$ 572,161	$ 329,462	$ 281,999	$ 193,023	$ 193,818
	Projects Funded by Others	335000-Hydrants	10133500	335.4	N	2	$ 46,967	$ 65,283	$ 36,607	$ 31,333	$ 21,447	$ 21,535
	Projects Funded by Others	333000-Services	10133300	333.4	N	2	$ 55,037	$ 55,037	$ -	$ -	$ -	$ -
	Projects Funded by Others	334100-Meters	10133410	334.4	N	2	$ 1,861	$ 1,861	$ -	$ -	$ -	$ -
	Projects Funded by Others	334200-Meter Installations	10133420	334.4	N	2	$ 34,012	$ 34,012	$ -	$ -	$ -	$ -
R12-**A1	Mains - New	331001-T&D Mains	10133100	331.4	Y	2	$ 12,092	$ 75,100	$ 213,997	$ 835,138	$ 684,150	$ -
R12-**B1	Mains - Replaced / Restored	331001-T&D Mains	10133100	331.4	Y	2	$ 101,600	$ 362,478	$ 483,868	$ 685,224	$ 467,598	$ 17,970
	Mains - Replaced / Restored	333000-Services	10133300	333.4	Y	2		$ 26,088	$ 48,387	$ 68,522	$ 46,760	$ 1,797
	Mains - Replaced / Restored	334100-Meters	10133410	334.4	Y	2		$ 19,566	$ 36,290	$ 51,392	$ 35,070	$ 1,348
	Mains - Replaced / Restored	335000-Hydrants	10133500	335.4	Y	2	$ 2,512	$ 22,078	$ 36,290	$ 51,392	$ 35,070	$ 1,348
R12-**C1	Mains - Unscheduled	331001-T&D Mains	10133100	331.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -
R12-**D1	Mains - Relocated	331001-T&D Mains	10133100	331.4	Y	2	$ -	$ -	$ 90,000	$ 340,200	$ 250,200	$ -
	Mains - Relocated	335000-Hydrants	10133500	335.4	Y	2	$ -	$ -	$ 10,000	$ 37,800	$ 27,800	$ -
R12-**E1	Hydrants, Valves, and Manholes - New	335000-Hydrants	10133500	335.4	N	1	$ 12,901	$ -	$ -	$ -	$ -	$ -
	Hydrants, Valves, and Manholes - New	331001-T&D Mains	10133100	331.4	N	1		$ -	$ -	$ -	$ -	$ -
R12-**F1	Hydrants, Valves, and Manholes - Replaced	335000-Hydrants	10133500	335.4	N	1	$ (228)	$ -	$ -	$ -	$ -	$ -
	Hydrants, Valves, and Manholes - Replaced	331001-T&D Mains	10133100	331.4	N	1		$ -	$ -	$ -	$ -	$ -
R12-**G1	Services and Laterals - New	333000-Services	10133300	333.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -
R12-**H1	Services and Laterals - Replaced	333000-Services	10133300	333.4	N	1	$ 2,609	$ -	$ -	$ -	$ -	$ -
	Services and Laterals - Replaced	334200-Meter Installations	10133420	334.4	N	1	$ 962	$ -	$ -	$ -	$ -	$ -
R12-**I1	Meters - New	334100-Meters	10133410	334.4	N	1	$ 168,382	$ -	$ -	$ -	$ -	$ -
R12-**J1	Meters - Replaced	334100-Meters	10133410	334.4	N	1	$ 2,523	$ -	$ -	$ -	$ -	$ -
	Meters - Replaced	334200-Meter Installations	10133420	334.4	N	1	$ (314)	$ -	$ -	$ -	$ -	$ -
R12-**K1	ITS Equipment and Systems	334100-Meters	10133410	334.4	N	1	$ 8,111	$ -	$ -	$ -	$ -	$ -
R12-**L1	SCADA Equipment and Systems	346190-Remote Control & Instrum	10134600	346.5	Y	6	$ 459,726	$ 500,360	$ 583,014	$ 1,062,342	$ 1,062,342	$ 1,062,342
R12-**M1	Security Equipment and Systems	304500-Struct & Imp-General	10130450	304.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -
R12-**N1	Offices and Operations Centers	304500-Struct & Imp-General	10130450	304.5	N	1	$ 68,165	$ -	$ -	$ -	$ -	$ -
	Offices and Operations Centers	304100-Struct & Imp-Supply	10130410	304.2	N	1	$ 7,489	$ -	$ -	$ -	$ -	$ -
	Offices and Operations Centers	340100-Office Furniture & Equip	10134010	340.5	N	1	$ 131,066	$ -	$ -	$ -	$ -	$ -
	Offices and Operations Centers	340300-Computer Software	10134010	340.5	N	1	$ 7,894	$ -	$ -	$ -	$ -	$ -
	Offices and Operations Centers	346100-Comm Equip Non-Telepho	10134600	346.5	N	1	$ 93,467	$ -	$ -	$ -	$ -	$ -
	Offices and Operations Centers	347000-Misc Equipment	10134700	347.5	N	1	$ 12,332	$ -	$ -	$ -	$ -	$ -
R12-**O1	Vehicles	341100-Trans Equip Lt Duty Trks	10134100	341.5	N	1	$ (206)	$ -	$ -	$ -	$ -	$ -
	Vehicles	341200-Trans Equip Hvy Duty Trks	10134100	341.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -
	Vehicles	341300-Trans Equip Auto Car	10134100	341.5	N	1	$ (162)	$ -	$ -	$ -	$ -	$ -
R12-**P1	Tools and Equipment	343000-Tools,Shop,Garage Equip	10134300	343.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -
R12-**Q1	Process Plant Facilities and Equipment	304300-Struct & Imp-Treatment	10130430	304.3	Y	2	$ -	$ 124,502	$ 231,005	$ 205,699	$ 99,196	$ -
	Process Plant Facilities and Equipment	306000-Lake, River & Other Intake	10130600	306.2	Y	2	$ 1,494	$ 48,182	$ 86,627	$ 77,137	$ 37,199	$ -
	Process Plant Facilities and Equipment	311000-Pumping Equipment	10131120	311.2	Y	2	$ 14,743	$ 92,557	$ 144,378	$ 128,562	$ 61,998	$ -
	Process Plant Facilities and Equipment	320100-Wt Equip Non-Media	10132010	320.3	Y	2	$ -	$ 31,126	$ 57,751	$ 51,425	$ 24,799	$ -
	Process Plant Facilities and Equipment	330200-Ground Level Tanks	10133000	330.4	Y	2	$ 203,702	$ 234,828	$ 57,751	$ 51,425	$ 24,799	$ -
	Process Plant Facilities and Equipment	344000-Laboratory Equipment	10134400	344.5	Y	2	$ 7,157	$ 7,157	$ -	$ -	$ -	$ -
R12-**S1	Engineering Studies	339600-Other P/E-Cps	10133910	339.1	Y	6	$ 400,277	$ 416,751	$ 433,225	$ 449,699	$ 449,699	$ 449,699
	Engineering Studies	348000-Other Tangible Property	10134800	348.5	Y	6	$ 227,819	$ 230,727	$ 233,634	$ 236,541	$ 236,541	$ 236,541
T12-0102-P	Business Transformation 2010 - 2014	340200-Comp & Periph Equip	10134010	340.5	Y	5/1/2013	$ 3,772,437	$ 4,342,640	$ 4,612,631	$ 4,857,415	$ 5,179,845	$ 5,535,646

Kentucky American Water
Case No. 2012-00520
CWIP Balance by Month, September 2012 - December 2014

Automatically calculates: Prior month balance + Capital Additions - Placed in Service Amounts

Workpaper: W/P - 1-3

Excel : Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Bal CWIP

	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13
Water CWIP Balance	$ 8,889,193	$ 13,092,597	$ 14,161,477	$ 16,590,677	$ 13,313,810	$ 12,024,764
AFUDC Eligible CWIP Balance	$ 7,270,301	$ 11,835,105	$ 13,290,362	$ 16,277,344	$ 13,099,340	$ 11,809,411

FP#	Project Description	JDE / Utility Plant Account	SAP GL Acct	NARUC Account	AFUDC?	IP In-Service Date Non-IP Months in Construx	Water CWIP Bal Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13
	Business Transformation 2010 - 2014	340300-Computer Software	10134010	340.5	Y	5/1/2013		$ -	$ -	$ -	$ -	$ -
T12-0103-P	Business Transformation 2010 - 2014	340315-Comp Software Specia	10134010	340.5	Y	8/1/2012	$ 286,481	$ 231,977	$ 188,943	$ 145,608	$ 81,189	$ (61,152)
I12-020001	New WTP On Pool 3 of Kentucky	331001-T&D Mains	10133100	331.4	N	9/20/2010	$ 5,484	$ -	$ -	$ -	$ -	$ -
I12-020027	Russell Cave Rd Main Extension	330200-Ground Level Tanks	10133000	330.4	N	7/15/2012	$ 553,227	$ 529,137	$ 505,046	$ -	$ -	$ -
I12-020009	US 25 Relocation	331001-T&D Mains	10133100	331.4	N	7/30/2012		$ -	$ -	$ -	$ -	$ -
	US 25 Relocation	333000-Services	10133300	333.4	N	7/30/2012		$ -	$ -	$ -	$ -	$ -
	US 25 Relocation	335000-Hydrants	10133500	335.4	N	7/30/2012		$ -	$ -	$ -	$ -	$ -
I12-020010	Leestown Road	331001-T&D Mains	10133100	331.4	Y	4/15/2013	$ 995,789	$ 994,442	$ 1,143,999	$ 1,318,056	$ 1,360,556	$ 1,403,056
	Leestown Road	333000-Services	10133300	333.4	Y	4/15/2013		$ (159)	$ 17,436	$ 37,914	$ 42,914	$ 47,914
	Leestown Road	335000-Hydrants	10133500	335.4	Y	4/15/2013		$ (79)	$ 8,718	$ 18,957	$ 21,457	$ 23,957
I12-020025	Pump Efficiency Replacement	311000-Pumping Equipment	10131120	311.2	Y	4/15/2013	$ 31,380	$ 68,458	$ 152,739	$ 627,775	$ 722,414	$ 802,414
	Pump Efficiency Replacement	311200-Pump Eqp Electric	10131120	311.2	Y	4/15/2013	$ 54,201	$ 82,010	$ 145,220	$ 501,498	$ 572,477	$ 632,477
	Pump Efficiency Replacement	339300-Other P/E-Treatment	10133930	339.3	Y	4/15/2013	$ 5,705	$ 14,975	$ 36,045	$ 154,804	$ 178,464	$ 198,464
	Pump Efficiency Replacement	346190-Remote Control & Instrum	10134600	346.5	Y	4/15/2013	$ 1,141	$ 10,411	$ 31,481	$ 150,240	$ 173,900	$ 193,900
	Pump Efficiency Replacement	347000-Misc Equipment	10134700	347.5	Y	4/15/2013	$ 7,417	$ 16,686	$ 37,757	$ 156,516	$ 180,176	$ 200,176
I12-300003	Northern Division Connection	303500-Land & Land Rights-T&D	10130350	303.4	Y	12/28/2013	$ 154,790	$ 202,755	$ 207,059	$ 204,162	$ 160,162	$ 160,444
	Northern Division Connection	331001-T&D Mains	10133100	331.4	Y	12/28/2013	$ 529,836	$ 2,720,206	$ 2,916,753	$ 2,784,472	$ 775,137	$ 788,005
	Northern Division Connection	311540-Pumping Equipment Td	10131154	311.4	Y	12/28/2013	$ -	$ 79,941	$ 87,114	$ 82,286	$ 8,953	$ 9,422
	Northern Division Connection	311200-Pump Eqp Electric	10131120	311.2	Y	12/28/2013	$ -	$ 63,952	$ 69,691	$ 65,829	$ 7,162	$ 7,538
	Northern Division Connection	346190-Remote Control & Instrum	10134600	346.5	Y	12/28/2013	$ -	$ 15,988	$ 17,423	$ 16,457	$ 1,791	$ 1,884
	Northern Division Connection	330100-Elevated Tanks & Standpi	10133000	330.4	Y	12/28/2013	$ -	$ 799,405	$ 871,138	$ 822,860	$ 89,526	$ 94,222
IP-1202-9	Todds and Cleveland Rd Main Extension	331001-T&D Mains	10133100	331.4	Y	11/15/2014		$ -	$ -	$ -	$ -	$ -
	Todds and Cleveland Rd Main Extension	335000-Hydrants	10133500	335.4	Y	11/15/2014		$ -	$ -	$ -	$ -	$ -
IP-1202-10	KRS Clearwell Improvements (332)	304300-Struct & Imp-Treatment	10130430	304.3	Y	6/15/2015		$ -	$ -	$ -	$ -	$ -
IP-1202-11	I-75 Main Extension	331001-T&D Mains	10133100	331.4	Y	11/15/2014		$ -	$ -	$ -	$ -	$ -
	I-75 Main Extension	335000-Hydrants	10133500	335.4	Y	11/15/2014		$ -	$ -	$ -	$ -	$ -
IP-1202-13	Greenwich Rd Main Extension	331001-T&D Mains	10133100	331.4	Y	10/15/2014		$ -	$ -	$ -	$ -	$ -
	Greenwich Rd Main Extension	335000-Hydrants	10133500	335.4	Y	10/15/2014		$ -	$ -	$ -	$ -	$ -
IP-1202-16	North Upper St Main Replacement (343)	331001-T&D Mains	10133100	331.4	Y	12/15/2014		$ -	$ -	$ -	$ -	$ -
	North Upper St Main Replacement (343)	333000-Services	10133300	333.4	Y	12/15/2014		$ -	$ -	$ -	$ -	$ -
	North Upper St Main Replacement (343)	335000-Hydrants	10133500	335.4	Y	12/15/2014		$ -	$ -	$ -	$ -	$ -
IP-1202-20	KY Major Highway	331001-T&D Mains	10133100	331.4	Y	12/15/2014		$ -	$ -	$ -	$ -	$ -
	KY Major Highway	333000-Services	10133300	333.4	Y	12/15/2014		$ -	$ -	$ -	$ -	$ -
	KY Major Highway	335000-Hydrants	10133500	335.4	Y	12/15/2014		$ -	$ -	$ -	$ -	$ -
IP-1202-23	RRS Carbon and Pre-Chlorine Feed	304300-Struct & Imp-Treatment	10130430	304.3	Y	9/15/2014		$ -	$ -	$ -	$ -	$ -
	RRS Carbon and Pre-Chlorine Feed	311000-Pumping Equipment	10131120	311.2	Y	9/15/2014		$ -	$ -	$ -	$ -	$ -
	RRS Carbon and Pre-Chlorine Feed	311200-Pump Eqp Electric	10131120	311.2	Y	9/15/2014		$ -	$ -	$ -	$ -	$ -
	RRS Carbon and Pre-Chlorine Feed	320100-Wt Equip Non-Media	10132010	320.3	Y	9/15/2014		$ -	$ -	$ -	$ -	$ -
IP-1202-27	KRS Hydrotreater Valve & Flow Meter	334100-Meters	10133410	334.4	Y	7/30/2014		$ -	$ -	$ -	$ -	$ -
	KRS Hydrotreater Valve & Flow Meter	334200-Meter Installations	10133420	334.4	Y	7/30/2014		$ -	$ -	$ -	$ -	$ -
	KRS Hydrotreater Valve & Flow Meter	334300-Meter Vaults	10133410	334.4	Y	7/30/2014		$ -	$ -	$ -	$ -	$ -
IP-1202-39	Pump Efficiency Repl	311000-Pumping Equipment	10131120	311.2	Y	9/25/2014		$ -	$ -	$ -	$ -	$ -
	Pump Efficiency Repl	311200-Pump Eqp Electric	10131120	311.2	Y	9/25/2014		$ -	$ -	$ -	$ -	$ -
	Pump Efficiency Repl	339300-Other P/E-Treatment	10133930	339.3	Y	9/25/2014		$ -	$ -	$ -	$ -	$ -
	Pump Efficiency Repl	346190-Remote Control & Instrum	10134600	346.5	Y	9/25/2014		$ -	$ -	$ -	$ -	$ -
	Pump Efficiency Repl	347000-Misc Equipment	10134700	347.5	Y	9/25/2014		$ -	$ -	$ -	$ -	$ -

Kentucky American Water
Case No. 2012-00520
CWIP Balance by Month, September 2012 - December 2014

Automatically calculates: Prior month balance + Capital Additions - Placed in Service Amounts

Workpaper: W/P - 1-3

Excel : Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Bal CWIP

	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13
$	11,962,256	10,083,334	5,763,302	7,292,145	9,454,825	12,148,016	13,494,674
AFU $	11,678,620	9,768,183	5,427,141	6,913,964	9,043,029	11,741,473	13,121,746

FP#	Project Description	JDE / Utility Plant Account	SAP GL Acct	NARUC Account	AFUDC?	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13
D12-**01-P	Projects Funded by Others	331001-T&D Mains	10133100	331.4	N	$ 255,272	$ 283,636	$ 302,545	$ 340,363	$ 370,616	$ 365,889	$ 335,635
	Projects Funded by Others	335000-Hydrants	10133500	335.4	N	$ 28,364	$ 31,515	$ 33,616	$ 37,818	$ 41,180	$ 40,654	$ 37,293
	Projects Funded by Others	333000-Services	10133300	333.4	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Projects Funded by Others	334100-Meters	10133410	334.4	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Projects Funded by Others	334200-Meter Installations	10133420	334.4	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
R12-**A1	Mains - New	331001-T&D Mains	10133100	331.4	Y	$ -	$ 10,505	$ 36,768	$ 57,779	$ 89,294	$ 110,304	$ 87,193
R12-**B1	Mains - Replaced / Restored	331001-T&D Mains	10133100	331.4	Y	$ 82,829	$ 158,465	$ 238,706	$ 350,544	$ 421,574	$ 444,200	$ 453,817
	Mains - Replaced / Restored	333000-Services	10133300	333.4	Y	$ 8,283	$ 15,846	$ 23,871	$ 35,054	$ 42,157	$ 44,420	$ 45,382
	Mains - Replaced / Restored	334100-Meters	10133410	334.4	Y	$ 6,212	$ 11,885	$ 17,903	$ 26,291	$ 31,618	$ 33,315	$ 34,036
	Mains - Replaced / Restored	335000-Hydrants	10133500	335.4	Y	$ 6,212	$ 11,885	$ 17,903	$ 26,291	$ 31,618	$ 33,315	$ 34,036
R12-**C1	Mains - Unscheduled	331001-T&D Mains	10133100	331.4	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
R12-**D1	Mains - Relocated	331001-T&D Mains	10133100	331.4	Y	$ -	$ 4,728	$ 14,182	$ 37,819	$ 84,146	$ 131,418	$ 170,181
	Mains - Relocated	335000-Hydrants	10133500	335.4	Y	$ -	$ 525	$ 1,576	$ 4,202	$ 9,350	$ 14,602	$ 18,909
R12-**E1	Hydrants, Valves, and Manholes - New	335000-Hydrants	10133500	335.4	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Hydrants, Valves, and Manholes - New	331001-T&D Mains	10133100	331.4	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
R12-**F1	Hydrants, Valves, and Manholes - Replaced	335000-Hydrants	10133500	335.4	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Hydrants, Valves, and Manholes - Replaced	331001-T&D Mains	10133100	331.4	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
R12-**G1	Services and Laterals - New	333000-Services	10133300	333.4	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
R12-**H1	Services and Laterals - Replaced	333000-Services	10133300	333.4	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Services and Laterals - Replaced	334200-Meter Installations	10133420	334.4	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
R12-**I1	Meters - New	334100-Meters	10133410	334.4	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
R12-**J1	Meters - Replaced	334100-Meters	10133410	334.4	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Meters - Replaced	334200-Meter Installations	10133420	334.4	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
R12-**K1	ITS Equipment and Systems	334100-Meters	10133410	334.4	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
R12-**L1	SCADA Equipment and Systems	346190-Remote Control & Instrum	10134600	346.5	Y	$ 924,274	$ 894,145	$ 816,218	$ 336,890	$ 363,153	$ 684,811	$ 470,372
R12-**M1	Security Equipment and Systems	304500-Struct & Imp-General	10130450	304.5	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
R12-**N1	Offices and Operations Centers	304500-Struct & Imp-General	10130450	304.5	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Offices and Operations Centers	304100-Struct & Imp-Supply	10130410	304.2	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Offices and Operations Centers	340100-Office Furniture & Equip	10134010	340.5	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Offices and Operations Centers	340300-Computer Software	10134010	340.5	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Offices and Operations Centers	346100-Comm Equip Non-Telephc	10134600	346.5	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Offices and Operations Centers	347000-Misc Equipment	10134700	347.5	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
R12-**O1	Vehicles	341100-Trans Equip Lt Duty Trks	10134100	341.5	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Vehicles	341200-Trans Equip Hvy Duty Trks	10134100	341.5	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Vehicles	341300-Trans Equip Auto Car	10134100	341.5	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
R12-**P1	Tools and Equipment	343000-Tools,Shop,Garage Equip	10134300	343.5	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
R12-**Q1	Process Plant Facilities and Equipment	304300-Struct & Imp-Treatment	10130430	304.3	Y	$ 16,598	$ 93,296	$ 97,708	$ 125,721	$ 178,246	$ 123,620	$ 137,983
	Process Plant Facilities and Equipment	306000-Lake, River & Other Intake	10130600	306.2	Y	$ 6,224	$ 34,986	$ 36,641	$ 47,145	$ 66,842	$ 46,358	$ 51,744
	Process Plant Facilities and Equipment	311000-Pumping Equipment	10131120	311.2	Y	$ 10,374	$ 58,310	$ 61,068	$ 78,576	$ 111,404	$ 77,263	$ 86,239
	Process Plant Facilities and Equipment	320100-Wt Equip Non-Media	10132010	320.3	Y	$ 4,150	$ 23,324	$ 24,427	$ 31,430	$ 44,562	$ 30,905	$ 34,496
	Process Plant Facilities and Equipment	330200-Ground Level Tanks	10133000	330.4	Y	$ 4,150	$ 23,324	$ 24,427	$ 31,430	$ 44,562	$ 30,905	$ 34,496
	Process Plant Facilities and Equipment	344000-Laboratory Equipment	10134400	344.5	Y	$ -	$ -	$ -	$ -	$ -	$ -	$ -
R12-**S1	Engineering Studies	339600-Other P/E-Cps	10133910	339.1	Y	$ 49,422	$ 32,948	$ 16,474	$ -	$ -	$ 8,929	$ 17,859
	Engineering Studies	348000-Other Tangible Property	10134800	348.5	Y	$ 8,722	$ 5,814	$ 2,907	$ (0)	$ (0)	$ 1,576	$ 3,151
T12-0102-P	Business Transformation 2010 - 2014	340200-Comp & Periph Equip	10134010	340.5	Y	$ 5,740,156	$ 5,943,239	$ 294,209	$ 294,209	$ 294,209	$ 294,209	$ 294,209

Kentucky American Water
Case No. 2012-00520
CWIP Balance by Month, September 2012 - December 2014

Automatically calculates: Prior month balance + Capital Additions - Placed in Service Amounts

		Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13
Workpaper: W/P - 1-3		$ 11,962,256	$ 10,083,334	$ 5,763,302	$ 7,292,145	$ 9,454,825	$ 12,148,016	$ 13,494,674
Excel : Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Bal CWIP	AFU	$ 11,678,620	$ 9,768,183	$ 5,427,141	$ 6,913,964	$ 9,043,029	$ 11,741,473	$ 13,121,746

FP#	Project Description	JDE / Utility Plant Account	SAP GL Acct	NARUC Account	AFUDC?	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13
	Business Transformation 2010 - 2014	340300-Computer Software	10134010	340.5	Y	$ -	$ -	$ -	$ -	$ -	$ -	$ -
T12-0103-P	Business Transformation 2010 - 2014	340315-Comp Software Specia	10134010	340.5	Y	$ (57,447)	$ (60,809)	$ (60,809)	$ (60,809)	$ (60,809)	$ (60,809)	$ (60,809)
I12-020001	New WTP On Pool 3 of Kentucky	331001-T&D Mains	10133100	331.4	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
I12-020027	Russell Cave Rd Main Extension	330200-Ground Level Tanks	10133000	330.4	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
I12-020009	US 25 Relocation	331001-T&D Mains	10133100	331.4	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	US 25 Relocation	333000-Services	10133300	333.4	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	US 25 Relocation	335000-Hydrants	10133500	335.4	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
I12-020010	Leestown Road	331001-T&D Mains	10133100	331.4	Y	$ 1,530,556	$ -	$ -	$ -	$ -	$ -	$ -
	Leestown Road	333000-Services	10133300	333.4	Y	$ 62,914	$ -	$ -	$ -	$ -	$ -	$ -
	Leestown Road	335000-Hydrants	10133500	335.4	Y	$ 31,457	$ -	$ -	$ -	$ -	$ -	$ -
I12-020025	Pump Efficiency Replacement	311000-Pumping Equipment	10131120	311.2	Y	$ 810,414	$ -	$ -	$ -	$ -	$ -	$ -
	Pump Efficiency Replacement	311200-Pump Eqp Electric	10131120	311.2	Y	$ 638,477	$ -	$ -	$ -	$ -	$ -	$ -
	Pump Efficiency Replacement	339300-Other P/E-Treatment	10133930	339.3	Y	$ 200,464	$ -	$ -	$ -	$ -	$ -	$ -
	Pump Efficiency Replacement	346190-Remote Control & Instrum	10134600	346.5	Y	$ 195,900	$ -	$ -	$ -	$ -	$ -	$ -
	Pump Efficiency Replacement	347000-Misc Equipment	10134700	347.5	Y	$ 202,176	$ -	$ -	$ -	$ -	$ -	$ -
I12-300003	Northern Division Connection	303500-Land & Land Rights-T&D	10130350	303.4	Y	$ 162,462	$ 182,107	$ 200,965	$ 226,892	$ 253,887	$ 289,903	$ 312,648
	Northern Division Connection	331001-T&D Mains	10133100	331.4	Y	$ 880,200	$ 1,777,317	$ 2,638,497	$ 3,822,470	$ 5,055,273	$ 6,699,978	$ 7,738,657
	Northern Division Connection	311540-Pumping Equipment Td	10131154	311.4	Y	$ 12,787	$ 45,529	$ 76,958	$ 120,169	$ 165,162	$ 225,188	$ 263,096
	Northern Division Connection	311200-Pump Eqp Electric	10131120	311.2	Y	$ 10,230	$ 36,423	$ 61,567	$ 96,135	$ 132,130	$ 180,150	$ 210,477
	Northern Division Connection	346190-Remote Control & Instrum	10134600	346.5	Y	$ 2,557	$ 9,106	$ 15,392	$ 24,034	$ 33,032	$ 45,038	$ 52,619
	Northern Division Connection	330100-Elevated Tanks & Standpip	10133000	330.4	Y	$ 127,870	$ 455,285	$ 769,584	$ 1,201,691	$ 1,651,619	$ 2,251,877	$ 2,630,957
IP-1202-9	Todds and Cleveland Rd Main Extension	331001-T&D Mains	10133100	331.4	Y	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Todds and Cleveland Rd Main Extension	335000-Hydrants	10133500	335.4	Y	$ -	$ -	$ -	$ -	$ -	$ -	$ -
IP-1202-10	KRS Clearwell Improvements (332)	304300-Struct & Imp-Treatment	10130430	304.3	Y	$ -	$ -	$ -	$ -	$ -	$ -	$ -
IP-1202-11	I-75 Main Extension	331001-T&D Mains	10133100	331.4	Y	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	I-75 Main Extension	335000-Hydrants	10133500	335.4	Y	$ -	$ -	$ -	$ -	$ -	$ -	$ -
IP-1202-13	Greenwich Rd Main Extension	331001-T&D Mains	10133100	331.4	Y	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Greenwich Rd Main Extension	335000-Hydrants	10133500	335.4	Y	$ -	$ -	$ -	$ -	$ -	$ -	$ -
IP-1202-16	North Upper St Main Replacement (343)	331001-T&D Mains	10133100	331.4	Y	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	North Upper St Main Replacement (343)	333000-Services	10133300	333.4	Y	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	North Upper St Main Replacement (343)	335000-Hydrants	10133500	335.4	Y	$ -	$ -	$ -	$ -	$ -	$ -	$ -
IP-1202-20	KY Major Highway	331001-T&D Mains	10133100	331.4	Y	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	KY Major Highway	333000-Services	10133300	333.4	Y	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	KY Major Highway	335000-Hydrants	10133500	335.4	Y	$ -	$ -	$ -	$ -	$ -	$ -	$ -
IP-1202-23	RRS Carbon and Pre-Chlorine Feed	304300-Struct & Imp-Treatment	10130430	304.3	Y	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	RRS Carbon and Pre-Chlorine Feed	311000-Pumping Equipment	10131120	311.2	Y	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	RRS Carbon and Pre-Chlorine Feed	311200-Pump Eqp Electric	10131120	311.2	Y	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	RRS Carbon and Pre-Chlorine Feed	320100-Wt Equip Non-Media	10132010	320.3	Y	$ -	$ -	$ -	$ -	$ -	$ -	$ -
IP-1202-27	KRS Hydrotreater Valve & Flow Meter	334100-Meters	10133410	334.4	Y	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	KRS Hydrotreater Valve & Flow Meter	334200-Meter Installations	10133420	334.4	Y	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	KRS Hydrotreater Valve & Flow Meter	334300-Meter Vaults	10133410	334.4	Y	$ -	$ -	$ -	$ -	$ -	$ -	$ -
IP-1202-39	Pump Efficiency Repl	311000-Pumping Equipment	10131120	311.2	Y	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Pump Efficiency Repl	311200-Pump Eqp Electric	10131120	311.2	Y	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Pump Efficiency Repl	339300-Other P/E-Treatment	10133930	339.3	Y	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Pump Efficiency Repl	346190-Remote Control & Instrum	10134600	346.5	Y	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Pump Efficiency Repl	347000-Misc Equipment	10134700	347.5	Y	$ -	$ -	$ -	$ -	$ -	$ -	$ -

Kentucky American Water
Case No. 2012-00520
CWIP Balance by Month, September 2012 - December 2014

Automatically calculates: Prior month balance + Capital Additions - Placed in Service Amounts

		Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14
Workpaper:	W/P - 1-3	$ 15,215,398	$ 16,056,473	$ 1,843,932	$ 1,629,160	$ 1,471,964	$ 1,749,567	$ 2,266,206	$ 2,785,930
Excel :	Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Bal CWIP AFU	$ 14,846,086	$ 15,629,181	$ 1,437,572	$ 1,370,073	$ 1,256,611	$ 1,465,931	$ 1,951,055	$ 2,439,769

FP#	Project Description	JDE / Utility Plant Account	SAP GL Acct	NARUC Account	AFUDC?	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14
D12-**01-P	Projects Funded by Others	331001-T&D Mains	10133100	331.4	N	332,381	384,563	365,724	233,178	193,818	255,272	283,636	311,545
	Projects Funded by Others	335000-Hydrants	10133500	335.4	N	36,931	42,729	40,636	25,909	21,535	28,364	31,515	34,616
	Projects Funded by Others	333000-Services	10133300	333.4	N	-	-	-	-	-	-	-	-
	Projects Funded by Others	334100-Meters	10133410	334.4	N	-	-	-	-	-	-	-	-
	Projects Funded by Others	334200-Meter Installations	10133420	334.4	N	-	-	-	-	-	-	-	-
R12-**A1	Mains - New	331001-T&D Mains	10133100	331.4	Y	50,403	26,241	21,008	10,503	-	10,505	21,010	36,768
R12-**B1	Mains - Replaced / Restored	331001-T&D Mains	10133100	331.4	Y	394,989	300,218	213,322	89,185	60,809	122,829	161,455	249,697
	Mains - Replaced / Restored	333000-Services	10133300	333.4	Y	39,499	30,022	21,332	8,918	6,081	12,283	16,146	24,970
	Mains - Replaced / Restored	334100-Meters	10133410	334.4	Y	29,624	22,516	15,999	6,689	4,561	9,212	12,109	18,727
	Mains - Replaced / Restored	335000-Hydrants	10133500	335.4	Y	29,624	22,516	15,999	6,689	4,561	9,212	12,109	18,727
R12-**C1	Mains - Unscheduled	331001-T&D Mains	10133100	331.4	N	-	-	-	-	-	-	-	-
R12-**D1	Mains - Relocated	331001-T&D Mains	10133100	331.4	Y	189,090	141,818	69,017	21,744	-	4,728	14,182	23,637
	Mains - Relocated	335000-Hydrants	10133500	335.4	Y	21,010	15,758	7,669	2,416	-	525	1,576	2,626
R12-**E1	Hydrants, Valves, and Manholes - New	335000-Hydrants	10133500	335.4	N	-	-	-	-	-	-	-	-
	Hydrants, Valves, and Manholes - New	331001-T&D Mains	10133100	331.4	N	-	-	-	-	-	-	-	-
R12-**F1	Hydrants, Valves, and Manholes - Replaced	335000-Hydrants	10133500	335.4	N	-	-	-	-	-	-	-	-
	Hydrants, Valves, and Manholes - Replaced	331001-T&D Mains	10133100	331.4	N	-	-	-	-	-	-	-	-
R12-**G1	Services and Laterals - New	333000-Services	10133300	333.4	N	-	-	-	-	-	-	-	-
R12-**H1	Services and Laterals - Replaced	333000-Services	10133300	333.4	N	-	-	-	-	-	-	-	-
	Services and Laterals - Replaced	334200-Meter Installations	10133420	334.4	N	-	-	-	-	-	-	-	-
R12-**I1	Meters - New	334100-Meters	10133410	334.4	N	-	-	-	-	-	-	-	-
R12-**J1	Meters - Replaced	334100-Meters	10133410	334.4	N	-	-	-	-	-	-	-	-
	Meters - Replaced	334200-Meter Installations	10133420	334.4	N	-	-	-	-	-	-	-	-
R12-**K1	ITS Equipment and Systems	334100-Meters	10133410	334.4	N	-	-	-	-	-	-	-	-
R12-**L1	SCADA Equipment and Systems	346190-Remote Control & Instrum	10134600	346.5	Y	567,086	669,578	776,798	750,535	428,877	321,658	230,197	122,978
R12-**M1	Security Equipment and Systems	304500-Struct & Imp-General	10130450	304.5	N	-	-	-	-	-	-	-	-
R12-**N1	Offices and Operations Centers	304500-Struct & Imp-General	10130450	304.5	N	-	-	-	-	-	-	-	-
	Offices and Operations Centers	304100-Struct & Imp-Supply	10130410	304.2	N	-	-	-	-	-	-	-	-
	Offices and Operations Centers	340100-Office Furniture & Equip	10134010	340.5	N	-	-	-	-	-	-	-	-
	Offices and Operations Centers	340300-Computer Software	10134010	340.5	N	-	-	-	-	-	-	-	-
	Offices and Operations Centers	346100-Comm Equip Non-Telepho	10134600	346.5	N	-	-	-	-	-	-	-	-
	Offices and Operations Centers	347000-Misc Equipment	10134700	347.5	N	-	-	-	-	-	-	-	-
R12-**O1	Vehicles	341100-Trans Equip Lt Duty Trks	10134100	341.5	N	-	-	-	-	-	-	-	-
	Vehicles	341200-Trans Equip Hvy Duty Trks	10134100	341.5	N	-	-	-	-	-	-	-	-
	Vehicles	341300-Trans Equip Auto Car	10134100	341.5	N	-	-	-	-	-	-	-	-
R12-**P1	Tools and Equipment	343000-Tools,Shop,Garage Equip	10134300	343.5	N	-	-	-	-	-	-	-	-
R12-**Q1	Process Plant Facilities and Equipment	304300-Struct & Imp-Treatment	10130430	304.3	Y	159,736	80,241	8,403	-	-	14,707	81,939	127,932
	Process Plant Facilities and Equipment	306000-Lake, River & Other Intake	10130600	306.2	Y	59,901	30,090	3,151	-	-	5,515	30,727	47,975
	Process Plant Facilities and Equipment	311000-Pumping Equipment	10131120	311.2	Y	99,835	50,151	5,252	-	-	9,192	51,212	79,958
	Process Plant Facilities and Equipment	320100-Wt Equip Non-Media	10132010	320.3	Y	39,934	20,060	2,101	-	-	3,677	20,485	31,983
	Process Plant Facilities and Equipment	330200-Ground Level Tanks	10133000	330.4	Y	39,934	20,060	2,101	-	-	3,677	20,485	31,983
	Process Plant Facilities and Equipment	344000-Laboratory Equipment	10134400	344.5	Y	-	-	-	-	-	-	-	-
R12-**S1	Engineering Studies	339600-Other P/E-Cps	10133910	339.1	Y	26,788	35,717	35,717	35,717	26,788	17,859	8,929	-
	Engineering Studies	348000-Other Tangible Property	10134800	348.5	Y	4,727	6,303	6,303	6,303	4,727	3,151	1,576	(0)
T12-0102-P	Business Transformation 2010 - 2014	340200-Comp & Periph Equip	10134010	340.5	Y	294,209	294,209	294,209	294,209	294,209	60,809	60,809	60,809

Kentucky American Water
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CWIP Balance by Month, September 2012 - December 2014

Automatically calculates: Prior month balance + Capital Additions - Placed in Service Amounts

Workpaper: W/P - 1-3

Excel : Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Bal CWIP

	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14
	$ 15,215,398	$ 16,056,473	$ 1,843,932	$ 1,629,160	$ 1,471,964	$ 1,749,567	$ 2,266,206	$ 2,785,930
AFU	$ 14,846,086	$ 15,629,181	$ 1,437,572	$ 1,370,073	$ 1,256,611	$ 1,465,931	$ 1,951,055	$ 2,439,769

FP#	Project Description	JDE / Utility Plant Account	SAP GL Acct	NARUC Account	AFUDC?	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14
	Business Transformation 2010 - 2014	340300-Computer Software	10134010	340.5	Y	-	-	-	-	-	-	-	-
T12-0103-P	Business Transformation 2010 - 2014	340315-Comp Software Specia	10134010	340.5	Y	(60,809)	(60,809)	(60,809)	(60,809)	(60,809)	(60,809)	(60,809)	(60,809)
I12-020001	New WTP On Pool 3 of Kentucky	331001-T&D Mains	10133100	331.4	N	-	-	-	-	-	-	-	-
I12-020027	Russell Cave Rd Main Extension	330200-Ground Level Tanks	10133000	330.4	N	-	-	-	-	-	-	-	-
I12-020009	US 25 Relocation	331001-T&D Mains	10133100	331.4	N	-	-	-	-	-	-	-	-
	US 25 Relocation	333000-Services	10133300	333.4	N	-	-	-	-	-	-	-	-
	US 25 Relocation	335000-Hydrants	10133500	335.4	N	-	-	-	-	-	-	-	-
I12-020010	Leestown Road	331001-T&D Mains	10133100	331.4	Y	-	-	-	-	-	-	-	-
	Leestown Road	333000-Services	10133300	333.4	Y	-	-	-	-	-	-	-	-
	Leestown Road	335000-Hydrants	10133500	335.4	Y	-	-	-	-	-	-	-	-
I12-020025	Pump Efficiency Replacement	311000-Pumping Equipment	10131120	311.2	Y	-	-	-	-	-	-	-	-
	Pump Efficiency Replacement	311200-Pump Eqp Electric	10131120	311.2	Y	-	-	-	-	-	-	-	-
	Pump Efficiency Replacement	339300-Other P/E-Treatment	10133930	339.3	Y	-	-	-	-	-	-	-	-
	Pump Efficiency Replacement	346190-Remote Control & Instrun	10134600	346.5	Y	-	-	-	-	-	-	-	-
	Pump Efficiency Replacement	347000-Misc Equipment	10134700	347.5	Y	-	-	-	-	-	-	-	-
I12-300003	Northern Division Connection	303500-Land & Land Rights-T&D	10130350	303.4	Y	337,428	353,388	-	-	-	-	-	-
	Northern Division Connection	331001-T&D Mains	10133100	331.4	Y	8,870,313	9,599,143	-	-	-	-	-	-
	Northern Division Connection	311540-Pumping Equipment Td	10131154	311.4	Y	304,397	330,997	-	-	-	-	-	-
	Northern Division Connection	311200-Pump Eqp Electric	10131120	311.2	Y	243,518	264,797	-	-	-	-	-	-
	Northern Division Connection	346190-Remote Control & Instrun	10134600	346.5	Y	60,879	66,199	-	-	-	-	-	-
	Northern Division Connection	330100-Elevated Tanks & Standpi	10133000	330.4	Y	3,043,970	3,309,966	-	-	-	-	-	-
IP-1202-9	Todds and Cleveland Rd Main Extension	331001-T&D Mains	10133100	331.4	Y	-	-	-	53,997	108,343	265,793	321,504	323,578
	Todds and Cleveland Rd Main Extension	335000-Hydrants	10133500	335.4	Y	-	-	-	1,385	2,778	6,815	8,244	8,297
IP-1202-10	KRS Clearwell Improvements (332)	304300-Struct & Imp-Treatment	10130430	304.3	Y	-	-	-	13,226	31,807	87,394	248,728	268,828
IP-1202-11	I-75 Main Extension	331001-T&D Mains	10133100	331.4	Y	-	-	-	28,309	82,489	111,329	140,356	176,273
	I-75 Main Extension	335000-Hydrants	10133500	335.4	Y	-	-	-	726	2,115	2,855	3,599	4,520
IP-1202-13	Greenwich Rd Main Extension	331001-T&D Mains	10133100	331.4	Y	-	-	-	28,309	82,489	137,019	137,902	245,913
	Greenwich Rd Main Extension	335000-Hydrants	10133500	335.4	Y	-	-	-	726	2,115	3,513	3,536	6,305
IP-1202-16	North Upper St Main Replacement (343)	331001-T&D Mains	10133100	331.4	Y	-	-	-	25,406	74,029	99,911	100,555	193,419
	North Upper St Main Replacement (343)	333000-Services	10133300	333.4	Y	-	-	-	2,904	8,460	11,418	11,492	22,105
	North Upper St Main Replacement (343)	335000-Hydrants	10133500	335.4	Y	-	-	-	726	2,115	2,855	2,873	5,526
IP-1202-20	KY Major Highway	331001-T&D Mains	10133100	331.4	Y	-	-	-	25,406	50,975	99,763	148,866	149,825
	KY Major Highway	333000-Services	10133300	333.4	Y	-	-	-	2,904	5,826	11,402	17,013	17,123
	KY Major Highway	335000-Hydrants	10133500	335.4	Y	-	-	-	726	1,456	2,850	4,253	4,281
IP-1202-23	RRS Carbon and Pre-Chlorine Feed	304300-Struct & Imp-Treatment	10130430	304.3	Y	-	-	-	2,645	5,308	7,987	10,684	10,753
	RRS Carbon and Pre-Chlorine Feed	311000-Pumping Equipment	10131120	311.2	Y	-	-	-	2,645	5,308	7,987	10,684	10,753
	RRS Carbon and Pre-Chlorine Feed	311200-Pump Eqp Electric	10131120	311.2	Y	-	-	-	2,645	5,308	7,987	10,684	10,753
	RRS Carbon and Pre-Chlorine Feed	320100-Wt Equip Non-Media	10132010	320.3	Y	-	-	-	5,290	10,615	15,974	21,368	21,506
IP-1202-27	KRS Hydrotreater Valve & Flow Meter	334100-Meters	10133410	334.4	Y	-	-	-	-	1,846	12,022	12,102	21,718
	KRS Hydrotreater Valve & Flow Meter	334200-Meter Installations	10133420	334.4	Y	-	-	-	-	1,318	8,587	8,645	15,513
	KRS Hydrotreater Valve & Flow Meter	334300-Meter Vaults	10133410	334.4	Y	-	-	-	-	2,109	13,740	13,831	24,821
IP-1202-39	Pump Efficiency Repl	311000-Pumping Equipment	10131120	311.2	Y	-	-	-	-	-	-	12,000	32,000
	Pump Efficiency Repl	311200-Pump Eqp Electric	10131120	311.2	Y	-	-	-	-	-	-	9,000	24,000
	Pump Efficiency Repl	339300-Other P/E-Treatment	10133930	339.3	Y	-	-	-	-	-	-	3,000	8,000
	Pump Efficiency Repl	346190-Remote Control & Instrun	10134600	346.5	Y	-	-	-	-	-	-	3,000	8,000
	Pump Efficiency Repl	347000-Misc Equipment	10134700	347.5	Y	-	-	-	-	-	-	3,000	8,000

Kentucky American Water
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		Jun-14	Jul-14	Oct-Dec 2012 Net Change	2013 Net Change	2014 Net Change	Base Per. as of 31-Mar-13	Forecast Per. 13-Month Avg Jul-13 -Jul-14
Workpaper:	W/P - 1-3	$ 3,985,200	$ 5,769,198	$ 7,701,484	$ (14,746,745)	$ 2,200,432	$ 11,962,256	$ 6,759,272
Excel :	Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Bal CWIP AFU	$ 3,592,019	$ 5,352,401	$ 9,007,043	$ (14,839,773)	$ 2,200,432	$ 11,678,620	$ 6,403,611

FP#	Project Description	JDE / Utility Plant Account	SAP GL Acct	NARUC Account	AFUDC?	Jun-14	Jul-14	Oct-Dec 2012 Net Change	2013 Net Change	2014 Net Change	Base Per. as of 31-Mar-13	Forecast Per. 13-Month Avg Jul-13 -Jul-14
D12-**01-P	Projects Funded by Others	331001-T&D Mains	10133100	331.4	N	$ 353,863	$ 375,117	$ (125,313)	$ 83,725	$ -	$ 255,272	$ 320,095.18
	Projects Funded by Others	335000-Hydrants	10133500	335.4	N	$ 39,318	$ 41,680	$ (15,633)	$ 9,303	$ -	$ 28,364	$ 35,566.13
	Projects Funded by Others	333000-Services	10133300	333.4	N	$ -	$ -	$ (55,037)	$ -	$ -	$ -	$ -
	Projects Funded by Others	334100-Meters	10133410	334.4	N	$ -	$ -	$ (1,861)	$ -	$ -	$ -	$ -
	Projects Funded by Others	334200-Meter Installations	10133420	334.4	N	$ -	$ -	$ (34,012)	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	
R12-**A1	Mains - New	331001-T&D Mains	10133100	331.4	Y	$ 57,779	$ 89,294	$ 823,046	$ (814,130)	$ 4,351	$ -	$ 46,946.31
								$ -	$ -	$ -	$ -	
R12-**B1	Mains - Replaced / Restored	331001-T&D Mains	10133100	331.4	Y	$ 367,586	$ 426,942	$ 583,624	$ (471,902)	$ (24,747)	$ 82,829	$ 285,124.76
	Mains - Replaced / Restored	333000-Services	10133300	333.4	Y	$ 36,759	$ 42,694	$ 68,522	$ (47,190)	$ (2,475)	$ 8,283	$ 28,512.48
	Mains - Replaced / Restored	334100-Meters	10133410	334.4	Y	$ 27,569	$ 32,021	$ 51,392	$ (35,393)	$ (1,856)	$ 6,212	$ 21,384.36
	Mains - Replaced / Restored	335000-Hydrants	10133500	335.4	Y	$ 27,569	$ 32,021	$ 48,880	$ (35,393)	$ (1,856)	$ 6,212	$ 21,384.36
								$ -	$ -	$ -	$ -	
R12-**C1	Mains - Unscheduled	331001-T&D Mains	10133100	331.4	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	
R12-**D1	Mains - Relocated	331001-T&D Mains	10133100	331.4	Y	$ 66,182	$ 115,346	$ 340,200	$ (271,184)	$ 1,891	$ -	$ 79,345.25
	Mains - Relocated	335000-Hydrants	10133500	335.4	Y	$ 7,354	$ 12,816	$ 37,800	$ (30,132)	$ 210	$ -	$ 8,816.14
								$ -	$ -	$ -	$ -	
R12-**E1	Hydrants, Valves, and Manholes - New	335000-Hydrants	10133500	335.4	N	$ -	$ -	$ (12,901)	$ -	$ -	$ -	$ -
	Hydrants, Valves, and Manholes - New	331001-T&D Mains	10133100	331.4	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	
R12-**F1	Hydrants, Valves, and Manholes - Replaced	335000-Hydrants	10133500	335.4	N	$ -	$ -	$ 228	$ -	$ -	$ -	$ -
	Hydrants, Valves, and Manholes - Replaced	331001-T&D Mains	10133100	331.4	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	
R12-**G1	Services and Laterals - New	333000-Services	10133300	333.4	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	
R12-**H1	Services and Laterals - Replaced	333000-Services	10133300	333.4	N	$ -	$ -	$ (2,609)	$ -	$ -	$ -	$ -
	Services and Laterals - Replaced	334200-Meter Installations	10133420	334.4	N	$ -	$ -	$ (962)	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	
R12-**I1	Meters - New	334100-Meters	10133410	334.4	N	$ -	$ -	$ (168,382)	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	
R12-**J1	Meters - Replaced	334100-Meters	10133410	334.4	N	$ -	$ -	$ (2,523)	$ -	$ -	$ -	$ -
	Meters - Replaced	334200-Meter Installations	10133420	334.4	N	$ -	$ -	$ 314	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	
R12-**K1	ITS Equipment and Systems	334100-Meters	10133410	334.4	N	$ -	$ -	$ (8,111)	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	
R12-**L1	SCADA Equipment and Systems	346190-Remote Control & Instrum	10134600	346.5	Y	$ 42,021	$ 84,042	$ 602,616	$ (285,544)	$ (687,506)	$ 924,274	$ 424,008.15
								$ -	$ -	$ -	$ -	
R12-**M1	Security Equipment and Systems	304500-Struct & Imp-General	10130450	304.5	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	
R12-**N1	Offices and Operations Centers	304500-Struct & Imp-General	10130450	304.5	N	$ -	$ -	$ (68,165)	$ -	$ -	$ -	$ -
	Offices and Operations Centers	304100-Struct & Imp-Supply	10130410	304.2	N	$ -	$ -	$ (7,489)	$ -	$ -	$ -	$ -
	Offices and Operations Centers	340100-Office Furniture & Equip	10134010	340.5	N	$ -	$ -	$ (131,066)	$ -	$ -	$ -	$ -
	Offices and Operations Centers	340300-Computer Software	10134010	340.5	N	$ -	$ -	$ (7,894)	$ -	$ -	$ -	$ -
	Offices and Operations Centers	346100-Comm Equip Non-Telephc	10134600	346.5	N	$ -	$ -	$ (93,467)	$ -	$ -	$ -	$ -
	Offices and Operations Centers	347000-Misc Equipment	10134700	347.5	N	$ -	$ -	$ (12,332)	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	
R12-**O1	Vehicles	341100-Trans Equip Lt Duty Trks	10134100	341.5	N	$ -	$ -	$ 206	$ -	$ -	$ -	$ -
	Vehicles	341200-Trans Equip Hvy Duty Trks	10134100	341.5	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Vehicles	341300-Trans Equip Auto Car	10134100	341.5	N	$ -	$ -	$ 162	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	
R12-**P1	Tools and Equipment	343000-Tools,Shop,Garage Equip	10134300	343.5	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	
R12-**Q1	Process Plant Facilities and Equipment	304300-Struct & Imp-Treatment	10130430	304.3	Y	$ 142,639	$ 156,949	$ 205,699	$ (197,296)	$ 48,403	$ 16,598	$ 93,261.26
	Process Plant Facilities and Equipment	306000-Lake, River & Other Intake	10130600	306.2	Y	$ 53,490	$ 58,856	$ 75,643	$ (73,986)	$ 18,151	$ 6,224	$ 34,972.97
	Process Plant Facilities and Equipment	311000-Pumping Equipment	10131120	311.2	Y	$ 89,150	$ 98,093	$ 113,819	$ (123,310)	$ 30,252	$ 10,374	$ 58,288.29
	Process Plant Facilities and Equipment	320100-Wt Equip Non-Media	10132010	320.3	Y	$ 35,660	$ 39,237	$ 51,425	$ (49,324)	$ 12,101	$ 4,150	$ 23,315.32
	Process Plant Facilities and Equipment	330200-Ground Level Tanks	10133000	330.4	Y	$ 35,660	$ 39,237	$ (152,278)	$ (49,324)	$ 12,101	$ 4,150	$ 23,315.32
	Process Plant Facilities and Equipment	344000-Laboratory Equipment	10134400	344.5	Y	$ -	$ -	$ (7,157)	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	
R12-**S1	Engineering Studies	339600-Other P/E-Cps	10133910	339.1	Y	$ -	$ -	$ 49,422	$ (413,982)	$ -	$ 49,422	$ 16,484.77
	Engineering Studies	348000-Other Tangible Property	10134800	348.5	Y	$ (0)	$ (0)	$ 8,722	$ (230,238)	$ -	$ 8,722	$ 2,909.08
								$ -	$ -	$ -	$ -	
T12-0102-P	Business Transformation 2010 - 2014	340200-Comp & Periph Equip	10134010	340.5	Y	$ 60,809	$ 60,809	$ 1,084,978	$ (4,563,205)	$ (233,400)	$ 5,740,156	$ 204,440.18

Kentucky American Water
Case No. 2012-00520
CWIP Balance by Month, September 2012 - December 2014

Automatically calculates: Prior month balance + Capital Additions - Placed in Service Amounts

		Jun-14	Jul-14	Oct-Dec 2012 Net Change	2013 Net Change	2014 Net Change	Base Per. as of 31-Mar-13	Forecast Per. 13-Month Avg Jul-13 -Jul-14
Workpaper:	W/P - 1-3	$ 3,985,200	$ 5,769,198	$ 7,701,484	$ (14,746,745)	$ 2,200,432	$ 11,962,256	$ 6,759,272
Excel :	Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Bal CWIP	AFU $ 3,592,019	$ 5,352,401	$ 9,007,043	$ (14,839,773)	$ 2,200,432	$ 11,678,620	$ 6,403,611

FP#	Project Description	JDE / Utility Plant Account	SAP GL Acct	NARUC Account	AFUDC?	Jun-14	Jul-14	Oct-Dec 2012 Net Change	2013 Net Change	2014 Net Change	Base Per. as of 31-Mar-13	Forecast Per. 13-Month Avg Jul-13 -Jul-14
	Business Transformation 2010 - 2014	340300-Computer Software	10134010	340.5	Y	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	
T12-0103-P	Business Transformation 2010 - 2014	340315-Comp Software Specia	10134010	340.5	Y	$ (60,809)	$ (60,809)	$ (140,874)	$ (206,417)	$ -	$ (57,447)	$ (60,809.41)
								$ -	$ -	$ -	$ -	
I12-020001	New WTP On Pool 3 of Kentucky	331001-T&D Mains	10133100	331.4	N	$ -	$ -	$ (5,484)	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	
I12-020027	Russell Cave Rd Main Extension	330200-Ground Level Tanks	10133000	330.4	N	$ -	$ -	$ (553,227)	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	
I12-020009	US 25 Relocation	331001-T&D Mains	10133100	331.4	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	US 25 Relocation	333000-Services	10133300	333.4	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	US 25 Relocation	335000-Hydrants	10133500	335.4	N	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	
I12-020010	Leestown Road	331001-T&D Mains	10133100	331.4	Y	$ -	$ -	$ 322,267	$ (1,318,056)	$ -	$ 1,530,556	$ -
	Leestown Road	333000-Services	10133300	333.4	Y	$ -	$ -	$ 37,914	$ (37,914)	$ -	$ 62,914	$ -
	Leestown Road	335000-Hydrants	10133500	335.4	Y	$ -	$ -	$ 18,957	$ (18,957)	$ -	$ 31,457	$ -
								$ -	$ -	$ -	$ -	
I12-020025	Pump Efficiency Replacement	311000-Pumping Equipment	10131120	311.2	Y	$ -	$ -	$ 596,396	$ (627,775)	$ -	$ 810,414	$ -
	Pump Efficiency Replacement	311200-Pump Eqp Electric	10131120	311.2	Y	$ -	$ -	$ 447,297	$ (501,498)	$ -	$ 638,477	$ -
	Pump Efficiency Replacement	339300-Other P/E-Treatment	10133930	339.3	Y	$ -	$ -	$ 149,099	$ (154,804)	$ -	$ 200,464	$ -
	Pump Efficiency Replacement	346190-Remote Control & Instrum	10134600	346.5	Y	$ -	$ -	$ 149,099	$ (150,240)	$ -	$ 195,900	$ -
	Pump Efficiency Replacement	347000-Misc Equipment	10134700	347.5	Y	$ -	$ -	$ 149,099	$ (156,516)	$ -	$ 202,176	$ -
								$ -	$ -	$ -	$ -	
I12-300003	Northern Division Connection	303500-Land & Land Rights-T&D	10130350	303.4	Y	$ -	$ -	$ 49,372	$ (204,162)	$ -	$ 162,462	$ 119,019.58
	Northern Division Connection	331001-T&D Mains	10133100	331.4	Y	$ -	$ -	$ 2,254,636	$ (2,784,472)	$ -	$ 880,200	$ 2,920,258.83
	Northern Division Connection	311540-Pumping Equipment Td	10131154	311.4	Y	$ -	$ -	$ 82,286	$ (82,286)	$ -	$ 12,787	$ 99,141.45
	Northern Division Connection	311200-Pump Eqp Electric	10131120	311.2	Y	$ -	$ -	$ 65,829	$ (65,829)	$ -	$ 10,230	$ 79,313.16
	Northern Division Connection	346190-Remote Control & Instrum	10134600	346.5	Y	$ -	$ -	$ 16,457	$ (16,457)	$ -	$ 2,557	$ 19,828.29
	Northern Division Connection	330100-Elevated Tanks & Standpip	10133000	330.4	Y	$ -	$ -	$ 822,860	$ (822,860)	$ -	$ 127,870	$ 991,414.52
								$ -	$ -	$ -	$ -	
IP-1202-9	Todds and Cleveland Rd Main Extension	331001-T&D Mains	10133100	331.4	Y	$ 381,409	$ 645,121	$ -	$ -	$ -	$ -	$ 161,518.95
	Todds and Cleveland Rd Main Extension	335000-Hydrants	10133500	335.4	Y	$ 9,780	$ 16,542	$ -	$ -	$ -	$ -	$ 4,141.51
								$ -	$ -	$ -	$ -	
IP-1202-10	KRS Clearwell Improvements (332)	304300-Struct & Imp-Treatment	10130430	304.3	Y	$ 327,735	$ 597,800	$ -	$ -	$ 3,000,000	$ -	$ 121,193.69
								$ -	$ -	$ -	$ -	
IP-1202-11	I-75 Main Extension	331001-T&D Mains	10133100	331.4	Y	$ 308,874	$ 571,929	$ -	$ -	$ -	$ -	$ 109,196.93
	I-75 Main Extension	335000-Hydrants	10133500	335.4	Y	$ 7,920	$ 14,665	$ -	$ -	$ -	$ -	$ 2,799.92
								$ -	$ -	$ -	$ -	
IP-1202-13	Greenwich Rd Main Extension	331001-T&D Mains	10133100	331.4	Y	$ 483,063	$ 721,747	$ -	$ -	$ -	$ -	$ 141,264.68
	Greenwich Rd Main Extension	335000-Hydrants	10133500	335.4	Y	$ 12,386	$ 18,506	$ -	$ -	$ -	$ -	$ 3,622.17
								$ -	$ -	$ -	$ -	
IP-1202-16	North Upper St Main Replacement (343)	331001-T&D Mains	10133100	331.4	Y	$ 335,340	$ 515,064	$ -	$ -	$ -	$ -	$ 103,363.28
	North Upper St Main Replacement (343)	333000-Services	10133300	333.4	Y	$ 38,325	$ 58,864	$ -	$ -	$ -	$ -	$ 11,812.95
	North Upper St Main Replacement (343)	335000-Hydrants	10133500	335.4	Y	$ 9,581	$ 14,716	$ -	$ -	$ -	$ -	$ 2,953.24
								$ -	$ -	$ -	$ -	
IP-1202-20	KY Major Highway	331001-T&D Mains	10133100	331.4	Y	$ 200,819	$ 321,302	$ -	$ -	$ -	$ -	$ 76,688.84
	KY Major Highway	333000-Services	10133300	333.4	Y	$ 22,951	$ 36,720	$ -	$ -	$ -	$ -	$ 8,764.44
	KY Major Highway	335000-Hydrants	10133500	335.4	Y	$ 5,738	$ 9,180	$ -	$ -	$ -	$ -	$ 2,191.11
								$ -	$ -	$ -	$ -	
IP-1202-23	RRS Carbon and Pre-Chlorine Feed	304300-Struct & Imp-Treatment	10130430	304.3	Y	$ 21,899	$ 50,539	$ -	$ -	$ 4,962	$ -	$ 8,447.26
	RRS Carbon and Pre-Chlorine Feed	311000-Pumping Equipment	10131120	311.2	Y	$ 21,899	$ 50,539	$ -	$ -	$ 4,962	$ -	$ 8,447.26
	RRS Carbon and Pre-Chlorine Feed	311200-Pump Eqp Electric	10131120	311.2	Y	$ 21,899	$ 50,539	$ -	$ -	$ 4,962	$ -	$ 8,447.26
	RRS Carbon and Pre-Chlorine Feed	320100-Wt Equip Non-Media	10132010	320.3	Y	$ 43,797	$ 101,079	$ -	$ -	$ 9,925	$ -	$ 16,894.52
								$ -	$ -	$ -	$ -	
IP-1202-27	KRS Hydrotreater Valve & Flow Meter	334100-Meters	10133410	334.4	Y	$ 50,466	$ -	$ -	$ -	$ -	$ -	$ 7,550.33
	KRS Hydrotreater Valve & Flow Meter	334200-Meter Installations	10133420	334.4	Y	$ 36,047	$ -	$ -	$ -	$ -	$ -	$ 5,393.10
	KRS Hydrotreater Valve & Flow Meter	334300-Meter Vaults	10133410	334.4	Y	$ 57,676	$ -	$ -	$ -	$ -	$ -	$ 8,628.95
								$ -	$ -	$ -	$ -	
IP-1202-39	Pump Efficiency Repl	311000-Pumping Equipment	10131120	311.2	Y	$ 82,000	$ 132,000	$ -	$ -	$ -	$ -	$ 19,846.15
	Pump Efficiency Repl	311200-Pump Eqp Electric	10131120	311.2	Y	$ 61,500	$ 99,000	$ -	$ -	$ -	$ -	$ 14,884.62
	Pump Efficiency Repl	339300-Other P/E-Treatment	10133930	339.3	Y	$ 20,500	$ 33,000	$ -	$ -	$ -	$ -	$ 4,961.54
	Pump Efficiency Repl	346190-Remote Control & Instrum	10134600	346.5	Y	$ 20,500	$ 33,000	$ -	$ -	$ -	$ -	$ 4,961.54
	Pump Efficiency Repl	347000-Misc Equipment	10134700	347.5	Y	$ 20,500	$ 33,000	$ -	$ -	$ -	$ -	$ 4,961.54

Kentucky American Water
Case No. 2012-00520
Accumulated Depreciation & COR Balances by Month, September 2012 - December 2014

Automatically calculates Accum. Depr. & COR: Prior Month Balance - Current Month Depr. & COR Expense + Retirements - Monthly Salvage Credit + Monthly Cost of Removal Debit

Workpaper #: W/P - 1-2

Excel Ref: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Bal Accum Dep&COR

	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13
Total Accum Life Dep & COR	$ (122,735,598)	$ (123,613,797)	$ (124,496,401)	$ (125,382,748)	$ (126,276,053)	$ (127,171,727)	$ (128,073,154)
Total Life Dep	$ (108,020,666)	$ (108,773,944)	$ (109,531,297)	$ (110,291,907)	$ (111,058,777)	$ (111,827,646)	$ (112,601,617)
Total COR	$ (14,714,933)	$ (14,839,853)	$ (14,965,104)	$ (15,090,841)	$ (15,217,276)	$ (15,344,081)	$ (15,471,537)

Monthly Salvage Credit	Monthly COR Debit	Utility	Account	Util. Plant Account	SAP G/L Account	NARUC Acct	Accum Dep Bal Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13
$ -	$ -	Water	301000-Organization	301000	10130100	301.1	0	0	0	0	0	0	0
$ -	$ -	Water	302000-Franchises	302000	10130200	302.1	0	0	0	0	0	0	0
$ -	$ -	Water	303200-Land & Land Rights-Supply	303200	10130320	303.2	0	0	0	0	0	0	0
$ -	$ -	Water	303300-Land & Land Rights-Pumpi	303300	10130330	303.2	0	0	0	0	0	0	0
$ -	$ -	Water	303400-Land & Land Rights-Treatm	303400	10130340	303.3	0	0	0	0	0	0	0
$ -	$ -	Water	303500-Land & Land Rights-T&D	303500	10130350	303.4	0	0	0	0	0	0	0
$ -	$ 16.52	Water	304100-Struct & Imp-Supply	304100	10130410	304.2	(603,991)	(621,581)	(639,190)	(656,799)	(674,407)	(692,015)	(709,622)
$ -	$ 213.33	Water	304200-Struct & Imp-Pumping	304200	10130420	304.2	(2,041,541)	(2,061,762)	(2,081,978)	(2,102,189)	(2,122,393)	(2,142,591)	(2,162,784)
$ (0)	$ 668.68	Water	304300-Struct & Imp-Treatment	304300	10130430	304.3	(2,764,389)	(2,822,521)	(2,880,641)	(2,938,751)	(2,997,156)	(3,055,812)	(3,114,701)
$ -	$ -	Water	304400-Struct & Imp-T&D	304400	10130440	304.4	(580,225)	(582,231)	(584,236)	(586,242)	(588,248)	(590,253)	(592,259)
$ (12)	$ 101.02	Water	304500-Struct & Imp-General	304500	10130450	304.5	(203,867)	(213,465)	(223,102)	(232,885)	(242,662)	(252,439)	(262,216)
$ -	$ 72.36	Water	304600-Struct & Imp-Offices	304600	10130450	304.5	(1,353,746)	(1,362,967)	(1,372,187)	(1,381,407)	(1,390,626)	(1,399,845)	(1,409,063)
$ -	$ -	Water	304610-Struct & Imp-HVAC	304610	10130450	304.5	(1,041)	(1,041)	(1,041)	(1,041)	(1,041)	(1,041)	(1,041)
$ -	$ -	Water	304700-Struct & Imp-Store,Shop,G	304700	10130450	304.5	(371,402)	(374,228)	(377,054)	(379,879)	(382,704)	(385,529)	(388,354)
$ -	$ 42.57	Water	304800-Struct & Imp-Misc	304800	10130450	304.5	(367,946)	(370,418)	(372,869)	(375,301)	(377,713)	(380,106)	(382,478)
$ -	$ 21.20	Water	305000-Collect & Impound Reservo	305000	10130500	305.2	(377,486)	(378,212)	(378,938)	(379,663)	(380,388)	(381,113)	(381,837)
$ -	$ 995.47	Water	306000-Lake, River & Other Intake:	306000	10130600	306.2	(304,376)	(315,395)	(326,413)	(337,434)	(348,534)	(359,702)	(370,933)
$ -	$ 32.68	Water	309000-Supply Mains	309000	10130900	309.2	(2,433,913)	(2,484,986)	(2,536,060)	(2,587,133)	(2,638,207)	(2,689,281)	(2,740,354)
$ -	$ 17.57	Water	310000-Power Generation Equip	310000	10131000	310.2	(452,457)	(459,642)	(466,825)	(474,005)	(481,183)	(488,358)	(495,530)
$ -	$ 1,333.97	Water	311200-Pump Eqp Electric	311200	10131120	311.2	(5,224,338)	(5,236,149)	(5,247,950)	(5,259,769)	(5,271,726)	(5,283,797)	(5,295,976)
$ -	$ 27.27	Water	311300-Pump Eqp Diesel	311300	10131130	311.2	(381,693)	(382,610)	(383,527)	(384,443)	(385,358)	(386,273)	(387,187)
$ -	$ -	Water	311400-Pump Eqp Hydraulic	311400	10131140	311.2	(8,848)	(8,862)	(8,877)	(8,892)	(8,906)	(8,921)	(8,936)
$ -	$ -	Water	311500-Pump Eqp Other	311500	10131150	311.2	(8)	(8)	(8)	(8)	(8)	(8)	(8)
$ -	$ 1,849.78	Water	311520-Pump Eqp-SOS & Pumping	311520	10131152	311.2	(805,694)	(829,540)	(853,377)	(877,205)	(901,025)	(924,836)	(948,638)
$ -	$ -	Water	311530-Pump Eqp Wtr Treatment	311530	10131153	311.3	242	242	242	242	242	242	242
$ -	$ 27.58	Water	311540-Pumping Equipment TD	311540	10131154	311.4	45,961	47,549	49,141	50,736	52,335	53,938	55,544
$ -	$ 1,185.78	Water	320100-WT Equip Non-Media	320100	10132010	320.3	(16,784,974)	(16,869,502)	(16,953,965)	(17,038,363)	(17,122,763)	(17,207,155)	(17,291,536)
$ -	$ -	Water	320200-WT Equip Filter Media	320200	10132010	320.3	(233,494)	(243,784)	(254,075)	(264,365)	(274,656)	(284,946)	(295,236)
$ -	$ 182.84	Water	330000-Dist Reservoirs & Standpip	330000	10133000	330.4	(275,945)	(278,212)	(280,480)	(282,747)	(285,015)	(287,282)	(289,550)
$ -	$ 130.74	Water	330100-Elevated Tanks & Standpip	330100	10133000	330.4	(3,742,644)	(3,758,531)	(3,774,415)	(3,790,297)	(3,806,177)	(3,822,055)	(3,837,930)
$ -	$ -	Water	330200-Ground Level Tanks	330200	10133000	330.4	(98,112)	(101,191)	(104,270)	(107,583)	(111,517)	(115,482)	(119,476)
$ -	$ -	Water	330400-Clearwell	330400	10133000	330.4	(85,133)	(88,747)	(92,362)	(95,976)	(99,591)	(103,205)	(106,820)
$ (9)	$ 2,289.84	Water	331001-TD Mains Not Classified	331001	10133100	331.4	(33,814,593)	(34,009,989)	(34,205,566)	(34,401,921)	(34,599,025)	(34,797,027)	(34,997,153)
$ (3)	$ 740.62	Water	331100-TD Mains 4in & Less	331100	10133100	331.4	(832,930)	(839,903)	(846,876)	(853,849)	(860,823)	(867,796)	(874,769)
$ (6)	$ 2,108.39	Water	331200-TD Mains 6in to 8in	331200	10133100	331.4	(1,212,150)	(1,238,846)	(1,265,542)	(1,292,237)	(1,318,933)	(1,345,629)	(1,372,325)
$ -	$ 74.80	Water	331300-TD Mains 10in to 16in	331300	10133100	331.4	(421,284)	(433,793)	(446,303)	(458,812)	(471,322)	(483,831)	(496,341)
$ -	$ 268.00	Water	331400-TD Mains 18in & Grtr	331400	10133100	331.4	(3,042,667)	(3,143,079)	(3,243,491)	(3,343,903)	(3,444,315)	(3,544,727)	(3,645,139)
$ (592)	$ 8,380.58	Water	333000-Services	333000	10133300	333.4	(19,181,683)	(19,273,965)	(19,366,697)	(19,459,967)	(19,553,706)	(19,647,789)	(19,742,326)
$ (3,037)	$ 7,739.95	Water	334100-Meters	334100	10133410	334.4	816,483	831,133	844,091	855,763	863,769	871,726	878,933
$ (234)	$ 72.04	Water	334110-Meters Bronze Case	334110	10133410	334.4	(340,529)	(345,594)	(350,658)	(355,721)	(360,784)	(365,846)	(370,907)
$ (961)	$ 1,242.67	Water	334120-Meters Plastic Case	334120	10133410	334.4	147,318	159,224	171,165	183,141	195,152	207,197	219,277
$ (730)	$ 3,550.05	Water	334130-Meters Other	334130	10133410	334.4	(194,904)	(180,303)	(165,635)	(150,901)	(136,101)	(121,233)	(106,300)
$ -	$ -	Water	334131-Meter Reading Units	334131	10133410	334.4	(38,256)	(39,015)	(39,775)	(40,534)	(41,293)	(42,052)	(42,811)
$ (262)	$ 4,788.03	Water	334200-Meter Installations	334200	10133420	334.4	(5,833,308)	(5,870,860)	(5,908,412)	(5,946,041)	(5,983,669)	(6,021,296)	(6,058,922)
$ -	$ 2,407.95	Water	334300-Meter Vaults	334300	10133410	334.4	64,839	66,133	67,428	68,723	70,018	71,313	72,608
$ -	$ 2,371.59	Water	335000-Hydrants	335000	10133500	335.4	(3,555,031)	(3,568,897)	(3,582,804)	(3,596,783)	(3,610,816)	(3,624,917)	(3,639,129)
$ -	$ -	Water	339100-Other P/E-Intangible	339100	10133910	339.1	(121,452)	(121,587)	(121,722)	(121,858)	(121,993)	(122,129)	(122,264)
$ -	$ -	Water	339600-Other P/E-CPS	339600	10133910	339.1	(135,951)	(138,688)	(141,425)	(144,162)	(146,899)	(149,636)	(152,373)
$ -	$ -	Water	340100-Office Furniture & Equip	340100	10134010	340.5	(543,040)	(542,244)	(541,984)	(541,713)	(541,432)	(541,140)	(540,837)
$ -	$ -	Water	340210-Comp & Periph Mainframe	340210	10134010	340.5	(64,811)	(65,991)	(67,163)	(68,329)	(69,487)	(70,638)	(71,781)
$ (9)	$ (1.05)	Water	340220-Comp & Periph Personal	340220	10134010	340.5	(1,189,899)	(1,179,530)	(1,169,025)	(1,158,386)	(1,147,612)	(1,136,704)	(1,125,660)
$ -	$ 87.39	Water	340230-Comp & Periph Other	340230	10134010	340.5	(220,062)	(231,383)	(242,689)	(253,980)	(265,255)	(276,515)	(287,759)
$ -	$ -	Water	340240-Comp & Periph Capital Lea	340240	10134010	340.5	0	0	0	0	0	0	0

Kentucky American Water
Case No. 2012-00520
Accumulated Depreciation & COR Balances by Month, September 2012 - December 2014

Automatically calculates Accum. Depr. & COR: Prior Month Balance - Current Month Depr. & COR Expense + Retirements - Monthly Salvage Credit + Monthly Cost of Removal Debit

Workpaper #: W/P - 1-2

Excel Ref: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Bal Accum Dep&COR

	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13
Total Accum Life Dep & COR	$ (122,735,598)	$ (123,613,797)	$ (124,496,401)	$ (125,382,748)	$ (126,276,053)	$ (127,171,727)	$ (128,073,154)
Total Life Dep	$ (108,020,666)	$ (108,773,944)	$ (109,531,297)	$ (110,291,907)	$ (111,058,777)	$ (111,827,646)	$ (112,601,617)
Total COR	$ (14,714,933)	$ (14,839,853)	$ (14,965,104)	$ (15,090,841)	$ (15,217,276)	$ (15,344,081)	$ (15,471,537)

Monthly Salvage Credit	Monthly COR Debit	Utility	Account	Util. Plant Account	SAP G/L Account	NARUC Acct	Accum Dep Bal Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13
$ -	$ -	Water	340300-Computer Software	340300	10134010	340.5	(4,841,945)	(4,825,223)	(4,808,395)	(4,791,330)	(4,774,028)	(4,756,488)	(4,738,712)
$ -	$ -	Water	340320-Comp Software Personal	340320	10134010	340.5	(375,396)	(368,367)	(361,337)	(354,308)	(347,279)	(340,249)	(333,220)
$ -	$ -	Water	340325-Comp Software Customize	340325	10134010	340.5	(333,728)	(345,398)	(357,068)	(368,739)	(380,409)	(392,079)	(403,750)
$ -	$ -	Water	340330-Comp Software Other	340330	10134010	340.5	(704,670)	(706,864)	(709,058)	(711,252)	(713,446)	(715,640)	(717,834)
$ -	$ -	Water	340500-Other Office Equipment	340500	10134010	340.5	(70,690)	(70,314)	(69,935)	(69,554)	(69,170)	(68,782)	(68,392)
$ (3,986)	$ -	Water	341100-Trans Equip Lt Duty Trks	341100	10134100	341.5	(1,147,630)	(1,128,987)	(1,110,355)	(1,091,704)	(1,073,051)	(1,054,365)	(1,035,646)
$ (529)	$ -	Water	341200-Trans Equip Hvy Duty Trks	341200	10134100	341.5	(712,549)	(710,777)	(709,062)	(707,354)	(705,681)	(703,997)	(702,302)
$ (338)	$ -	Water	341300-Trans Equip Autos	341300	10134100	341.5	(222,740)	(220,296)	(218,081)	(215,918)	(213,904)	(211,868)	(209,812)
$ (413)	$ -	Water	341400-Trans Equip Other	341400	10134100	341.5	(189,922)	(191,796)	(193,664)	(195,526)	(197,382)	(199,233)	(201,077)
$ -	$ -	Water	342000-Stores Equipment	342000	10134200	342.5	(34,332)	(34,375)	(34,418)	(34,461)	(34,504)	(34,547)	(34,590)
$ -	$ 29.59	Water	343000-Tools,Shop,Garage Equip	343000	10134300	343.5	(1,088,211)	(1,094,312)	(1,100,435)	(1,106,803)	(1,113,540)	(1,120,276)	(1,127,054)
$ -	$ 381.46	Water	344000-Laboratory Equipment	344000	10134400	344.5	(724,442)	(725,872)	(727,288)	(728,729)	(730,155)	(731,566)	(732,963)
$ (236)	$ 14.59	Water	345000-Power Operated Equipmer	345000	10134500	345.5	(911,623)	(912,967)	(914,309)	(915,648)	(916,985)	(918,318)	(919,649)
$ -	$ 88.02	Water	346100-Comm Equip Non-Telepho	346100	10134600	346.5	(1,193,177)	(1,204,843)	(1,217,004)	(1,229,139)	(1,241,250)	(1,253,336)	(1,265,396)
$ -	$ 295.28	Water	346190-Remote Control & Instrum	346190	10134600	346.5	(104,367)	(112,583)	(120,799)	(129,015)	(137,230)	(145,446)	(153,662)
$ -	$ -	Water	346200-Comm Equip Telephone	346200	10134600	346.5	(64,943)	(66,696)	(68,449)	(70,202)	(71,955)	(73,708)	(75,462)
$ -	$ 28.81	Water	347000-Misc Equipment	347000	10134700	347.5	(601,117)	(606,016)	(610,963)	(615,906)	(620,846)	(625,782)	(630,715)
$ -	$ -	Water	348000-Other Tangible Property	348000	10134800	348.5	(252,321)	(249,623)	(246,925)	(244,228)	(241,530)	(238,832)	(236,135)
$ -	$ -	Water	354200-WW Struct & Imp Collectio	354200	10135420	354.2	3,168	3,168	3,168	3,168	3,168	3,168	3,168
		Water	340315-Comp Software Specia	340315	10134010	340.5	0	(76,687)	(154,482)	(233,228)	(312,923)	(393,846)	(477,295)
		Water	339300-Other P/E-Treatment	339300	10133930	339.3	0	0	0	0	0	0	0
$ (11,358)	$ 43,878				**Total Unadjusted Balances**			**(123,613,797)**	**(124,496,401)**	**(125,382,748)**	**(126,276,053)**	**(127,171,727)**	**(128,073,154)**

Kentucky American Water
Case No. 2012-00520
Accumulated Depreciation & COR Balances by Month, September 2012 - December 2014

Automatically calculates Accum. Depr. & COR: Prior Month Balance - Current Month Depr. & COR Expense + Retirements - Monthly Salvage Credit + Monthly Cost of Removal Debit

Workpaper #: W/P - 1-2

Excel Ref: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Bal Accum Dep&COR

	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13
Total Accum Life Dep & COR	$ (128,981,893)	$ (129,899,825)	$ (130,916,958)	$ (131,940,901)	$ (132,877,836)	$ (133,817,653)	$ (134,761,518)
Total Life Dep	$ (113,382,658)	$ (114,171,664)	$ (115,059,463)	$ (115,953,596)	$ (116,760,517)	$ (117,569,877)	$ (118,382,888)
Total COR	$ (15,599,235)	$ (15,728,161)	$ (15,857,495)	$ (15,987,305)	$ (16,117,320)	$ (16,247,776)	$ (16,378,630)

Monthly Salvage Credit	Monthly COR Debit	Utility	Account	Util. Plant Account	SAP G/L Account	NARUC Acct	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13
$ -	$ -	Water	301000-Organization	301000	10130100	301.1	0	0	0	0	0	0	0
$ -	$ -	Water	302000-Franchises	302000	10130200	302.1	0	0	0	0	0	0	0
$ -	$ -	Water	303200-Land & Land Rights-Supply	303200	10130320	303.2	0	0	0	0	0	0	0
$ -	$ -	Water	303300-Land & Land Rights-Pumpi	303300	10130330	303.2	0	0	0	0	0	0	0
$ -	$ -	Water	303400-Land & Land Rights-Treatm	303400	10130340	303.3	0	0	0	0	0	0	0
$ -	$ -	Water	303500-Land & Land Rights-T&D	303500	10130350	303.4	0	0	0	0	0	0	0
$ -	$ 16.52	Water	304100-Struct & Imp-Supply	304100	10130410	304.2	(727,229)	(744,835)	(762,441)	(780,047)	(797,652)	(815,256)	(832,860)
$ -	$ 213.33	Water	304200-Struct & Imp-Pumping	304200	10130420	304.2	(2,182,971)	(2,203,152)	(2,223,327)	(2,243,496)	(2,263,659)	(2,283,817)	(2,303,968)
$ (0)	$ 668.68	Water	304300-Struct & Imp-Treatment	304300	10130430	304.3	(3,173,578)	(3,232,446)	(3,291,342)	(3,350,417)	(3,409,532)	(3,468,894)	(3,528,426)
$ -	$ -	Water	304400-Struct & Imp-T&D	304400	10130440	304.4	(594,264)	(596,270)	(598,276)	(600,281)	(602,287)	(604,293)	(606,298)
$ (12)	$ 101.02	Water	304500-Struct & Imp-General	304500	10130450	304.5	(271,994)	(281,771)	(291,600)	(301,481)	(311,479)	(321,541)	(331,733)
$ -	$ 72.36	Water	304600-Struct & Imp-Offices	304600	10130450	304.5	(1,418,280)	(1,427,497)	(1,436,713)	(1,445,929)	(1,455,145)	(1,464,359)	(1,473,573)
$ -	$ -	Water	304610-Struct & Imp-HVAC	304610	10130450	304.5	(1,041)	(1,041)	(1,041)	(1,041)	(1,041)	(1,041)	(1,041)
$ -	$ -	Water	304700-Struct & Imp-Store,Shop,G	304700	10130450	304.5	(391,178)	(394,002)	(396,825)	(399,649)	(402,471)	(405,294)	(408,116)
$ -	$ 42.57	Water	304800-Struct & Imp-Misc	304800	10130450	304.5	(384,831)	(387,164)	(389,478)	(391,771)	(394,045)	(396,299)	(398,534)
$ -	$ 21.20	Water	305000-Collect & Impound Reservo	305000	10130500	305.2	(382,561)	(383,284)	(384,008)	(384,730)	(385,452)	(386,174)	(386,896)
$ -	$ 995.47	Water	306000-Lake, River & Other Intake:	306000	10130600	306.2	(382,164)	(393,394)	(404,635)	(415,924)	(427,227)	(438,596)	(450,012)
$ -	$ 32.68	Water	309000-Supply Mains	309000	10130900	309.2	(2,791,428)	(2,842,501)	(2,893,575)	(2,944,648)	(2,995,721)	(3,046,795)	(3,097,868)
$ -	$ 17.57	Water	310000-Power Generation Equip	310000	10131000	310.2	(502,699)	(509,866)	(517,031)	(524,193)	(531,352)	(538,508)	(545,662)
$ -	$ 1,333.97	Water	311200-Pump Eqp Electric	311200	10131120	311.2	(5,308,145)	(5,323,087)	(5,338,106)	(5,353,368)	(5,368,811)	(5,384,399)	(5,400,064)
$ -	$ 27.27	Water	311300-Pump Eqp Diesel	311300	10131130	311.2	(388,100)	(389,012)	(389,924)	(390,835)	(391,745)	(392,654)	(393,563)
$ -	$ -	Water	311400-Pump Eqp Hydraulic	311400	10131140	311.2	(8,950)	(8,965)	(8,980)	(8,994)	(9,009)	(9,024)	(9,038)
$ -	$ -	Water	311500-Pump Eqp Other	311500	10131150	311.2	(8)	(8)	(8)	(8)	(8)	(8)	(8)
$ -	$ 1,849.78	Water	311520-Pump Eqp-SOS & Pumping	311520	10131152	311.2	(972,432)	(996,217)	(1,019,993)	(1,043,760)	(1,067,519)	(1,091,269)	(1,115,010)
$ -	$ -	Water	311530-Pump Eqp Wtr Treatment	311530	10131153	311.3	242	242	242	242	242	242	242
$ -	$ 27.58	Water	311540-Pumping Equipment TD	311540	10131154	311.4	57,154	58,767	60,384	62,005	63,629	65,257	66,888
$ -	$ 1,185.78	Water	320100-WT Equip Non-Media	320100	10132010	320.3	(17,375,852)	(17,460,102)	(17,544,297)	(17,628,467)	(17,712,585)	(17,796,693)	(17,880,776)
$ -	$ -	Water	320200-WT Equip Filter Media	320200	10132010	320.3	(305,527)	(315,817)	(326,108)	(336,398)	(346,689)	(356,979)	(367,269)
$ -	$ 182.84	Water	330000-Dist Reservoirs & Standpip	330000	10133000	330.4	(291,817)	(294,085)	(296,352)	(298,620)	(300,888)	(303,155)	(305,423)
$ -	$ 130.74	Water	330100-Elevated Tanks & Standpip	330100	10133000	330.4	(3,853,804)	(3,869,675)	(3,885,544)	(3,901,410)	(3,917,275)	(3,933,138)	(3,948,998)
$ -	$ -	Water	330200-Ground Level Tanks	330200	10133000	330.4	(123,469)	(127,463)	(131,461)	(135,482)	(139,508)	(143,565)	(147,642)
$ -	$ -	Water	330400-Clearwell	330400	10133000	330.4	(110,434)	(114,048)	(117,663)	(121,277)	(124,892)	(128,506)	(132,121)
$ (9)	$ 2,289.84	Water	331001-TD Mains Not Classified	331001	10133100	331.4	(35,197,452)	(35,400,257)	(35,603,437)	(35,807,004)	(36,011,085)	(36,215,832)	(36,421,343)
$ (3)	$ 740.62	Water	331100-TD Mains 4in & Less	331100	10133100	331.4	(881,742)	(888,716)	(895,689)	(902,662)	(909,635)	(916,609)	(923,582)
$ (6)	$ 2,108.39	Water	331200-TD Mains 6in to 8in	331200	10133100	331.4	(1,399,020)	(1,425,716)	(1,452,411)	(1,479,106)	(1,505,802)	(1,532,497)	(1,559,192)
$ -	$ 74.80	Water	331300-TD Mains 10in to 16in	331300	10133100	331.4	(508,850)	(521,359)	(533,869)	(546,378)	(558,888)	(571,397)	(583,907)
$ -	$ 268.00	Water	331400-TD Mains 18in & Grtr	331400	10133100	331.4	(3,745,551)	(3,845,963)	(3,946,375)	(4,046,787)	(4,147,199)	(4,247,611)	(4,348,022)
$ (592)	$ 8,380.58	Water	333000-Services	333000	10133300	333.4	(19,837,276)	(19,932,833)	(20,028,860)	(20,125,353)	(20,222,325)	(20,319,788)	(20,417,675)
$ (3,037)	$ 7,739.95	Water	334100-Meters	334100	10133410	334.4	885,928	891,612	895,783	898,723	900,991	902,981	904,715
$ (234)	$ 72.04	Water	334110-Meters Bronze Case	334110	10133410	334.4	(375,968)	(381,028)	(386,087)	(391,146)	(396,204)	(401,261)	(406,317)
$ (961)	$ 1,242.67	Water	334120-Meters Plastic Case	334120	10133410	334.4	231,392	243,542	255,726	267,945	280,199	292,488	304,811
$ (730)	$ 3,550.05	Water	334130-Meters Other	334130	10133410	334.4	(91,299)	(76,232)	(61,099)	(45,899)	(30,632)	(15,299)	101
$ -	$ -	Water	334131-Meter Reading Units	334131	10133410	334.4	(43,570)	(44,330)	(45,089)	(45,848)	(46,607)	(47,366)	(48,125)
$ (262)	$ 4,788.03	Water	334200-Meter Installations	334200	10133420	334.4	(6,096,546)	(6,134,168)	(6,171,790)	(6,209,409)	(6,247,028)	(6,284,645)	(6,322,261)
$ -	$ 2,407.95	Water	334300-Meter Vaults	334300	10133410	334.4	73,903	75,198	76,493	77,789	79,084	80,380	81,675
$ -	$ 2,371.59	Water	335000-Hydrants	335000	10133500	335.4	(3,653,383)	(3,667,732)	(3,682,140)	(3,696,612)	(3,711,161)	(3,725,796)	(3,740,520)
$ -	$ -	Water	339100-Other P/E-Intangible	339100	10133910	339.1	(122,399)	(122,535)	(122,670)	(122,805)	(122,941)	(123,076)	(123,212)
$ -	$ -	Water	339600-Other P/E-CPS	339600	10133910	339.1	(158,686)	(165,146)	(171,753)	(178,507)	(185,262)	(192,016)	(198,770)
$ -	$ -	Water	340100-Office Furniture & Equip	340100	10134010	340.5	(540,523)	(540,199)	(539,864)	(539,518)	(539,162)	(538,794)	(538,417)
$ -	$ -	Water	340210-Comp & Periph Mainframe	340210	10134010	340.5	(72,918)	(74,046)	(75,168)	(76,282)	(77,389)	(78,489)	(79,581)
$ (9)	$ (1.05)	Water	340220-Comp & Periph Personal	340220	10134010	340.5	(1,114,481)	(1,103,168)	(1,091,719)	(1,080,136)	(1,068,418)	(1,056,564)	(1,044,576)
$ -	$ 87.39	Water	340230-Comp & Periph Other	340230	10134010	340.5	(298,988)	(310,202)	(321,401)	(332,584)	(343,752)	(354,904)	(366,041)
$ -	$ -	Water	340240-Comp & Periph Capital Lea	340240	10134010	340.5	0	0	0	0	0	0	0

Kentucky American Water
Case No. 2012-00520
Accumulated Depreciation & COR Balances by Month, September 2012 - December 2014

Automatically calculates Accum. Depr. & COR: Prior Month Balance - Current Month Depr. & COR Expense + Retirements - Monthly Salvage Credit + Monthly Cost of Removal Debit

Workpaper #: W/P - 1-2

Excel Ref: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Bal Accum Dep&COR

	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13
Total Accum Life Dep & COR	$ (128,981,893)	$ (129,899,825)	$ (130,916,958)	$ (131,940,901)	$ (132,877,836)	$ (133,817,653)	$ (134,761,518)
Total Life Dep	$ (113,382,658)	$ (114,171,664)	$ (115,059,463)	$ (115,953,596)	$ (116,760,517)	$ (117,569,877)	$ (118,382,888)
Total COR	$ (15,599,235)	$ (15,728,161)	$ (15,857,495)	$ (15,987,305)	$ (16,117,320)	$ (16,247,776)	$ (16,378,630)

Monthly Salvage Credit	Monthly COR Debit	Utility	Account	Util. Plant Account	SAP G/L Account	NARUC Acct	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13
$ -	$ -	Water	340300-Computer Software	340300	10134010	340.5	(4,720,698)	(4,702,447)	(4,683,959)	(4,665,234)	(4,646,271)	(4,627,071)	(4,607,634)
$ -	$ -	Water	340320-Comp Software Personal	340320	10134010	340.5	(326,191)	(319,161)	(312,132)	(305,103)	(298,074)	(291,044)	(284,015)
$ -	$ -	Water	340325-Comp Software Customize	340325	10134010	340.5	(415,420)	(427,090)	(438,761)	(450,431)	(462,101)	(473,771)	(485,442)
$ -	$ -	Water	340330-Comp Software Other	340330	10134010	340.5	(720,028)	(722,223)	(724,417)	(726,611)	(728,805)	(730,999)	(733,193)
$ -	$ -	Water	340500-Other Office Equipment	340500	10134010	340.5	(68,000)	(67,604)	(67,206)	(66,804)	(66,400)	(65,993)	(65,583)
$ (3,986)	$ -	Water	341100-Trans Equip Lt Duty Trks	341100	10134100	341.5	(1,016,896)	(998,113)	(979,320)	(960,495)	(941,776)	(923,026)	(904,243)
$ (529)	$ -	Water	341200-Trans Equip Hvy Duty Trks	341200	10134100	341.5	(700,596)	(698,879)	(697,184)	(695,479)	(693,975)	(692,460)	(690,934)
$ (338)	$ -	Water	341300-Trans Equip Autos	341300	10134100	341.5	(207,734)	(205,634)	(203,640)	(201,625)	(200,385)	(199,124)	(197,842)
$ (413)	$ -	Water	341400-Trans Equip Other	341400	10134100	341.5	(202,915)	(204,747)	(206,573)	(208,394)	(210,208)	(212,016)	(213,818)
$ -	$ -	Water	342000-Stores Equipment	342000	10134200	342.5	(34,633)	(34,675)	(34,717)	(34,760)	(34,802)	(34,844)	(34,885)
$ -	$ 29.59	Water	343000-Tools,Shop,Garage Equip	343000	10134300	343.5	(1,133,887)	(1,140,915)	(1,148,423)	(1,155,973)	(1,163,544)	(1,171,550)	(1,179,554)
$ -	$ 381.46	Water	344000-Laboratory Equipment	344000	10134400	344.5	(734,345)	(735,712)	(737,065)	(738,403)	(739,726)	(741,035)	(742,329)
$ (236)	$ 14.59	Water	345000-Power Operated Equipmer	345000	10134500	345.5	(920,978)	(922,303)	(923,626)	(924,947)	(926,265)	(927,580)	(928,892)
$ -	$ 88.02	Water	346100-Comm Equip Non-Telepho	346100	10134600	346.5	(1,277,432)	(1,289,442)	(1,301,428)	(1,313,388)	(1,325,323)	(1,337,234)	(1,349,119)
$ -	$ 295.28	Water	346190-Remote Control & Instrum	346190	10134600	346.5	(164,433)	(176,547)	(189,148)	(204,483)	(219,887)	(235,305)	(252,511)
$ -	$ -	Water	346200-Comm Equip Telephone	346200	10134600	346.5	(77,215)	(78,968)	(80,721)	(82,474)	(84,227)	(85,981)	(87,734)
$ -	$ 28.81	Water	347000-Misc Equipment	347000	10134700	347.5	(635,645)	(641,434)	(647,241)	(653,096)	(659,001)	(664,912)	(670,819)
$ -	$ -	Water	348000-Other Tangible Property	348000	10134800	348.5	(234,386)	(232,650)	(230,926)	(229,214)	(227,502)	(225,790)	(224,077)
$ -	$ -	Water	354200-WW Struct & Imp Collectio	354200	10135420	354.2	3,168	3,168	3,168	3,168	3,168	3,168	3,168
		Water	340315-Comp Software Specia	340315	10134010	340.5	(560,838)	(644,473)	(824,120)	(1,005,595)	(1,097,399)	(1,190,233)	(1,284,048)
		Water	339300-Other P/E-Treatment	339300	10133930	339.3	0	0	0	0	0	0	0
$ (11,358)	$ 43,878				**Total Unadjusted Balances**		**(128,981,893)**	**(129,899,825)**	**(130,916,958)**	**(131,940,901)**	**(132,877,836)**	**(133,817,653)**	**(134,761,518)**

Kentucky American Water
Case No. 2012-00520
Accumulated Depreciation & COR Balances by Month, September 2012 - December 2014

Automatically calculates Accum. Depr. & COR: Prior Month Balance - Current Month Depr. & COR Expense + Retirements - Monthly Salvage Credit + Monthly Cost of Removal Debit

Workpaper #: W/P - 1-2

Excel Ref: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Bal Accum Dep&COR

	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14
Total Accum Life Dep & COR	$ (135,707,519)	$ (136,655,687)	$ (137,626,477)	$ (138,598,057)	$ (139,572,579)	$ (137,111,230)	$ (138,083,679)
Total Life Dep	$ (119,197,656)	$ (120,014,352)	$ (120,850,133)	$ (121,686,454)	$ (122,525,426)	$ (120,028,271)	$ (120,865,722)
Total COR	$ (16,509,863)	$ (16,641,335)	$ (16,776,344)	$ (16,911,603)	$ (17,047,154)	$ (17,082,958)	$ (17,217,957)

Monthly Salvage Credit	Monthly COR Debit	Utility	Account	Util. Plant Account	SAP G/L Account	NARUC Acct	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14
$ -	$ -	Water	301000-Organization	301000	10130100	301.1	0	0	0	0	0	0	0
$ -	$ -	Water	302000-Franchises	302000	10130200	302.1	0	0	0	0	0	0	0
$ -	$ -	Water	303200-Land & Land Rights-Supply	303200	10130320	303.2	0	0	0	0	0	0	0
$ -	$ -	Water	303300-Land & Land Rights-Pumpi	303300	10130330	303.2	0	0	0	0	0	0	0
$ -	$ -	Water	303400-Land & Land Rights-Treatm	303400	10130340	303.3	0	0	0	0	0	0	0
$ -	$ -	Water	303500-Land & Land Rights-T&D	303500	10130350	303.4	0	0	0	0	0	11,529	11,529
$ -	$ 16.52	Water	304100-Struct & Imp-Supply	304100	10130410	304.2	(850,464)	(868,067)	(885,669)	(903,272)	(920,873)	(938,474)	(956,075)
$ -	$ 213.33	Water	304200-Struct & Imp-Pumping	304200	10130420	304.2	(2,324,114)	(2,344,254)	(2,364,388)	(2,384,516)	(2,404,639)	(2,424,755)	(2,444,866)
$ (0)	$ 668.68	Water	304300-Struct & Imp-Treatment	304300	10130430	304.3	(3,588,070)	(3,647,919)	(3,707,934)	(3,767,959)	(3,827,973)	(3,887,976)	(3,947,968)
$ -	$ -	Water	304400-Struct & Imp-T&D	304400	10130440	304.4	(608,304)	(610,309)	(612,315)	(614,321)	(616,326)	(598,114)	(600,076)
$ (12)	$ 101.02	Water	304500-Struct & Imp-General	304500	10130450	304.5	(342,106)	(352,596)	(363,151)	(373,705)	(384,260)	(394,815)	(405,369)
$ -	$ 72.36	Water	304600-Struct & Imp-Offices	304600	10130450	304.5	(1,482,787)	(1,492,000)	(1,501,212)	(1,510,424)	(1,519,635)	(1,528,846)	(1,538,056)
$ -	$ -	Water	304610-Struct & Imp-HVAC	304610	10130450	304.5	(1,041)	(1,041)	(1,041)	(1,041)	(1,041)	(1,041)	(1,041)
$ -	$ -	Water	304700-Struct & Imp-Store,Shop,G	304700	10130450	304.5	(410,938)	(413,759)	(416,580)	(419,401)	(422,222)	(425,042)	(427,862)
$ -	$ 42.57	Water	304800-Struct & Imp-Misc	304800	10130450	304.5	(400,748)	(402,943)	(405,118)	(407,274)	(409,410)	(333,215)	(334,996)
$ -	$ 21.20	Water	305000-Collect & Impound Reservo	305000	10130500	305.2	(387,617)	(388,338)	(389,058)	(389,778)	(390,497)	(391,216)	(391,935)
$ -	$ 995.47	Water	306000-Lake, River & Other Intakes	306000	10130600	306.2	(461,459)	(472,963)	(484,512)	(496,066)	(507,620)	(519,174)	(530,727)
$ -	$ 32.68	Water	309000-Supply Mains	309000	10130900	309.2	(3,148,942)	(3,200,015)	(3,251,088)	(3,302,162)	(3,353,235)	(3,404,308)	(3,455,381)
$ -	$ 17.57	Water	310000-Power Generation Equip	310000	10131000	310.2	(552,813)	(559,962)	(567,108)	(574,251)	(581,391)	(588,529)	(595,665)
$ -	$ 1,333.97	Water	311200-Pump Eqp Electric	311200	10131120	311.2	(5,415,779)	(5,431,588)	(5,447,990)	(5,464,394)	(5,480,789)	(5,497,175)	(5,513,552)
$ -	$ 27.27	Water	311300-Pump Eqp Diesel	311300	10131130	311.2	(394,471)	(395,379)	(396,285)	(397,191)	(398,096)	(399,001)	(399,905)
$ -	$ -	Water	311400-Pump Eqp Hydraulic	311400	10131140	311.2	(9,053)	(9,068)	(9,082)	(9,097)	(9,112)	(9,127)	(9,141)
$ -	$ -	Water	311500-Pump Eqp Other	311500	10131150	311.2	(8)	(8)	(8)	(8)	(8)	4,949	4,949
$ -	$ 1,849.78	Water	311520-Pump Eqp-SOS & Pumping	311520	10131152	311.2	(1,138,743)	(1,162,467)	(1,186,182)	(1,209,888)	(1,233,586)	(1,234,528)	(1,258,163)
$ -	$ -	Water	311530-Pump Eqp Wtr Treatment	311530	10131153	311.3	242	242	242	242	242	242	242
$ -	$ 27.58	Water	311540-Pumping Equipment TD	311540	10131154	311.4	68,523	70,162	71,104	72,047	72,994	73,944	74,898
$ -	$ 1,185.78	Water	320100-WT Equip Non-Media	320100	10132010	320.3	(17,964,821)	(18,048,848)	(18,132,849)	(18,216,790)	(18,300,665)	(15,686,889)	(15,764,981)
$ -	$ -	Water	320200-WT Equip Filter Media	320200	10132010	320.3	(377,560)	(387,850)	(398,141)	(408,431)	(418,722)	(429,012)	(439,302)
$ -	$ 182.84	Water	330000-Dist Reservoirs & Standpip	330000	10133000	330.4	(307,690)	(309,958)	(312,225)	(314,493)	(316,760)	(319,028)	(321,295)
$ -	$ 130.74	Water	330100-Elevated Tanks & Standpip	330100	10133000	330.4	(3,964,856)	(3,980,712)	(4,002,419)	(4,024,136)	(4,045,857)	(3,473,782)	(3,494,523)
$ -	$ -	Water	330200-Ground Level Tanks	330200	10133000	330.4	(151,734)	(155,852)	(159,990)	(164,130)	(168,270)	(172,411)	(176,551)
$ -	$ -	Water	330400-Clearwell	330400	10133000	330.4	(135,735)	(139,350)	(142,964)	(146,579)	(150,193)	(153,808)	(157,422)
$ (9)	$ 2,289.84	Water	331001-TD Mains Not Classified	331001	10133100	331.4	(36,627,668)	(36,834,739)	(37,056,308)	(37,278,486)	(37,501,077)	(37,723,857)	(37,946,898)
$ (3)	$ 740.62	Water	331100-TD Mains 4in & Less	331100	10133100	331.4	(930,555)	(937,528)	(944,502)	(951,475)	(958,448)	(965,421)	(972,395)
$ (6)	$ 2,108.39	Water	331200-TD Mains 6in to 8in	331200	10133100	331.4	(1,585,887)	(1,612,583)	(1,639,278)	(1,665,973)	(1,692,667)	(1,719,362)	(1,746,057)
$ -	$ 74.80	Water	331300-TD Mains 10in to 16in	331300	10133100	331.4	(596,416)	(608,926)	(621,435)	(633,945)	(646,454)	(658,963)	(671,473)
$ -	$ 268.00	Water	331400-TD Mains 18in & Grtr	331400	10133100	331.4	(4,448,434)	(4,548,846)	(4,649,257)	(4,749,669)	(4,850,080)	(4,950,492)	(5,050,903)
$ (592)	$ 8,380.58	Water	333000-Services	333000	10133300	333.4	(20,515,984)	(20,614,628)	(20,713,614)	(20,812,922)	(20,912,588)	(21,012,673)	(21,113,237)
$ (3,037)	$ 7,739.95	Water	334100-Meters	334100	10133410	334.4	906,346	907,884	909,368	910,817	911,581	912,081	911,490
$ (234)	$ 72.04	Water	334110-Meters Bronze Case	334110	10133410	334.4	(411,373)	(416,429)	(421,483)	(426,537)	(431,591)	(436,643)	(441,695)
$ (961)	$ 1,242.67	Water	334120-Meters Plastic Case	334120	10133410	334.4	317,170	329,563	341,990	354,453	366,950	379,482	392,049
$ (730)	$ 3,550.05	Water	334130-Meters Other	334130	10133410	334.4	15,567	31,100	46,700	62,366	78,098	93,898	109,763
$ -	$ -	Water	334131-Meter Reading Units	334131	10133410	334.4	(48,885)	(49,644)	(50,403)	(51,162)	(51,921)	(52,680)	(53,440)
$ (262)	$ 4,788.03	Water	334200-Meter Installations	334200	10133420	334.4	(6,359,876)	(6,397,489)	(6,435,101)	(6,472,711)	(6,510,320)	(6,547,928)	(6,585,534)
$ -	$ 2,407.95	Water	334300-Meter Vaults	334300	10133410	334.4	82,971	84,267	85,563	86,858	88,154	89,450	90,747
$ -	$ 2,371.59	Water	335000-Hydrants	335000	10133500	335.4	(3,755,360)	(3,770,268)	(3,785,239)	(3,800,270)	(3,815,350)	(3,830,481)	(3,845,662)
$ -	$ -	Water	339100-Other P/E-Intangible	339100	10133910	339.1	(123,347)	(123,482)	(123,618)	(123,753)	(123,889)	(124,024)	(124,159)
$ -	$ -	Water	339600-Other P/E-CPS	339600	10133910	339.1	(205,525)	(212,279)	(219,033)	(225,788)	(232,622)	(239,536)	(246,529)
$ -	$ -	Water	340100-Office Furniture & Equip	340100	10134010	340.5	(538,028)	(537,629)	(537,219)	(536,798)	(536,367)	(535,925)	(535,472)
$ -	$ -	Water	340210-Comp & Periph Mainframe	340210	10134010	340.5	(80,666)	(81,744)	(82,815)	(83,878)	(84,934)	(85,982)	(87,024)
$ (9)	$ (1.05)	Water	340220-Comp & Periph Personal	340220	10134010	340.5	(1,032,453)	(1,020,196)	(1,007,803)	(995,275)	(982,613)	(969,815)	(956,883)
$ -	$ 87.39	Water	340230-Comp & Periph Other	340230	10134010	340.5	(377,163)	(388,270)	(399,361)	(410,437)	(421,497)	(432,542)	(443,572)
$ -	$ -	Water	340240-Comp & Periph Capital Lea	340240	10134010	340.5	0	0	0	0	0	0	0

Kentucky American Water
Case No. 2012-00520
Accumulated Depreciation & COR Balances by Month, September 2012 - December 2014

Automatically calculates Accum. Depr. & COR: Prior Month Balance - Current Month Depr. & COR Expense + Retirements - Monthly Salvage Credit + Monthly Cost of Removal Debit

Workpaper #: W/P - 1-2

Excel Ref: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Bal Accum Dep&COR

	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14
Total Accum Life Dep & COR	$ (135,707,519)	$ (136,655,687)	$ (137,626,477)	$ (138,598,057)	$ (139,572,579)	$ (137,111,230)	$ (138,083,679)
Total Life Dep	$ (119,197,656)	$ (120,014,352)	$ (120,850,133)	$ (121,686,454)	$ (122,525,426)	$ (120,028,271)	$ (120,865,722)
Total COR	$ (16,509,863)	$ (16,641,335)	$ (16,776,344)	$ (16,911,603)	$ (17,047,154)	$ (17,082,958)	$ (17,217,957)

Monthly Salvage Credit	Monthly COR Debit	Utility	Account	Util. Plant Account	SAP G/L Account	NARUC Acct	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14
$ -	$ -	Water	340300-Computer Software	340300	10134010	340.5	(4,587,960)	(4,568,049)	(4,547,900)	(4,527,515)	(4,506,892)	(4,486,031)	(4,464,934)
$ -	$ -	Water	340320-Comp Software Personal	340320	10134010	340.5	(276,986)	(269,956)	(262,927)	(255,898)	(248,868)	(241,839)	(234,810)
$ -	$ -	Water	340325-Comp Software Customize	340325	10134010	340.5	(497,112)	(508,782)	(520,453)	(532,123)	(543,793)	(555,464)	(567,134)
$ -	$ -	Water	340330-Comp Software Other	340330	10134010	340.5	(735,387)	(737,581)	(739,775)	(741,969)	(744,163)	(746,357)	(748,551)
$ -	$ -	Water	340500-Other Office Equipment	340500	10134010	340.5	(65,171)	(64,755)	(64,337)	(63,916)	(63,492)	(63,065)	(62,636)
$ (3,986)	$ -	Water	341100-Trans Equip Lt Duty Trks	341100	10134100	341.5	(885,427)	(866,646)	(847,832)	(828,987)	(810,108)	(791,198)	(772,255)
$ (529)	$ -	Water	341200-Trans Equip Hvy Duty Trks	341200	10134100	341.5	(689,397)	(687,950)	(686,492)	(685,024)	(683,543)	(682,052)	(680,550)
$ (338)	$ -	Water	341300-Trans Equip Autos	341300	10134100	341.5	(196,538)	(195,593)	(194,626)	(193,639)	(192,629)	(191,599)	(190,547)
$ (413)	$ -	Water	341400-Trans Equip Other	341400	10134100	341.5	(215,615)	(217,405)	(219,189)	(220,967)	(222,740)	(224,506)	(226,266)
$ -	$ -	Water	342000-Stores Equipment	342000	10134200	342.5	(34,927)	(34,969)	(35,010)	(35,051)	(35,093)	(35,134)	(35,175)
$ -	$ 29.59	Water	343000-Tools,Shop,Garage Equip	343000	10134300	343.5	(1,187,557)	(1,195,558)	(1,203,558)	(1,211,555)	(1,219,551)	(1,226,562)	(1,234,638)
$ -	$ 381.46	Water	344000-Laboratory Equipment	344000	10134400	344.5	(743,608)	(744,872)	(746,122)	(747,357)	(748,578)	(749,783)	(750,974)
$ (236)	$ 14.59	Water	345000-Power Operated Equipmer	345000	10134500	345.5	(930,202)	(931,509)	(932,813)	(934,115)	(935,414)	(935,081)	(936,372)
$ -	$ 88.02	Water	346100-Comm Equip Non-Telepho	346100	10134600	346.5	(1,360,979)	(1,372,814)	(1,384,624)	(1,396,409)	(1,408,169)	(1,419,904)	(1,431,614)
$ -	$ 295.28	Water	346190-Remote Control & Instrum	346190	10134600	346.5	(269,775)	(287,066)	(304,741)	(322,563)	(342,174)	(362,380)	(383,182)
$ -	$ -	Water	346200-Comm Equip Telephone	346200	10134600	346.5	(89,487)	(91,240)	(92,993)	(94,746)	(96,500)	(98,253)	(100,006)
$ -	$ 28.81	Water	347000-Misc Equipment	347000	10134700	347.5	(676,723)	(682,624)	(688,521)	(694,415)	(700,306)	(698,970)	(704,824)
$ -	$ -	Water	348000-Other Tangible Property	348000	10134800	348.5	(222,365)	(220,653)	(218,941)	(217,229)	(215,524)	(213,825)	(212,132)
$ -	$ -	Water	354200-WW Struct & Imp Collectio	354200	10135420	354.2	3,168	3,168	3,168	3,168	3,168	3,168	3,168
		Water	340315-Comp Software Specia	340315	10134010	340.5	(1,378,814)	(1,474,126)	(1,569,974)	(1,666,145)	(1,762,632)	(1,861,379)	(1,960,125)
		Water	339300-Other P/E-Treatment	339300	10133930	339.3	0	0	0	0	0	0	0
$ (11,358)	$ 43,878				**Total Unadjusted Balances**		**(135,707,519)**	**(136,655,687)**	**(137,626,477)**	**(138,598,057)**	**(139,572,579)**	**(137,111,230)**	**(138,083,679)**

Kentucky American Water
Case No. 2012-00520
Accumulated Depreciation & COR Balances by Month, September 2012 - December 2014

Automatically calculates Accum. Depr. & COR: Prior Month Balance - Current Month Depr. & COR Expense + Retirements - Monthly Salvage Credit + Monthly Cost of Removal Debit

Workpaper #: W/P - 1-2

Excel Ref: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Bal Accum Dep&COR

	Jun-14	Jul-14	Oct-Dec 2012	2013 Additions	2014 Additions	Base Per. as of 31-Mar-13	Forecast Per. 13-Month Average
Total Accum Life Dep & COR	$ (139,059,030)	$ (140,037,046)	$ (1,768,951)	$ (11,272,940)	$ (8,318,835)	$ (128,073,154)	$ (136,603,786)
Total Life Dep	$ (121,705,662)	$ (122,547,861)	$ (1,517,963)	$ (9,722,445)	$ (6,784,630)	$ (112,601,617)	$ (119,852,955)
Total COR	$ (17,353,369)	$ (17,489,185)	$ (250,988)	$ (1,550,494)	$ (1,534,205)	$ (15,471,537)	$ (16,750,831)

Monthly Salvage Credit	Monthly COR Debit	Utility	Account	Util. Plant Account	SAP G/L Account	NARUC Acct	Jun-14	Jul-14	Oct-Dec 2012	2013 Additions	2014 Additions	Base Per. 31-Mar-13	Forecast 13 Mo Avg
$ -	$ -	Water	301000-Organization	301000	10130100	301.1	0	0	$ -	$ -	$ -	$ -	$ -
$ -	$ -	Water	302000-Franchises	302000	10130200	302.1	0	0	$ -	$ -	$ -	$ -	$ -
$ -	$ -	Water	303200-Land & Land Rights-Supply	303200	10130320	303.2	0	0	$ -	$ -	$ -	$ -	$ -
$ -	$ -	Water	303300-Land & Land Rights-Pumpi	303300	10130330	303.2	0	0	$ -	$ -	$ -	$ -	$ -
$ -	$ -	Water	303400-Land & Land Rights-Treatm	303400	10130340	303.3	0	0	$ -	$ -	$ -	$ -	$ -
$ -	$ -	Water	303500-Land & Land Rights-T&D	303500	10130350	303.4	11,529	11,529	$ -	$ -	$ 11,529	$ -	$ 3,547
$ -	$ 16.52	Water	304100-Struct & Imp-Supply	304100	10130410	304.2	(973,675)	(991,275)	$ (35,218)	$ (228,877)	$ (211,200)	$ (709,622)	$ (885,666)
$ -	$ 213.33	Water	304200-Struct & Imp-Pumping	304200	10130420	304.2	(2,464,970)	(2,485,069)	$ (40,426)	$ (262,276)	$ (241,222)	$ (2,162,784)	$ (2,364,347)
$ (0)	$ 668.68	Water	304300-Struct & Imp-Treatment	304300	10130430	304.3	(4,007,985)	(4,068,157)	$ (116,230)	$ (767,278)	$ (724,244)	$ (3,114,701)	$ (3,708,401)
$ -	$ -	Water	304400-Struct & Imp-T&D	304400	10130440	304.4	(602,039)	(604,002)	$ (4,011)	$ (26,073)	$ (3,505)	$ (592,259)	$ (606,074)
$ (12)	$ 101.02	Water	304500-Struct & Imp-General	304500	10130450	304.5	(415,976)	(426,608)	$ (19,420)	$ (129,494)	$ (128,651)	$ (262,216)	$ (363,448)
$ -	$ 72.36	Water	304600-Struct & Imp-Offices	304600	10130450	304.5	(1,547,266)	(1,556,475)	$ (18,440)	$ (119,813)	$ (110,512)	$ (1,409,063)	$ (1,501,208)
$ -	$ -	Water	304610-Struct & Imp-HVAC	304610	10130450	304.5	(1,041)	(1,041)	$ -	$ -	$ -	$ (1,041)	$ (1,041)
$ -	$ -	Water	304700-Struct & Imp-Store,Shop,G	304700	10130450	304.5	(430,681)	(433,500)	$ (5,651)	$ (36,706)	$ (33,831)	$ (388,354)	$ (416,578)
$ -	$ 42.57	Water	304800-Struct & Imp-Misc	304800	10130450	304.5	(336,757)	(338,498)	$ (4,883)	$ (30,074)	$ 56,036	$ (382,478)	$ (380,739)
$ -	$ 21.20	Water	305000-Collect & Impound Reservo	305000	10130500	305.2	(392,653)	(393,371)	$ (1,451)	$ (9,399)	$ (8,618)	$ (381,837)	$ (389,055)
$ -	$ 995.47	Water	306000-Lake, River & Other Intake:	306000	10130600	306.2	(542,289)	(553,894)	$ (22,039)	$ (146,550)	$ (139,629)	$ (370,933)	$ (484,651)
$ -	$ 32.68	Water	309000-Supply Mains	309000	10130900	309.2	(3,506,455)	(3,557,528)	$ (102,147)	$ (663,955)	$ (612,879)	$ (2,740,354)	$ (3,251,088)
$ -	$ 17.57	Water	310000-Power Generation Equip	310000	10131000	310.2	(602,798)	(609,928)	$ (14,363)	$ (93,137)	$ (85,577)	$ (495,530)	$ (567,089)
$ -	$ 1,333.97	Water	311200-Pump Eqp Electric	311200	10131120	311.2	(5,529,937)	(5,546,391)	$ (23,621)	$ (183,638)	$ (201,024)	$ (5,295,976)	$ (5,448,787)
$ -	$ 27.27	Water	311300-Pump Eqp Diesel	311300	10131130	311.2	(400,808)	(401,710)	$ (1,833)	$ (11,852)	$ (10,832)	$ (387,187)	$ (396,280)
$ -	$ -	Water	311400-Pump Eqp Hydraulic	311400	10131140	311.2	(9,156)	(9,171)	$ (29)	$ (191)	$ (176)	$ (8,936)	$ (9,082)
$ -	$ -	Water	311500-Pump Eqp Other	311500	10131150	311.2	4,949	4,949	$ -	$ -	$ 4,957	$ (8)	$ 1,517
$ -	$ 1,849.78	Water	311520-Pump Eqp-SOS & Pumping	311520	10131152	311.2	(1,281,790)	(1,305,408)	$ (47,666)	$ (309,090)	$ (260,901)	$ (948,638)	$ (1,179,101)
$ -	$ -	Water	311530-Pump Eqp Wtr Treatment	311530	10131153	311.3	242	242	$ -	$ -	$ -	$ 242	$ 242
$ -	$ 27.58	Water	311540-Pumping Equipment TD	311540	10131154	311.4	75,856	76,817	$ 3,187	$ 21,021	$ 11,514	$ 55,544	$ 70,317
$ -	$ 1,185.78	Water	320100-WT Equip Non-Media	320100	10132010	320.3	(15,843,016)	(15,921,022)	$ (168,861)	$ (1,094,884)	$ 1,736,968	$ (17,291,536)	$ (17,299,877)
$ -	$ -	Water	320200-WT Equip Filter Media	320200	10132010	320.3	(449,593)	(459,883)	$ (20,581)	$ (133,776)	$ (123,485)	$ (295,236)	$ (398,141)
$ -	$ 182.84	Water	330000-Dist Reservoirs & Standpip	330000	10133000	330.4	(323,563)	(325,830)	$ (4,535)	$ (29,478)	$ (27,210)	$ (289,550)	$ (312,225)
$ -	$ 130.74	Water	330100-Elevated Tanks & Standpip	330100	10133000	330.4	(3,515,262)	(3,535,999)	$ (31,766)	$ (206,297)	$ 341,062	$ (3,837,930)	$ (3,826,028)
$ -	$ -	Water	330200-Ground Level Tanks	330200	10133000	330.4	(180,696)	(184,860)	$ (6,392)	$ (51,582)	$ (50,133)	$ (119,476)	$ (160,053)
$ -	$ -	Water	330400-Clearwell	330400	10133000	330.4	(161,036)	(164,651)	$ (7,229)	$ (46,988)	$ (43,374)	$ (106,820)	$ (142,964)
$ (9)	$ 2,289.84	Water	331001-TD Mains Not Classified	331001	10133100	331.4	(38,170,294)	(38,394,086)	$ (391,932)	$ (2,629,174)	$ (2,697,470)	$ (34,997,153)	$ (37,076,052)
$ (3)	$ 740.62	Water	331100-TD Mains 4in & Less	331100	10133100	331.4	(979,368)	(986,341)	$ (13,947)	$ (90,652)	$ (83,679)	$ (874,769)	$ (944,502)
$ (6)	$ 2,108.39	Water	331200-TD Mains 6in to 8in	331200	10133100	331.4	(1,772,752)	(1,799,447)	$ (53,392)	$ (347,041)	$ (320,336)	$ (1,372,325)	$ (1,639,277)
$ -	$ 74.80	Water	331300-TD Mains 10in to 16in	331300	10133100	331.4	(683,982)	(696,492)	$ (25,019)	$ (162,623)	$ (150,113)	$ (496,341)	$ (621,435)
$ -	$ 268.00	Water	331400-TD Mains 18in & Grtr	331400	10133100	331.4	(5,151,314)	(5,251,726)	$ (200,824)	$ (1,305,355)	$ (1,204,936)	$ (3,645,139)	$ (4,649,25
$ (592)	$ 8,380.58	Water	333000-Services	333000	10133300	333.4	(21,214,317)	(21,315,894)	$ (186,002)	$ (1,247,931)	$ (1,216,320)	$ (19,742,326)	$ (20,716,23
$ (3,037)	$ 7,739.95	Water	334100-Meters	334100	10133410	334.4	909,461	906,398	$ 24,630	$ 63,793	$ (22,905)	$ 878,933	$ 907,1
$ (234)	$ 72.04	Water	334110-Meters Bronze Case	334110	10133410	334.4	(446,746)	(451,797)	$ (10,127)	$ (65,771)	$ (60,611)	$ (370,907)	$ (421,4
$ (961)	$ 1,242.67	Water	334120-Meters Plastic Case	334120	10133410	334.4	404,651	417,287	$ 23,917	$ 158,397	$ 151,428	$ 219,277	$ 342,23
$ (730)	$ 3,550.05	Water	334130-Meters Other	334130	10133410	334.4	125,696	141,695	$ 29,402	$ 196,736	$ 191,587	$ (106,300)	$ 47,16
$ -	$ -	Water	334131-Meter Reading Units	334131	10133410	334.4	(54,199)	(54,958)	$ (1,518)	$ (9,869)	$ (9,110)	$ (42,811)	$ (50,40
$ (262)	$ 4,788.03	Water	334200-Meter Installations	334200	10133420	334.4	(6,623,139)	(6,660,743)	$ (75,181)	$ (489,077)	$ (451,962)	$ (6,058,922)	$ (6,435,0
$ -	$ 2,407.95	Water	334300-Meter Vaults	334300	10133410	334.4	92,043	93,339	$ 2,590	$ 16,839	$ 14,439	$ 72,608	$ 85,563
$ -	$ 2,371.59	Water	335000-Hydrants	335000	10133500	335.4	(3,860,901)	(3,876,204)	$ (27,886)	$ (187,463)	$ (184,013)	$ (3,639,129)	$ (3,785,6
$ -	$ -	Water	339100-Other P/E-Intangible	339100	10133910	339.1	(124,295)	(124,430)	$ (271)	$ (1,760)	$ (1,625)	$ (122,264)	$ (123,61
$ -	$ -	Water	339600-Other P/E-CPS	339600	10133910	339.1	(253,603)	(260,676)	$ (5,474)	$ (70,854)	$ (83,764)	$ (152,373)	$ (219,242)
$ -	$ -	Water	340100-Office Furniture & Equip	340100	10134010	340.5	(535,009)	(534,535)	$ 531	$ 4,355	$ 5,625	$ (540,837)	$ (537,144)
$ -	$ -	Water	340210-Comp & Periph Mainframe	340210	10134010	340.5	(88,058)	(89,084)	$ (2,338)	$ (14,581)	$ (12,364)	$ (71,781)	$ (82,764)
$ (9)	$ (1.05)	Water	340220-Comp & Periph Personal	340220	10134010	340.5	(943,816)	(930,613)	$ 21,143	$ 148,830	$ 157,616	$ (1,125,660)	$ (1,006,859)
$ -	$ 87.39	Water	340230-Comp & Periph Other	340230	10134010	340.5	(454,587)	(465,586)	$ (22,596)	$ (145,581)	$ (132,082)	$ (287,759)	$ (399,253)
$ -	$ -	Water	340240-Comp & Periph Capital Lea	340240	10134010	340.5	0	0	$ -	$ -	$ -	$ -	$ -

Kentucky American Water
Case No. 2012-00520
Accumulated Depreciation & COR Balances by Month, September 2012 - December 2014

Automatically calculates Accum. Depr. & COR: Prior Month Balance - Current Month Depr. & COR Expense + Retirements - Monthly Salvage Credit + Monthly Cost of Removal Debit

Workpaper #: W/P - 1-2

Excel Ref: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Bal Accum Dep&COR

	Jun-14	Jul-14	Oct-Dec 2012	2013 Additions	2014 Additions	Base Per. as of 31-Mar-13	Forecast Per. 13-Month Average
Total Accum Life Dep & COR	$ (139,059,030)	$ (140,037,046)	$ (1,768,951)	$ (11,272,940)	$ (8,318,835)	$ (128,073,154)	$ (136,603,786)
Total Life Dep	$ (121,705,662)	$ (122,547,861)	$ (1,517,963)	$ (9,722,445)	$ (6,784,630)	$ (112,601,617)	$ (119,852,955)
Total COR	$ (17,353,369)	$ (17,489,185)	$ (250,988)	$ (1,550,494)	$ (1,534,205)	$ (15,471,537)	$ (16,750,831)

Monthly Salvage Credit	Monthly COR Debit	Utility	Account	Util. Plant Account	SAP G/L Account	NARUC Acct	Jun-14	Jul-14	Oct-Dec 2012	2013 Additions	2014 Additions	Base Per. 31-Mar-13	Forecast 13 Mo Avg
$ -	$ -	Water	340300-Computer Software	340300	10134010	340.5	(4,443,600)	(4,422,028)	$ 33,893	$ 240,346	$ 257,438	$ (4,738,712)	$ (4,546,240)
$ -	$ -	Water	340320-Comp Software Personal	340320	10134010	340.5	(227,780)	(220,751)	$ 14,059	$ 91,381	$ 84,352	$ (333,220)	$ (262,927)
$ -	$ -	Water	340325-Comp Software Customize	340325	10134010	340.5	(578,804)	(590,475)	$ (23,341)	$ (151,714)	$ (140,044)	$ (403,750)	$ (520,453)
$ -	$ -	Water	340330-Comp Software Other	340330	10134010	340.5	(750,745)	(752,939)	$ (4,388)	$ (28,522)	$ (26,328)	$ (717,834)	$ (739,775)
$ -	$ -	Water	340500-Other Office Equipment	340500	10134010	340.5	(62,203)	(61,768)	$ 760	$ 5,180	$ 5,206	$ (68,392)	$ (64,317)
$ (3,986)	$ -	Water	341100-Trans Equip Lt Duty Trks	341100	10134100	341.5	(753,300)	(734,335)	$ 37,283	$ 243,709	$ 226,791	$ (1,035,646)	$ (847,664)
$ (529)	$ -	Water	341200-Trans Equip Hvy Duty Trks	341200	10134100	341.5	(679,067)	(677,607)	$ 3,423	$ 21,111	$ 16,538	$ (702,302)	$ (686,502)
$ (338)	$ -	Water	341300-Trans Equip Autos	341300	10134100	341.5	(189,585)	(188,734)	$ 4,379	$ 22,488	$ 6,688	$ (209,812)	$ (194,805)
$ (413)	$ -	Water	341400-Trans Equip Other	341400	10134100	341.5	(228,021)	(229,769)	$ (3,730)	$ (23,741)	$ (21,016)	$ (201,077)	$ (219,147)
$ -	$ -	Water	342000-Stores Equipment	342000	10134200	342.5	(35,215)	(35,256)	$ (86)	$ (550)	$ (489)	$ (34,590)	$ (35,009)
$ -	$ 29.59	Water	343000-Tools,Shop,Garage Equip	343000	10134300	343.5	(1,243,040)	(1,251,721)	$ (12,491)	$ (95,123)	$ (102,521)	$ (1,127,054)	$ (1,203,412)
$ -	$ 381.46	Water	344000-Laboratory Equipment	344000	10134400	344.5	(752,151)	(753,312)	$ (2,857)	$ (17,585)	$ (14,028)	$ (732,963)	$ (746,019)
$ (236)	$ 14.59	Water	345000-Power Operated Equipmer	345000	10134500	345.5	(937,661)	(938,946)	$ (2,681)	$ (17,200)	$ (13,826)	$ (919,649)	$ (932,292)
$ -	$ 88.02	Water	346100-Comm Equip Non-Telepho	346100	10134600	346.5	(1,443,299)	(1,454,959)	$ (24,296)	$ (155,810)	$ (140,068)	$ (1,265,396)	$ (1,384,449)
$ -	$ 295.28	Water	346190-Remote Control & Instrum	346190	10134600	346.5	(404,580)	(426,574)	$ (16,432)	$ (166,267)	$ (250,407)	$ (153,662)	$ (308,863)
$ -	$ -	Water	346200-Comm Equip Telephone	346200	10134600	346.5	(101,759)	(103,512)	$ (3,506)	$ (22,791)	$ (21,038)	$ (75,462)	$ (92,993)
$ -	$ 28.81	Water	347000-Misc Equipment	347000	10134700	347.5	(710,675)	(716,523)	$ (9,890)	$ (71,661)	$ (63,648)	$ (630,715)	$ (686,262)
$ -	$ -	Water	348000-Other Tangible Property	348000	10134800	348.5	(210,447)	(208,761)	$ 5,395	$ 26,272	$ 20,322	$ (236,135)	$ (218,958)
$ -	$ -	Water	354200-WW Struct & Imp Collectio	354200	10135420	354.2	3,168	3,168	$ -	$ -	$ -	$ 3,168	$ 3,168
		Water	340315-Comp Software Specia	340315	10134010	340.5	(2,058,872)	(2,157,618)	$ (156,541)	$ (1,319,644)	$ (1,177,226)	$ (477,295)	$ (1,574,381)
		Water	339300-Other P/E-Treatment	339300	10133930	339.3	0	0	$ -	$ -	$ -	$ -	$ -
$ (11,358)	$ 43,878			**Total Unadjusted Balances**			**(139,059,030)**	**(140,037,046)**	**$ (1,768,951)**	**$ (12,159,287)**	**$ (8,318,835)**	**$ (128,073,154)**	**$ (136,603,786)**

Kentucky American Water
Case No. 2012-00520
Capital In-Servicing Activity by Month, September 2012 - December 2014
Per In-Service Date or Assumed Months in Construction
Workpaper #: W/P - 1-1 and W/P - 1-3
Excel : Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Actv PlacedInServc

	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13
Total Placed in Service:	$ 1,609,136	$ 1,939,260	$ 3,511,267	$ 1,264,968	$ 2,613,525

Account Key	Line #	FP#	Project Description	JDE / Utility Plant Account	SAP GL Account	NARUC Account	AFUDC Y/N	In-Service Date or # Months Construction	Water CWIP Bal Fwd Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13
331001	1	D12-**01-P	Projects Funded by Others	331001-T&D Mains	10133100	331.4	N	2	407,312		407,312	164,849	164,613	117,387
335000	2		Projects Funded by Others	335000-Hydrants	10133500	335.4	N	2	46,967		46,967	18,317	18,290	13,043
333000	3		Projects Funded by Others	333000-Services	10133300	333.4	N	2	55,037		55,037	-	-	-
334100	4		Projects Funded by Others	334100-Meters	10133410	334.4	N	2	1,861		1,861	-	-	-
334200	5		Projects Funded by Others	334200-Meter Installations	10133420	334.4	N	2	34,012		34,012	-	-	-
	6													
331001	7	R12-**A1	Mains - New	331001-T&D Mains	10133100	331.4	Y	2	12,092		12,092	63,008	150,988	684,150
	8													
331001	9	R12-**B1	Mains - Replaced / Restored	331001-T&D Mains	10133100	331.4	Y	2	101,600		101,600	260,878	222,990	462,234
333000	10		Mains - Replaced / Restored	333000-Services	10133300	333.4	Y	2			-	26,088	22,299	46,223
334100	11		Mains - Replaced / Restored	334100-Meters	10133410	334.4	Y	2			-	19,566	16,724	34,668
335000	12		Mains - Replaced / Restored	335000-Hydrants	10133500	335.4	Y	2	2,512		2,512	19,566	16,724	34,668
	13													
331001	14	R12-**C1	Mains - Unscheduled	331001-T&D Mains	10133100	331.4	N	1	-	25,261	20,428	32,275	21,162	21,010
	15													
331001	16	R12-**D1	Mains - Relocated	331001-T&D Mains	10133100	331.4	Y	2	-		-	-	90,000	250,200
335000	17		Mains - Relocated	335000-Hydrants	10133500	335.4	Y	2	-		-	-	10,000	27,800
	18													
335000	19	R12-**E1	Hydrants, Valves, and Manholes - New	335000-Hydrants	10133500	335.4	N	1	12,901	26,245	8,599	6,738	-	3,152
331001	20		Hydrants, Valves, and Manholes - New	331001-T&D Mains	10133100	331.4	N	1		8,896	5,733	4,492	-	2,101
	21													
335000	22	R12-**F1	Hydrants, Valves, and Manholes - Replaced	335000-Hydrants	10133500	335.4	N	1	(228)	(2,351)	(3,383)	(3,435)	10,715	10,715
331001	23		Hydrants, Valves, and Manholes - Replaced	331001-T&D Mains	10133100	331.4	N	1		(1,415)	(2,255)	(2,290)	7,144	7,144
	24													
333000	25	R12-**G1	Services and Laterals - New	333000-Services	10133300	333.4	N	1	-	103,881	105,830	85,268	69,333	73,535
	26													
333000	27	R12-**H1	Services and Laterals - Replaced	333000-Services	10133300	333.4	N	1	2,609	83,950	69,371	90,886	64,040	79,798
334200	28		Services and Laterals - Replaced	334200-Meter Installations	10133420	334.4	N	1	962	962	-	-	-	-
	29													
334100	30	R12-**I1	Meters - New	334100-Meters	10133410	334.4	N	1	168,382	272,768	93,880	111,581	24,267	25,737
	31													
334100	32	R12-**J1	Meters - Replaced	334100-Meters	10133410	334.4	N	1	2,523	493,490	460,866	1,431,975	15,758	309,855
334200	33		Meters - Replaced	334200-Meter Installations	10133420	334.4	N	1	(314)	(314)	-	-	-	-
	34													
334100	35	R12-**K1	ITS Equipment and Systems	334100-Meters	10133410	334.4	N	1	8,111	26,431	53,320	113,320	-	-
	36													
346190	37	R12-**L1	SCADA Equipment and Systems	346190-Remote Control & Instrum	10134600	346.5	Y	6	459,726					
	38													
304500	39	R12-**M1	Security Equipment and Systems	304500-Struct & Imp-General	10130450	304.5	N	1	-	3,502	14,007	3,502	-	-
	40													
304500	41	R12-**N1	Offices and Operations Centers	304500-Struct & Imp-General	10130450	304.5	N	1	68,165	12,716	44,551	(5,449)	-	-
304100	42		Offices and Operations Centers	304100-Struct & Imp-Supply	10130410	304.2	N	1	7,489	7,489	-	-	-	-
340100	43		Offices and Operations Centers	340100-Office Furniture & Equip	10134010	340.5	N	1	131,066	131,066	-	-	-	-
340300	44		Offices and Operations Centers	340300-Computer Software	10134010	340.5	N	1	7,894	7,894	-	-	-	-
346100	45		Offices and Operations Centers	346100-Comm Equip Non-Telepho	10134600	346.5	N	1	93,467	93,467	-	-	-	-
347000	46		Offices and Operations Centers	347000-Misc Equipment	10134700	347.5	N	1	12,332	12,332	-	-	-	-
	47													
341100	48	R12-**O1	Vehicles	341100-Trans Equip Lt Duty Trks	10134100	341.5	N	1	(206)	34,171	10,121	23,321	-	-
341200	49		Vehicles	341200-Trans Equip Hvy Duty Trks	10134100	341.5	N	1	-	34,377	10,121	23,321	-	-
341300	50		Vehicles	341300-Trans Equip Auto Car	10134100	341.5	N	1	(162)	35,256	10,428	24,028	-	-
	51													
343000	52	R12-**P1	Tools and Equipment	343000-Tools,Shop,Garage Equip	10134300	343.5	N	1	-	5,669	59,128	89,128	-	10,50[illegible]
	53													
304300	54	R12-**Q1	Process Plant Facilities and Equipment	304300-Struct & Imp-Treatment	10130430	304.3	Y	2	-		-	124,502	106,502	99,19[illegible]
306000	55		Process Plant Facilities and Equipment	306000-Lake, River & Other Intake	10130600	306.2	Y	2	1,494		1,494	46,688	39,938	37,19[illegible]
311200	56		Process Plant Facilities and Equipment	311000-Pumping Equipment	10131120	311.2	Y	2	14,743		14,743	77,814	66,564	61,998
320100	57		Process Plant Facilities and Equipment	320100-Wt Equip Non-Media	10132010	320.3	Y	2	-		-	31,126	26,626	24,79[illegible]
330200	58		Process Plant Facilities and Equipment	330200-Ground Level Tanks	10133000	330.4	Y	2	203,702		203,702	31,126	26,626	24,79[illegible]
344000	59		Process Plant Facilities and Equipment	344000-Laboratory Equipment	10134400	344.5	Y	2	7,157		7,157	-	-	-
	60													
339600	61	R12-**S1	Engineering Studies	339600-Other P/E-Cps	10133910	339.1	Y	6	400,277					
348000	62		Engineering Studies	348000-Other Tangible Property	10134800	348.5	Y	6	227,819					
	63													
340315	64	T12-0102-P	Business Transformation 2010 - 2014	340315-Comp Software Specia	10134010	340.5	Y	5/1/2013	3,772,437	-	-	-	-	-
340315	65		Business Transformation 2010 - 2014	340315-Comp Software Specia	10134010	340.5	Y	5/1/2013						

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Kentucky American Water
Case No. 2012-00520
Capital In-Servicing Activity by Month, September 2012 - December 2014
Per In-Service Date or Assumed Months in Construction
Workpaper #: W/P - 1-1 and W/P - 1-3
Excel : Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Actv PlacedInServc

	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13
Total Placed in Service:	$ 1,609,136	$ 1,939,260	$ 3,511,267	$ 1,264,968	$ 2,613,525

x Account Key	Line #	FP#	x Project Description	x JDE / Utility Plant Account	x SAP GL Account	x NARUC Account	x AFUDC Y/N	x In-Service Date or # Months Construction	x Water CWIP Bal Fwd Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13
	66													
340315	67	T12-0103-P	Business Transformation 2010 - 2014	340315-Comp Software Specia	10134010	340.5	Y	5/1/2013	$ 286,481	$ 66,505	$ 57,033	$ 56,937	$ 73,664	$ 151,610
	68													
331001	69	I12-020001	New WTP On Pool 3 of Kentucky	331001-T&D Mains	10133100	331.4	N	9/20/2010	$ 5,484	$ 23,894				
	70													
330200	71	I12-020027	Russell Cave Rd Main Extension	330200-Ground Level Tanks	10133000	330.4	N	7/15/2012	$ 553,227			$ 509,148		
	72													
331001	73	I12-020009	US 25 Relocation	331001-T&D Mains	10133100	331.4	N	7/30/2012		$ 82,395	$ 26,395	$ 26,395		
333000	74		US 25 Relocation	333000-Services	10133300	333.4	N	7/30/2012		$ 10,299	$ 3,299	$ 3,299		
335000	75		US 25 Relocation	335000-Hydrants	10133500	335.4	N	7/30/2012		$ 10,299	$ 3,299	$ 3,299		
	76													
331001	77	I12-020010	Leestown Road	331001-T&D Mains	10133100	331.4	Y	4/15/2013	$ 995,789					
333000	78		Leestown Road	333000-Services	10133300	333.4	Y	4/15/2013						
335000	79		Leestown Road	335000-Hydrants	10133500	335.4	Y	4/15/2013						
	80													
311200	81	I12-020025	Pump Efficiency Replacement	311000-Pumping Equipment	10131120	311.2	Y	4/15/2013	$ 31,380					
311200	82		Pump Efficiency Replacement	311200-Pump Eqp Electric	10131120	311.2	Y	4/15/2013	$ 54,201					
339300	83		Pump Efficiency Replacement	339300-Other P/E-Treatment	10133930	339.3	Y	4/15/2013	$ 5,705					
346190	84		Pump Efficiency Replacement	346190-Remote Control & Instrum	10134600	346.5	Y	4/15/2013	$ 1,141					
347000	85		Pump Efficiency Replacement	347000-Misc Equipment	10134700	347.5	Y	4/15/2013	$ 7,417					
	86													
303500	87	I12-300003	Northern Division Connection	303500-Land & Land Rights-T&D	10130350	303.4	Y	12/28/2013	$ 154,790					
331001	88		Northern Division Connection	331001-T&D Mains	10133100	331.4	Y	12/28/2013	$ 529,836					
311540	89		Northern Division Connection	311540-Pumping Equipment Td	10131154	311.4	Y	12/28/2013	$ -					
311200	90		Northern Division Connection	311200-Pump Eqp Electric	10131120	311.2	Y	12/28/2013	$ -					
346190	91		Northern Division Connection	346190-Remote Control & Instrum	10134600	346.5	Y	12/28/2013	$ -					
330100	92		Northern Division Connection	330100-Elevated Tanks & Standpip	10133000	330.4	Y	12/28/2013	$ -					
	93													
331001	94	IP-1202-9	Todds and Cleveland Rd Main Extension	331001-T&D Mains	10133100	331.4	Y	11/15/2014						
335000	95		Todds and Cleveland Rd Main Extension	335000-Hydrants	10133500	335.4	Y	11/15/2014						
	96													
304300	97	IP-1202-10	KRS Clearwell Improvements (332)	304300-Struct & Imp-Treatment	10130430	304.3	Y	6/15/2015						
	98													
331001	99	IP-1202-11	I-75 Main Extension	331001-T&D Mains	10133100	331.4	Y	11/15/2014						
335000	100		I-75 Main Extension	335000-Hydrants	10133500	335.4	Y	11/15/2014						
	101													
331001	102	IP-1202-13	Greenwich Rd Main Extension	331001-T&D Mains	10133100	331.4	Y	10/15/2014						
335000	103		Greenwich Rd Main Extension	335000-Hydrants	10133500	335.4	Y	10/15/2014						
	104													
331001	105	IP-1202-16	North Upper St Main Replacement (343)	331001-T&D Mains	10133100	331.4	Y	12/15/2014						
333000	106		North Upper St Main Replacement (343)	333000-Services	10133300	333.4	Y	12/15/2014						
335000	107		North Upper St Main Replacement (343)	335000-Hydrants	10133500	335.4	Y	12/15/2014						
	108													
331001	109	IP-1202-20	KY Major Highway	331001-T&D Mains	10133100	331.4	Y	12/15/2014						
333000	110		KY Major Highway	333000-Services	10133300	333.4	Y	12/15/2014						
335000	111		KY Major Highway	335000-Hydrants	10133500	335.4	Y	12/15/2014						
	112													
304300	113	IP-1202-23	RRS Carbon and Pre-Chlorine Feed	304300-Struct & Imp-Treatment	10130430	304.3	Y	9/15/2014						
311200	114		RRS Carbon and Pre-Chlorine Feed	311000-Pumping Equipment	10131120	311.2	Y	9/15/2014						
311200	115		RRS Carbon and Pre-Chlorine Feed	311200-Pump Eqp Electric	10131120	311.2	Y	9/15/2014						
320100	116		RRS Carbon and Pre-Chlorine Feed	320100-Wt Equip Non-Media	10132010	320.3	Y	9/15/2014						
	117													
334100	118	IP-1202-27	KRS Hydrotreater Valve & Flow Meter	334100-Meters	10133410	334.4	Y	7/30/2014						
334200	119		KRS Hydrotreater Valve & Flow Meter	334200-Meter Installations	10133420	334.4	Y	7/30/2014						
334300	120		KRS Hydrotreater Valve & Flow Meter	334300-Meter Vaults	10133410	334.4	Y	7/30/2014						
	121													
311200	122	IP-1202-39	Pump Efficiency Repl	311000-Pumping Equipment	10131120	311.2	Y	9/25/2014						
311200	123		Pump Efficiency Repl	311200-Pump Eqp Electric	10131120	311.2	Y	9/25/2014						
339300	124		Pump Efficiency Repl	339300-Other P/E-Treatment	10133930	339.3	Y	9/25/2014						
346190	125		Pump Efficiency Repl	346190-Remote Control & Instrum	10134600	346.5	Y	9/25/2014						
347000	126		Pump Efficiency Repl	347000-Misc Equipment	10134700	347.5	Y	9/25/2014						

Kentucky American Water
Case No. 2012-00520
Capital In-Servicing Activity by Month, September 2012 - December 2014
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Workpaper #: W/P - 1-1 and W/P - 1-3
Excel : Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Actv PlacedInServc

	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13
Total Placed in Service:	$ 1,589,311	$ 4,988,843	$ 7,389,209	$ 2,087,418	$ 1,677,835	$ 1,473,567

x Account Key	Line #	FP#	Project Description	JDE / Utility Plant Account	SAP GL Account	NARUC Account	AFUDC Y/N	In-Service Date or # Months Construction	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13
331001	1	D12-**01-P	Projects Funded by Others	331001-T&D Mains	10133100	331.4	N	2	$ 75,636	$ 118,182	$ 137,091	$ 146,545	$ 156,000	$ 184,363
335000	2		Projects Funded by Others	335000-Hydrants	10133500	335.4	N	2	$ 8,404	$ 13,131	$ 15,232	$ 16,283	$ 17,333	$ 20,485
333000	3		Projects Funded by Others	333000-Services	10133300	333.4	N	2	$ -	$ -	$ -	$ -	$ -	$ -
334100	4		Projects Funded by Others	334100-Meters	10133410	334.4	N	2	$ -	$ -	$ -	$ -	$ -	$ -
334200	5		Projects Funded by Others	334200-Meter Installations	10133420	334.4	N	2	$ -	$ -	$ -	$ -	$ -	$ -
	6													
331001	7	R12-**A1	Mains - New	331001-T&D Mains	10133100	331.4	Y	2	$ -	$ -	$ -	$ 10,505	$ 26,263	$ 31,516
	8													
331001	9	R12-**B1	Mains - Replaced / Restored	331001-T&D Mains	10133100	331.4	Y	2	$ 5,364	$ 12,606	$ 70,222	$ 88,242	$ 150,464	$ 200,080
333000	10		Mains - Replaced / Restored	333000-Services	10133300	333.4	Y	2	$ 536	$ 1,261	$ 7,022	$ 8,824	$ 15,046	$ 20,008
334100	11		Mains - Replaced / Restored	334100-Meters	10133410	334.4	Y	2	$ 402	$ 945	$ 5,267	$ 6,618	$ 11,285	$ 15,006
335000	12		Mains - Replaced / Restored	335000-Hydrants	10133500	335.4	Y	2	$ 402	$ 945	$ 5,267	$ 6,618	$ 11,285	$ 15,006
	13													
331001	14	R12-**C1	Mains - Unscheduled	331001-T&D Mains	10133100	331.4	N	1	$ 34,768	$ 14,707	$ 21,010	$ 18,909	$ 15,758	$ 24,162
	15													
331001	16	R12-**D1	Mains - Relocated	331001-T&D Mains	10133100	331.4	Y	2	$ -	$ -	$ -	$ 4,728	$ 9,455	$ 28,364
335000	17		Mains - Relocated	335000-Hydrants	10133500	335.4	Y	2	$ -	$ -	$ -	$ 525	$ 1,051	$ 3,152
	18													
335000	19	R12-**E1	Hydrants, Valves, and Manholes - New	335000-Hydrants	10133500	335.4	N	1	$ 6,303	$ 13,552	$ 15,758	$ 12,606	$ 15,758	$ 16,798
331001	20		Hydrants, Valves, and Manholes - New	331001-T&D Mains	10133100	331.4	N	1	$ 4,202	$ 9,034	$ 10,505	$ 8,404	$ 10,505	$ 11,198
	21													
335000	22	R12-**F1	Hydrants, Valves, and Manholes - Replaced	335000-Hydrants	10133500	335.4	N	1	$ 20,170	$ 10,085	$ 10,085	$ 16,388	$ 17,648	$ 13,867
331001	23		Hydrants, Valves, and Manholes - Replaced	331001-T&D Mains	10133100	331.4	N	1	$ 13,447	$ 6,724	$ 6,724	$ 10,926	$ 11,766	$ 9,245
	24													
333000	25	R12-**G1	Services and Laterals - New	333000-Services	10133300	333.4	N	1	$ 93,495	$ 95,324	$ 101,623	$ 103,724	$ 95,742	$ 101,318
	26													
333000	27	R12-**H1	Services and Laterals - Replaced	333000-Services	10133300	333.4	N	1	$ 89,555	$ 86,654	$ 93,071	$ 91,981	$ 99,121	$ 92,818
334200	28		Services and Laterals - Replaced	334200-Meter Installations	10133420	334.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -
	29													
334100	30	R12-**I1	Meters - New	334100-Meters	10133410	334.4	N	1	$ 31,620	$ 48,639	$ 59,879	$ 65,131	$ 59,879	$ 46,747
	31													
334100	32	R12-**J1	Meters - Replaced	334100-Meters	10133410	334.4	N	1	$ 81,939	$ 459,594	$ 576,443	$ 513,845	$ 221,468	$ 97,697
334200	33		Meters - Replaced	334200-Meter Installations	10133420	334.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -
	34													
334100	35	R12-**K1	ITS Equipment and Systems	334100-Meters	10133410	334.4	N	1	$ 16,000	$ 112,227	$ 70,703	$ -	$ 43,087	$ -
	36													
346190	37	R12-**L1	SCADA Equipment and Systems	346190-Remote Control & Instrum	10134600	346.5	Y	6	$ 459,726	$ 40,634	$ 82,654	$ 479,328	$ -	$ -
	38													
304500	39	R12-**M1	Security Equipment and Systems	304500-Struct & Imp-General	10130450	304.5	N	1	$ -	$ -	$ -	$ 21,010	$ 26,263	$ 26,263
	40													
304500	41	R12-**N1	Offices and Operations Centers	304500-Struct & Imp-General	10130450	304.5	N	1	$ -	$ -	$ 21,010	$ -	$ 21,010	$ -
304100	42		Offices and Operations Centers	304100-Struct & Imp-Supply	10130410	304.2	N	1	$ -	$ -	$ -	$ -	$ -	$ -
340100	43		Offices and Operations Centers	340100-Office Furniture & Equip	10134010	340.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -
340300	44		Offices and Operations Centers	340300-Computer Software	10134010	340.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -
346100	45		Offices and Operations Centers	346100-Comm Equip Non-Telepho	10134600	346.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -
347000	46		Offices and Operations Centers	347000-Misc Equipment	10134700	347.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -
	47													
341100	48	R12-**O1	Vehicles	341100-Trans Equip Lt Duty Trks	10134100	341.5	N	1	$ -	$ -	$ 17,333	$ -	$ 109,200	$ -
341200	49		Vehicles	341200-Trans Equip Hvy Duty Trks	10134100	341.5	N	1	$ -	$ -	$ 17,333	$ -	$ 109,200	$ -
341300	50		Vehicles	341300-Trans Equip Auto Car	10134100	341.5	N	1	$ -	$ -	$ 17,859	$ -	$ 112,509	$ -
	51													
343000	52	R12-**P1	Tools and Equipment	343000-Tools,Shop,Garage Equip	10134300	343.5	N	1	$ 13,657	$ 47,273	$ 115,556	$ 10,505	$ 5,253	$ 105,048
	53													
304300	54	R12-**Q1	Process Plant Facilities and Equipment	304300-Struct & Imp-Treatment	10130430	304.3	Y	2	$ -	$ -	$ 16,598	$ 76,698	$ 21,010	$ 104,711
306000	55		Process Plant Facilities and Equipment	306000-Lake, River & Other Intake	10130600	306.2	Y	2	$ -	$ -	$ 6,224	$ 28,762	$ 7,879	$ 39,267
311200	56		Process Plant Facilities and Equipment	311000-Pumping Equipment	10131120	311.2	Y	2	$ -	$ -	$ 10,374	$ 47,936	$ 13,131	$ 65,445
320100	57		Process Plant Facilities and Equipment	320100-Wt Equip Non-Media	10132010	320.3	Y	2	$ -	$ -	$ 4,150	$ 19,175	$ 5,253	$ 26,178
330200	58		Process Plant Facilities and Equipment	330200-Ground Level Tanks	10133000	330.4	Y	2	$ -	$ -	$ 4,150	$ 19,175	$ 5,253	$ 26,178
344000	59		Process Plant Facilities and Equipment	344000-Laboratory Equipment	10134400	344.5	Y	2	$ -	$ -	$ -	$ -	$ -	$ -
	60													
339600	61	R12-**S1	Engineering Studies	339600-Other P/E-Cps	10133910	339.1	Y	6	$ 400,277	$ 16,474	$ 16,474	$ 16,474	$ -	$ -
348000	62		Engineering Studies	348000-Other Tangible Property	10134800	348.5	Y	6	$ 227,819	$ 2,907	$ 2,907	$ 2,907	$ -	$ -
	63													
340315	64	T12-0102-P	Business Transformation 2010 - 2014	340315-Comp Software Specia	10134010	340.5	Y	5/1/2013	$ -	$ -	$ 5,758,461	$ 107,421	$ 125,738	$ 121,423
340315	65		Business Transformation 2010 - 2014	340315-Comp Software Specia	10134010	340.5	Y	5/1/2013						

Kentucky American Water
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Excel : Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Actv PlacedInServc

									Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13
								Total Placed in Service:	$ 1,589,311	$ 4,988,843	$ 7,389,209	$ 2,087,418	$ 1,677,835	$ 1,473,567
x Account Key	Line #	FP# x	Project Description x	JDE / Utility Plant Account x	SAP GL Account x	NARUC Account x	AFUDC Y/N x	In-Service Date or # Months Construction	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13
	66													
340315	67	T12-0103-P	Business Transformation 2010 - 2014	340315-Comp Software Specia	10134010	340.5	Y	5/1/2013	$ 5,587	$ 5,587	$ 2,225	$ 2,225	$ 2,225	$ 2,225
	68													
331001	69	I12-020001	New WTP On Pool 3 of Kentucky	331001-T&D Mains	10133100	331.4	N	9/20/2010						
	70													
330200	71	I12-020027	Russell Cave Rd Main Extension	330200-Ground Level Tanks	10133000	330.4	N	7/15/2012						
	72													
331001	73	I12-020009	US 25 Relocation	331001-T&D Mains	10133100	331.4	N	7/30/2012						
333000	74		US 25 Relocation	333000-Services	10133300	333.4	N	7/30/2012						
335000	75		US 25 Relocation	335000-Hydrants	10133500	335.4	N	7/30/2012						
	76													
331001	77	I12-020010	Leestown Road	331001-T&D Mains	10133100	331.4	Y	4/15/2013		$ 1,658,056	$ 34,000			
333000	78		Leestown Road	333000-Services	10133300	333.4	Y	4/15/2013		$ 77,914	$ 4,000			
335000	79		Leestown Road	335000-Hydrants	10133500	335.4	Y	4/15/2013		$ 38,957	$ 2,000			
	80													
311200	81	I12-020025	Pump Efficiency Replacement	311000-Pumping Equipment	10131120	311.2	Y	4/15/2013		$ 830,414	$ 20,000	$ 50,000	$ 50,000	$ 10,000
311200	82		Pump Efficiency Replacement	311200-Pump Eqp Electric	10131120	311.2	Y	4/15/2013		$ 653,477	$ 15,000	$ 37,500	$ 37,500	$ 7,500
339300	83		Pump Efficiency Replacement	339300-Other P/E-Treatment	10133930	339.3	Y	4/15/2013		$ 205,464	$ 5,000	$ 12,500	$ 12,500	$ 2,500
346190	84		Pump Efficiency Replacement	346190-Remote Control & Instrum	10134600	346.5	Y	4/15/2013		$ 200,900	$ 5,000	$ 12,500	$ 12,500	$ 2,500
347000	85		Pump Efficiency Replacement	347000-Misc Equipment	10134700	347.5	Y	4/15/2013		$ 207,176	$ 5,000	$ 12,500	$ 12,500	$ 2,500
	86													
303500	87	I12-300003	Northern Division Connection	303500-Land & Land Rights-T&D	10130350	303.4	Y	12/28/2013						
331001	88		Northern Division Connection	331001-T&D Mains	10133100	331.4	Y	12/28/2013						
311540	89		Northern Division Connection	311540-Pumping Equipment Td	10131154	311.4	Y	12/28/2013						
311200	90		Northern Division Connection	311200-Pump Eqp Electric	10131120	311.2	Y	12/28/2013						
346190	91		Northern Division Connection	346190-Remote Control & Instrum	10134600	346.5	Y	12/28/2013						
330100	92		Northern Division Connection	330100-Elevated Tanks & Standpip	10133000	330.4	Y	12/28/2013						
	93													
331001	94	IP-1202-9	Todds and Cleveland Rd Main Extension	331001-T&D Mains	10133100	331.4	Y	11/15/2014						
335000	95		Todds and Cleveland Rd Main Extension	335000-Hydrants	10133500	335.4	Y	11/15/2014						
	96													
304300	97	IP-1202-10	KRS Clearwell Improvements (332)	304300-Struct & Imp-Treatment	10130430	304.3	Y	6/15/2015						
	98													
331001	99	IP-1202-11	I-75 Main Extension	331001-T&D Mains	10133100	331.4	Y	11/15/2014						
335000	100		I-75 Main Extension	335000-Hydrants	10133500	335.4	Y	11/15/2014						
	101													
331001	102	IP-1202-13	Greenwich Rd Main Extension	331001-T&D Mains	10133100	331.4	Y	10/15/2014						
335000	103		Greenwich Rd Main Extension	335000-Hydrants	10133500	335.4	Y	10/15/2014						
	104													
331001	105	IP-1202-16	North Upper St Main Replacement (343)	331001-T&D Mains	10133100	331.4	Y	12/15/2014						
333000	106		North Upper St Main Replacement (343)	333000-Services	10133300	333.4	Y	12/15/2014						
335000	107		North Upper St Main Replacement (343)	335000-Hydrants	10133500	335.4	Y	12/15/2014						
	108													
331001	109	IP-1202-20	KY Major Highway	331001-T&D Mains	10133100	331.4	Y	12/15/2014						
333000	110		KY Major Highway	333000-Services	10133300	333.4	Y	12/15/2014						
335000	111		KY Major Highway	335000-Hydrants	10133500	335.4	Y	12/15/2014						
	112													
304300	113	IP-1202-23	RRS Carbon and Pre-Chlorine Feed	304300-Struct & Imp-Treatment	10130430	304.3	Y	9/15/2014						
311200	114		RRS Carbon and Pre-Chlorine Feed	311000-Pumping Equipment	10131120	311.2	Y	9/15/2014						
311200	115		RRS Carbon and Pre-Chlorine Feed	311200-Pump Eqp Electric	10131120	311.2	Y	9/15/2014						
320100	116		RRS Carbon and Pre-Chlorine Feed	320100-Wt Equip Non-Media	10132010	320.3	Y	9/15/2014						
	117													
334100	118	IP-1202-27	KRS Hydrotreater Valve & Flow Meter	334100-Meters	10133410	334.4	Y	7/30/2014						
334200	119		KRS Hydrotreater Valve & Flow Meter	334200-Meter Installations	10133420	334.4	Y	7/30/2014						
334300	120		KRS Hydrotreater Valve & Flow Meter	334300-Meter Vaults	10133410	334.4	Y	7/30/2014						
	121													
311200	122	IP-1202-39	Pump Efficiency Repl	311000-Pumping Equipment	10131120	311.2	Y	9/25/2014						
311200	123		Pump Efficiency Repl	311200-Pump Eqp Electric	10131120	311.2	Y	9/25/2014						
339300	124		Pump Efficiency Repl	339300-Other P/E-Treatment	10133930	339.3	Y	9/25/2014						
346190	125		Pump Efficiency Repl	346190-Remote Control & Instrum	10134600	346.5	Y	9/25/2014						
347000	126		Pump Efficiency Repl	347000-Misc Equipment	10134700	347.5	Y	9/25/2014						

Kentucky American Water
Case No. 2012-00520
Capital In-Servicing Activity by Month, September 2012 - December 2014
Per In-Service Date or Assumed Months in Construction
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Excel : Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Actv PlacedInServc

x Account Key	Line #	FP# x	Project Description x	JDE / Utility Plant Account x	SAP GL Account x	NARUC Account x	AFUDC Y/N x	In-Service Date or # Months Construction	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14
								Total Placed in Service:	$ 1,647,321	$ 1,280,234	$ 1,327,303	$ 15,539,119	$ 789,186	$ 1,224,178
331001	1	D12-**01-P	Projects Funded by Others	331001-T&D Mains	10133100	331.4	N	2	$ 186,253	$ 179,636	$ 156,000	$ 176,381	$ 208,182	$ 157,542
335000	2		Projects Funded by Others	335000-Hydrants	10133500	335.4	N	2	$ 20,695	$ 19,960	$ 17,333	$ 19,598	$ 23,131	$ 17,505
333000	3		Projects Funded by Others	333000-Services	10133300	333.4	N	2	$ -	$ -	$ -	$ -	$ -	$ -
334100	4		Projects Funded by Others	334100-Meters	10133410	334.4	N	2	$ -	$ -	$ -	$ -	$ -	$ -
334200	5		Projects Funded by Others	334200-Meter Installations	10133420	334.4	N	2	$ -	$ -	$ -	$ -	$ -	$ -
	6													
331001	7	R12-**A1	Mains - New	331001-T&D Mains	10133100	331.4	Y	2	$ 57,778	$ 52,526	$ 34,667	$ 15,736	$ 10,505	$ 10,503
	8													
331001	9	R12-**B1	Mains - Replaced / Restored	331001-T&D Mains	10133100	331.4	Y	2	$ 221,494	$ 222,706	$ 231,110	$ 163,878	$ 136,340	$ 76,982
333000	10		Mains - Replaced / Restored	333000-Services	10133300	333.4	Y	2	$ 22,149	$ 22,271	$ 23,111	$ 16,388	$ 13,634	$ 7,698
334100	11		Mains - Replaced / Restored	334100-Meters	10133410	334.4	Y	2	$ 16,612	$ 16,703	$ 17,333	$ 12,291	$ 10,225	$ 5,774
335000	12		Mains - Replaced / Restored	335000-Hydrants	10133500	335.4	Y	2	$ 16,612	$ 16,703	$ 17,333	$ 12,291	$ 10,225	$ 5,774
	13													
331001	14	R12-**C1	Mains - Unscheduled	331001-T&D Mains	10133100	331.4	N	1	$ 21,010	$ 32,566	$ 25,212	$ 19,957	$ 21,162	$ 21,010
	15													
331001	16	R12-**D1	Mains - Relocated	331001-T&D Mains	10133100	331.4	Y	2	$ 55,782	$ 75,636	$ 94,545	$ 94,545	$ 47,273	$ 21,744
335000	17		Mains - Relocated	335000-Hydrants	10133500	335.4	Y	2	$ 6,198	$ 8,404	$ 10,505	$ 10,505	$ 5,253	$ 2,416
	18													
335000	19	R12-**E1	Hydrants, Valves, and Manholes - New	335000-Hydrants	10133500	335.4	N	1	$ 12,606	$ 7,312	$ 4,003	$ 3,150	$ -	$ 3,152
331001	20		Hydrants, Valves, and Manholes - New	331001-T&D Mains	10133100	331.4	N	1	$ 8,404	$ 4,874	$ 2,668	$ 2,100	$ -	$ 2,101
	21													
335000	22	R12-**F1	Hydrants, Valves, and Manholes - Replaced	335000-Hydrants	10133500	335.4	N	1	$ 16,388	$ 41,600	$ 6,304	$ 6,297	$ 10,715	$ 10,715
331001	23		Hydrants, Valves, and Manholes - Replaced	331001-T&D Mains	10133100	331.4	N	1	$ 10,926	$ 27,734	$ 4,202	$ 4,198	$ 7,144	$ 7,144
	24													
333000	25	R12-**G1	Services and Laterals - New	333000-Services	10133300	333.4	N	1	$ 94,545	$ 78,788	$ 66,180	$ 52,525	$ 69,333	$ 73,535
	26													
333000	27	R12-**H1	Services and Laterals - Replaced	333000-Services	10133300	333.4	N	1	$ 71,434	$ 85,518	$ 63,030	$ 85,897	$ 64,040	$ 79,798
334200	28		Services and Laterals - Replaced	334200-Meter Installations	10133420	334.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -
	29													
334100	30	R12-**I1	Meters - New	334100-Meters	10133410	334.4	N	1	$ 36,768	$ 40,969	$ 38,868	$ 25,736	$ 24,267	$ 25,737
	31													
334100	32	R12-**J1	Meters - Replaced	334100-Meters	10133410	334.4	N	1	$ 22,061	$ 23,112	$ 19,960	$ 21,007	$ 15,758	$ 309,855
334200	33		Meters - Replaced	334200-Meter Installations	10133420	334.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -
	34													
334100	35	R12-**K1	ITS Equipment and Systems	334100-Meters	10133410	334.4	N	1	$ 73,788	$ -	$ -	$ -	$ -	$ -
	36													
346190	37	R12-**L1	SCADA Equipment and Systems	346190-Remote Control & Instrum	10134600	346.5	Y	6	$ 321,658	$ 10,505	$ 4,727	$ -	$ 26,263	$ 321,658
	38													
304500	39	R12-**M1	Security Equipment and Systems	304500-Struct & Imp-General	10130450	304.5	N	1	$ 52,525	$ 52,525	$ 26,263	$ 5,251	$ -	$ -
	40													
304500	41	R12-**N1	Offices and Operations Centers	304500-Struct & Imp-General	10130450	304.5	N	1	$ -	$ 21,010	$ 21,010	$ 21,010	$ -	$ -
304100	42		Offices and Operations Centers	304100-Struct & Imp-Supply	10130410	304.2	N	1	$ -	$ -	$ -	$ -	$ -	$ -
340100	43		Offices and Operations Centers	340100-Office Furniture & Equip	10134010	340.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -
340300	44		Offices and Operations Centers	340300-Computer Software	10134010	340.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -
346100	45		Offices and Operations Centers	346100-Comm Equip Non-Telepho	10134600	346.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -
347000	46		Offices and Operations Centers	347000-Misc Equipment	10134700	347.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -
	47													
341100	48	R12-**O1	Vehicles	341100-Trans Equip Lt Duty Trks	10134100	341.5	N	1	$ -	$ -	$ 52,000	$ -	$ -	$ -
341200	49		Vehicles	341200-Trans Equip Hvy Duty Trks	10134100	341.5	N	1	$ -	$ -	$ 52,000	$ -	$ -	$ -
341300	50		Vehicles	341300-Trans Equip Auto Car	10134100	341.5	N	1	$ -	$ -	$ 53,576	$ -	$ -	$ -
	51													
343000	52	R12-**P1	Tools and Equipment	343000-Tools,Shop,Garage Equip	10134300	343.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -
	53													
304300	54	R12-**Q1	Process Plant Facilities and Equipment	304300-Struct & Imp-Treatment	10130430	304.3	Y	2	$ 73,535	$ 50,085	$ 87,898	$ 71,838	$ 8,403	$ -
306000	55		Process Plant Facilities and Equipment	306000-Lake, River & Other Intake	10130600	306.2	Y	2	$ 27,576	$ 18,782	$ 32,962	$ 26,939	$ 3,151	$ -
311200	56		Process Plant Facilities and Equipment	311000-Pumping Equipment	10131120	311.2	Y	2	$ 45,960	$ 31,303	$ 54,936	$ 44,899	$ 5,252	$ -
320100	57		Process Plant Facilities and Equipment	320100-Wt Equip Non-Media	10132010	320.3	Y	2	$ 18,384	$ 12,521	$ 21,975	$ 17,960	$ 2,101	$ -
330200	58		Process Plant Facilities and Equipment	330200-Ground Level Tanks	10133000	330.4	Y	2	$ 18,384	$ 12,521	$ 21,975	$ 17,960	$ 2,101	$ -
344000	59		Process Plant Facilities and Equipment	344000-Laboratory Equipment	10134400	344.5	Y	2	$ -	$ -	$ -	$ -	$ -	$ -
	60													
339600	61	R12-**S1	Engineering Studies	339600-Other P/E-Cps	10133910	339.1	Y	6	$ -	$ -	$ -	$ -	$ -	$ 8,929
348000	62		Engineering Studies	348000-Other Tangible Property	10134800	348.5	Y	6	$ -	$ -	$ -	$ -	$ -	$ 1,576
	63													
340315	64	T12-0102-P	Business Transformation 2010 - 2014	340315-Comp Software Specia	10134010	340.5	Y	5/1/2013	$ 115,572	$ 111,740	$ 65,618	$ 64,273	$ 38,834	$ 37,851
340315	65		Business Transformation 2010 - 2014	340315-Comp Software Specia	10134010	340.5	Y	5/1/2013						

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Excel : Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Actv PlacedInServc

	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14
Total Placed in Service:	$ 1,647,321	$ 1,280,234	$ 1,327,303	$ 15,539,119	$ 789,186	$ 1,224,178

x Account Key	Line #	FP#	x Project Description	x JDE / Utility Plant Account	x SAP GL Account	x NARUC Account	x AFUDC Y/N	x In-Service Date or # Months Construction	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14
	66													
340315	67	T12-0103-P	Business Transformation 2010 - 2014	340315-Comp Software Specia	10134010	340.5	Y	5/1/2013	$ 2,225	$ 2,225				
	68													
331001	69	I12-020001	New WTP On Pool 3 of Kentucky	331001-T&D Mains	10133100	331.4	N	9/20/2010						
	70													
330200	71	I12-020027	Russell Cave Rd Main Extension	330200-Ground Level Tanks	10133000	330.4	N	7/15/2012						
	72													
331001	73	I12-020009	US 25 Relocation	331001-T&D Mains	10133100	331.4	N	7/30/2012						
333000	74		US 25 Relocation	333000-Services	10133300	333.4	N	7/30/2012						
335000	75		US 25 Relocation	335000-Hydrants	10133500	335.4	N	7/30/2012						
	76													
331001	77	I12-020010	Leestown Road	331001-T&D Mains	10133100	331.4	Y	4/15/2013						
333000	78		Leestown Road	333000-Services	10133300	333.4	Y	4/15/2013						
335000	79		Leestown Road	335000-Hydrants	10133500	335.4	Y	4/15/2013						
	80													
311200	81	I12-020025	Pump Efficiency Replacement	311000-Pumping Equipment	10131120	311.2	Y	4/15/2013						
311200	82		Pump Efficiency Replacement	311200-Pump Eqp Electric	10131120	311.2	Y	4/15/2013						
339300	83		Pump Efficiency Replacement	339300-Other P/E-Treatment	10133930	339.3	Y	4/15/2013						
346190	84		Pump Efficiency Replacement	346190-Remote Control & Instrum	10134600	346.5	Y	4/15/2013						
347000	85		Pump Efficiency Replacement	347000-Misc Equipment	10134700	347.5	Y	4/15/2013						
	86													
303500	87	I12-300003	Northern Division Connection	303500-Land & Land Rights-T&D	10130350	303.4	Y	12/28/2013				$ 362,419	$ 388	$ 228
331001	88		Northern Division Connection	331001-T&D Mains	10133100	331.4	Y	12/28/2013				$ 10,011,527	$ 17,738	$ 10,398
311540	89		Northern Division Connection	311540-Pumping Equipment Td	10131154	311.4	Y	12/28/2013				$ 346,047	$ 647	$ 379
311200	90		Northern Division Connection	311200-Pump Eqp Electric	10131120	311.2	Y	12/28/2013				$ 276,838	$ 518	$ 304
346190	91		Northern Division Connection	346190-Remote Control & Instrum	10134600	346.5	Y	12/28/2013				$ 69,209	$ 129	$ 76
330100	92		Northern Division Connection	330100-Elevated Tanks & Standpip	10133000	330.4	Y	12/28/2013				$ 3,460,471	$ 6,474	$ 3,795
	93													
331001	94	IP-1202-9	Todds and Cleveland Rd Main Extension	331001-T&D Mains	10133100	331.4	Y	11/15/2014						
335000	95		Todds and Cleveland Rd Main Extension	335000-Hydrants	10133500	335.4	Y	11/15/2014						
	96													
304300	97	IP-1202-10	KRS Clearwell Improvements (332)	304300-Struct & Imp-Treatment	10130430	304.3	Y	6/15/2015						
	98													
331001	99	IP-1202-11	I-75 Main Extension	331001-T&D Mains	10133100	331.4	Y	11/15/2014						
335000	100		I-75 Main Extension	335000-Hydrants	10133500	335.4	Y	11/15/2014						
	101													
331001	102	IP-1202-13	Greenwich Rd Main Extension	331001-T&D Mains	10133100	331.4	Y	10/15/2014						
335000	103		Greenwich Rd Main Extension	335000-Hydrants	10133500	335.4	Y	10/15/2014						
	104													
331001	105	IP-1202-16	North Upper St Main Replacement (343)	331001-T&D Mains	10133100	331.4	Y	12/15/2014						
333000	106		North Upper St Main Replacement (343)	333000-Services	10133300	333.4	Y	12/15/2014						
335000	107		North Upper St Main Replacement (343)	335000-Hydrants	10133500	335.4	Y	12/15/2014						
	108													
331001	109	IP-1202-20	KY Major Highway	331001-T&D Mains	10133100	331.4	Y	12/15/2014						
333000	110		KY Major Highway	333000-Services	10133300	333.4	Y	12/15/2014						
335000	111		KY Major Highway	335000-Hydrants	10133500	335.4	Y	12/15/2014						
	112													
304300	113	IP-1202-23	RRS Carbon and Pre-Chlorine Feed	304300-Struct & Imp-Treatment	10130430	304.3	Y	9/15/2014						
311200	114		RRS Carbon and Pre-Chlorine Feed	311000-Pumping Equipment	10131120	311.2	Y	9/15/2014						
311200	115		RRS Carbon and Pre-Chlorine Feed	311200-Pump Eqp Electric	10131120	311.2	Y	9/15/2014						
320100	116		RRS Carbon and Pre-Chlorine Feed	320100-Wt Equip Non-Media	10132010	320.3	Y	9/15/2014						
	117													
334100	118	IP-1202-27	KRS Hydrotreater Valve & Flow Meter	334100-Meters	10133410	334.4	Y	7/30/2014						
334200	119		KRS Hydrotreater Valve & Flow Meter	334200-Meter Installations	10133420	334.4	Y	7/30/2014						
334300	120		KRS Hydrotreater Valve & Flow Meter	334300-Meter Vaults	10133410	334.4	Y	7/30/2014						
	121													
311200	122	IP-1202-39	Pump Efficiency Repl	311000-Pumping Equipment	10131120	311.2	Y	9/25/2014						
311200	123		Pump Efficiency Repl	311200-Pump Eqp Electric	10131120	311.2	Y	9/25/2014						
339300	124		Pump Efficiency Repl	339300-Other P/E-Treatment	10133930	339.3	Y	9/25/2014						
346190	125		Pump Efficiency Repl	346190-Remote Control & Instrum	10134600	346.5	Y	9/25/2014						
347000	126		Pump Efficiency Repl	347000-Misc Equipment	10134700	347.5	Y	9/25/2014						

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	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Oct-Dec 12 In-Serviced
Total Placed in Service:	$ 925,331	$ 1,098,975	$ 1,515,194	$ 1,469,171	$ 1,863,542	$ 7,059,663

Account Key	Line #	FP#	Project Description	JDE / Utility Plant Account	SAP GL Account	NARUC Account	AFUDC Y/N	In-Service Date or # Months Construction	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Oct-Dec 12 In-Serviced
331001	1	D12-**01-P	Projects Funded by Others	331001-T&D Mains	10133100	331.4	N	2	75,636	118,182	137,091	146,545	165,000	572,161
335000	2		Projects Funded by Others	335000-Hydrants	10133500	335.4	N	2	8,404	13,131	15,232	16,283	18,333	65,283
333000	3		Projects Funded by Others	333000-Services	10133300	333.4	N	2	-	-	-	-	-	55,037
334100	4		Projects Funded by Others	334100-Meters	10133410	334.4	N	2	-	-	-	-	-	1,861
334200	5		Projects Funded by Others	334200-Meter Installations	10133420	334.4	N	2	-	-	-	-	-	34,012
	6													-
331001	7	R12-**A1	Mains - New	331001-T&D Mains	10133100	331.4	Y	2	-	-	10,505	10,505	26,263	75,100
	8													-
331001	9	R12-**B1	Mains - Replaced / Restored	331001-T&D Mains	10133100	331.4	Y	2	12,202	48,606	74,222	87,233	162,464	362,478
333000	10		Mains - Replaced / Restored	333000-Services	10133300	333.4	Y	2	1,220	4,861	7,422	8,723	16,246	26,088
334100	11		Mains - Replaced / Restored	334100-Meters	10133410	334.4	Y	2	915	3,645	5,567	6,542	12,185	19,566
335000	12		Mains - Replaced / Restored	335000-Hydrants	10133500	335.4	Y	2	915	3,645	5,567	6,542	12,185	22,078
	13													-
331001	14	R12-**C1	Mains - Unscheduled	331001-T&D Mains	10133100	331.4	N	1	34,768	14,707	21,010	21,010	13,657	77,965
	15													-
331001	16	R12-**D1	Mains - Relocated	331001-T&D Mains	10133100	331.4	Y	2	-	-	4,728	9,455	14,182	-
335000	17		Mains - Relocated	335000-Hydrants	10133500	335.4	Y	2	-	-	525	1,051	1,576	-
	18													-
335000	19	R12-**E1	Hydrants, Valves, and Manholes - New	335000-Hydrants	10133500	335.4	N	1	12,606	13,867	15,758	12,606	15,758	41,583
331001	20		Hydrants, Valves, and Manholes - New	331001-T&D Mains	10133100	331.4	N	1	8,404	9,244	10,505	8,404	10,505	19,121
	21													-
335000	22	R12-**F1	Hydrants, Valves, and Manholes - Replaced	335000-Hydrants	10133500	335.4	N	1	20,170	10,085	10,085	16,388	17,648	(9,169)
331001	23		Hydrants, Valves, and Manholes - Replaced	331001-T&D Mains	10133100	331.4	N	1	13,447	6,724	6,724	10,926	11,766	(5,960)
	24													-
333000	25	R12-**G1	Services and Laterals - New	333000-Services	10133300	333.4	N	1	90,343	110,161	115,565	111,565	116,565	294,980
	26													-
333000	27	R12-**H1	Services and Laterals - Replaced	333000-Services	10133300	333.4	N	1	94,555	94,654	101,071	96,981	102,121	244,207
334200	28		Services and Laterals - Replaced	334200-Meter Installations	10133420	334.4	N	1	-	-	-	-	-	962
	29													-
334100	30	R12-**I1	Meters - New	334100-Meters	10133410	334.4	N	1	31,620	48,639	59,879	65,131	59,879	478,229
	31													-
334100	32	R12-**J1	Meters - Replaced	334100-Meters	10133410	334.4	N	1	81,939	459,594	580,611	417,379	238,580	2,386,331
334200	33		Meters - Replaced	334200-Meter Installations	10133420	334.4	N	1	-	-	-	-	-	(314)
	34													-
334100	35	R12-**K1	ITS Equipment and Systems	334100-Meters	10133410	334.4	N	1	38,781	11,000	32,615	8,371	-	193,071
	36													-
346190	37	R12-**L1	SCADA Equipment and Systems	346190-Remote Control & Instrum	10134600	346.5	Y	6	107,219	107,219	107,219	107,220	-	-
	38													-
304500	39	R12-**M1	Security Equipment and Systems	304500-Struct & Imp-General	10130450	304.5	N	1	-	-	-	10,505	10,505	21,010
	40													-
304500	41	R12-**N1	Offices and Operations Centers	304500-Struct & Imp-General	10130450	304.5	N	1	-	-	21,010	-	21,010	51,818
304100	42		Offices and Operations Centers	304100-Struct & Imp-Supply	10130410	304.2	N	1	-	-	-	-	-	7,489
340100	43		Offices and Operations Centers	340100-Office Furniture & Equip	10134010	340.5	N	1	-	-	-	-	-	131,066
340300	44		Offices and Operations Centers	340300-Computer Software	10134010	340.5	N	1	-	-	-	-	-	7,894
346100	45		Offices and Operations Centers	346100-Comm Equip Non-Telepho	10134600	346.5	N	1	-	-	-	-	-	93,467
347000	46		Offices and Operations Centers	347000-Misc Equipment	10134700	347.5	N	1	-	-	-	-	-	12,332
	47													-
341100	48	R12-**O1	Vehicles	341100-Trans Equip Lt Duty Trks	10134100	341.5	N	1	-	-	15,253	18,027	115,440	67,613
341200	49		Vehicles	341200-Trans Equip Hvy Duty Trks	10134100	341.5	N	1	-	-	15,253	18,027	115,440	67,819
341300	50		Vehicles	341300-Trans Equip Auto Car	10134100	341.5	N	1	-	-	15,715	18,573	118,938	69,712
	51													-
343000	52	R12-**P1	Tools and Equipment	343000-Tools,Shop,Garage Equip	10134300	343.5	N	1	10,505	10,505	78,788	67,100	89,292	153,926
	53													-
304300	54	R12-**Q1	Process Plant Facilities and Equipment	304300-Struct & Imp-Treatment	10130430	304.3	Y	2	-	-	14,707	67,232	60,700	124,502
306000	55		Process Plant Facilities and Equipment	306000-Lake, River & Other Intake	10130600	306.2	Y	2	-	-	5,515	25,212	22,763	48,182
311200	56		Process Plant Facilities and Equipment	311000-Pumping Equipment	10131120	311.2	Y	2	-	-	9,192	42,020	37,938	92,557
320100	57		Process Plant Facilities and Equipment	320100-Wt Equip Non-Media	10132010	320.3	Y	2	-	-	3,677	16,808	15,175	31,126
330200	58		Process Plant Facilities and Equipment	330200-Ground Level Tanks	10133000	330.4	Y	2	-	-	3,677	16,808	15,175	234,828
344000	59		Process Plant Facilities and Equipment	344000-Laboratory Equipment	10134400	344.5	Y	2	-	-	-	-	-	7,157
	60													-
339600	61	R12-**S1	Engineering Studies	339600-Other P/E-Cps	10133910	339.1	Y	6	8,929	8,929	8,929	-	-	-
348000	62		Engineering Studies	348000-Other Tangible Property	10134800	348.5	Y	6	1,576	1,576	1,576	-	-	-
	63													-
340315	64	T12-0102-P	Business Transformation 2010 - 2014	340315-Comp Software Specia	10134010	340.5	Y	5/1/2013	271,176					-
340315	65		Business Transformation 2010 - 2014	340315-Comp Software Specia	10134010	340.5	Y	5/1/2013						-

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	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Oct-Dec 12 In-Serviced
Total Placed in Service:	$ 925,331	$ 1,098,975	$ 1,515,194	$ 1,469,171	$ 1,863,542	$ 7,059,663

x Account Key	Line #	FP#	x Project Description	x JDE / Utility Plant Account	x SAP GL Account	x NARUC Account	x AFUDC Y/N	x In-Service Date or # Months Construction	Mar-14	Apr-14	May-14	Jun-14	Jul-14	x Oct-Dec 12 In-Serviced
	66													$ -
340315	67	T12-0103-P	Business Transformation 2010 - 2014	340315-Comp Software Specia	10134010	340.5	Y	5/1/2013						$ 180,475
	68													$ -
331001	69	I12-020001	New WTP On Pool 3 of Kentucky	331001-T&D Mains	10133100	331.4	N	9/20/2010						$ 23,894
	70													$ -
330200	71	I12-020027	Russell Cave Rd Main Extension	330200-Ground Level Tanks	10133000	330.4	N	7/15/2012						$ 509,148
	72													$ -
331001	73	I12-020009	US 25 Relocation	331001-T&D Mains	10133100	331.4	N	7/30/2012						$ 135,184
333000	74		US 25 Relocation	333000-Services	10133300	333.4	N	7/30/2012						$ 16,898
335000	75		US 25 Relocation	335000-Hydrants	10133500	335.4	N	7/30/2012						$ 16,898
	76													$ -
331001	77	I12-020010	Leestown Road	331001-T&D Mains	10133100	331.4	Y	4/15/2013						$ -
333000	78		Leestown Road	333000-Services	10133300	333.4	Y	4/15/2013						$ -
335000	79		Leestown Road	335000-Hydrants	10133500	335.4	Y	4/15/2013						$ -
	80													$ -
311200	81	I12-020025	Pump Efficiency Replacement	311000-Pumping Equipment	10131120	311.2	Y	4/15/2013						$ -
311200	82		Pump Efficiency Replacement	311200-Pump Eqp Electric	10131120	311.2	Y	4/15/2013						$ -
339300	83		Pump Efficiency Replacement	339300-Other P/E-Treatment	10133930	339.3	Y	4/15/2013						$ -
346190	84		Pump Efficiency Replacement	346190-Remote Control & Instrum	10134600	346.5	Y	4/15/2013						$ -
347000	85		Pump Efficiency Replacement	347000-Misc Equipment	10134700	347.5	Y	4/15/2013						$ -
	86													$ -
303500	87	I12-300003	Northern Division Connection	303500-Land & Land Rights-T&D	10130350	303.4	Y	12/28/2013	$ -	$ -				$ -
331001	88		Northern Division Connection	331001-T&D Mains	10133100	331.4	Y	12/28/2013	$ -	$ -				$ -
311540	89		Northern Division Connection	311540-Pumping Equipment Td	10131154	311.4	Y	12/28/2013	$ -	$ -				$ -
311200	90		Northern Division Connection	311200-Pump Eqp Electric	10131120	311.2	Y	12/28/2013	$ -	$ -				$ -
346190	91		Northern Division Connection	346190-Remote Control & Instrum	10134600	346.5	Y	12/28/2013	$ -	$ -				$ -
330100	92		Northern Division Connection	330100-Elevated Tanks & Standpip	10133000	330.4	Y	12/28/2013	$ -	$ -				$ -
	93													$ -
331001	94	IP-1202-9	Todds and Cleveland Rd Main Extension	331001-T&D Mains	10133100	331.4	Y	11/15/2014						$ -
335000	95		Todds and Cleveland Rd Main Extension	335000-Hydrants	10133500	335.4	Y	11/15/2014						$ -
	96													$ -
304300	97	IP-1202-10	KRS Clearwell Improvements (332)	304300-Struct & Imp-Treatment	10130430	304.3	Y	6/15/2015						$ -
	98													$ -
331001	99	IP-1202-11	I-75 Main Extension	331001-T&D Mains	10133100	331.4	Y	11/15/2014						$ -
335000	100		I-75 Main Extension	335000-Hydrants	10133500	335.4	Y	11/15/2014						$ -
	101													$ -
331001	102	IP-1202-13	Greenwich Rd Main Extension	331001-T&D Mains	10133100	331.4	Y	10/15/2014						$ -
335000	103		Greenwich Rd Main Extension	335000-Hydrants	10133500	335.4	Y	10/15/2014						$ -
	104													$ -
331001	105	IP-1202-16	North Upper St Main Replacement (343)	331001-T&D Mains	10133100	331.4	Y	12/15/2014						$ -
333000	106		North Upper St Main Replacement (343)	333000-Services	10133300	333.4	Y	12/15/2014						$ -
335000	107		North Upper St Main Replacement (343)	335000-Hydrants	10133500	335.4	Y	12/15/2014						$ -
	108													$ -
331001	109	IP-1202-20	KY Major Highway	331001-T&D Mains	10133100	331.4	Y	12/15/2014						$ -
333000	110		KY Major Highway	333000-Services	10133300	333.4	Y	12/15/2014						$ -
335000	111		KY Major Highway	335000-Hydrants	10133500	335.4	Y	12/15/2014						$ -
	112													$ -
304300	113	IP-1202-23	RRS Carbon and Pre-Chlorine Feed	304300-Struct & Imp-Treatment	10130430	304.3	Y	9/15/2014						$ -
311200	114		RRS Carbon and Pre-Chlorine Feed	311000-Pumping Equipment	10131120	311.2	Y	9/15/2014						$ -
311200	115		RRS Carbon and Pre-Chlorine Feed	311200-Pump Eqp Electric	10131120	311.2	Y	9/15/2014						$ -
320100	116		RRS Carbon and Pre-Chlorine Feed	320100-Wt Equip Non-Media	10132010	320.3	Y	9/15/2014						$ -
	117													$ -
334100	118	IP-1202-27	KRS Hydrotreater Valve & Flow Meter	334100-Meters	10133410	334.4	Y	7/30/2014					$ 79,189	$ -
334200	119		KRS Hydrotreater Valve & Flow Meter	334200-Meter Installations	10133420	334.4	Y	7/30/2014					$ 56,564	$ -
334300	120		KRS Hydrotreater Valve & Flow Meter	334300-Meter Vaults	10133410	334.4	Y	7/30/2014					$ 90,502	$ -
	121													$ -
311200	122	IP-1202-39	Pump Efficiency Repl	311000-Pumping Equipment	10131120	311.2	Y	9/25/2014						$ -
311200	123		Pump Efficiency Repl	311200-Pump Eqp Electric	10131120	311.2	Y	9/25/2014						$ -
339300	124		Pump Efficiency Repl	339300-Other P/E-Treatment	10133930	339.3	Y	9/25/2014						$ -
346190	125		Pump Efficiency Repl	346190-Remote Control & Instrum	10134600	346.5	Y	9/25/2014						$ -
347000	126		Pump Efficiency Repl	347000-Misc Equipment	10134700	347.5	Y	9/25/2014						$ -

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	2013 In-Serviced	2014 In-Serviced
Total Placed in Service:	$ 42,878,652	$ 23,843,591

Account Key	Line #	FP#	Project Description	JDE / Utility Plant Account	SAP GL Account	NARUC Account	AFUDC Y/N	In-Service Date or # Months Construction	2013 In-Serviced	2014 In-Serviced
331001	1	D12-**01-P	Projects Funded by Others	331001-T&D Mains	10133100	331.4	N	2	$ 1,798,085	$ 1,910,611
335000	2		Projects Funded by Others	335000-Hydrants	10133500	335.4	N	2	$ 199,787	$ 212,290
333000	3		Projects Funded by Others	333000-Services	10133300	333.4	N	2	$ -	$ -
334100	4		Projects Funded by Others	334100-Meters	10133410	334.4	N	2	$ -	$ -
334200	5		Projects Funded by Others	334200-Meter Installations	10133420	334.4	N	2	$ -	$ -
	6								$ -	$ -
331001	7	R12-**A1	Mains - New	331001-T&D Mains	10133100	331.4	Y	2	$ 1,064,129	$ 270,605
	8								$ -	$ -
331001	9	R12-**B1	Mains - Replaced / Restored	331001-T&D Mains	10133100	331.4	Y	2	$ 2,051,392	$ 1,594,849
333000	10		Mains - Replaced / Restored	333000-Services	10133300	333.4	Y	2	$ 205,139	$ 159,485
334100	11		Mains - Replaced / Restored	334100-Meters	10133410	334.4	Y	2	$ 153,854	$ 119,614
335000	12		Mains - Replaced / Restored	335000-Hydrants	10133500	335.4	Y	2	$ 153,854	$ 119,614
	13								$ -	$ -
331001	14	R12-**C1	Mains - Unscheduled	331001-T&D Mains	10133100	331.4	N	1	$ 270,231	$ 270,231
	15								$ -	$ -
331001	16	R12-**D1	Mains - Relocated	331001-T&D Mains	10133100	331.4	Y	2	$ 703,255	$ 461,679
335000	17		Mains - Relocated	335000-Hydrants	10133500	335.4	Y	2	$ 78,139	$ 51,298
	18								$ -	$ -
335000	19	R12-**E1	Hydrants, Valves, and Manholes - New	335000-Hydrants	10133500	335.4	N	1	$ 110,996	$ 120,900
331001	20		Hydrants, Valves, and Manholes - New	331001-T&D Mains	10133100	331.4	N	1	$ 73,997	$ 80,600
	21								$ -	$ -
335000	22	R12-**F1	Hydrants, Valves, and Manholes - Replaced	335000-Hydrants	10133500	335.4	N	1	$ 180,266	$ 180,266
331001	23		Hydrants, Valves, and Manholes - Replaced	331001-T&D Mains	10133100	331.4	N	1	$ 120,177	$ 120,177
	24								$ -	$ -
333000	25	R12-**G1	Services and Laterals - New	333000-Services	10133300	333.4	N	1	$ 1,026,132	$ 1,085,116
	26								$ -	$ -
333000	27	R12-**H1	Services and Laterals - Replaced	333000-Services	10133300	333.4	N	1	$ 1,002,917	$ 1,040,590
334200	28		Services and Laterals - Replaced	334200-Meter Installations	10133420	334.4	N	1	$ -	$ -
	29								$ -	$ -
334100	30	R12-**I1	Meters - New	334100-Meters	10133410	334.4	N	1	$ 504,240	$ 504,241
	31								$ -	$ -
334100	32	R12-**J1	Meters - Replaced	334100-Meters	10133410	334.4	N	1	$ 2,362,739	$ 2,320,552
334200	33		Meters - Replaced	334200-Meter Installations	10133420	334.4	N	1	$ -	$ -
	34								$ -	$ -
334100	35	R12-**K1	ITS Equipment and Systems	334100-Meters	10133410	334.4	N	1	$ 315,805	$ 117,860
	36								$ -	$ -
346190	37	R12-**L1	SCADA Equipment and Systems	346190-Remote Control & Instrum	10134600	346.5	Y	6	$ 1,399,232	$ 818,819
	38								$ -	$ -
304500	39	R12-**M1	Security Equipment and Systems	304500-Struct & Imp-General	10130450	304.5	N	1	$ 210,100	$ 157,575
	40								$ -	$ -
304500	41	R12-**N1	Offices and Operations Centers	304500-Struct & Imp-General	10130450	304.5	N	1	$ 105,050	$ 126,060
304100	42		Offices and Operations Centers	304100-Struct & Imp-Supply	10130410	304.2	N	1	$ -	$ -
340100	43		Offices and Operations Centers	340100-Office Furniture & Equip	10134010	340.5	N	1	$ -	$ -
340300	44		Offices and Operations Centers	340300-Computer Software	10134010	340.5	N	1	$ -	$ -
346100	45		Offices and Operations Centers	346100-Comm Equip Non-Telepho	10134600	346.5	N	1	$ -	$ -
347000	46		Offices and Operations Centers	347000-Misc Equipment	10134700	347.5	N	1	$ -	$ -
	47								$ -	$ -
341100	48	R12-**O1	Vehicles	341100-Trans Equip Lt Duty Trks	10134100	341.5	N	1	$ 178,533	$ 185,466
341200	49		Vehicles	341200-Trans Equip Hvy Duty Trks	10134100	341.5	N	1	$ 178,533	$ 185,466
341300	50		Vehicles	341300-Trans Equip Auto Car	10134100	341.5	N	1	$ 183,943	$ 191,086
	51								$ -	$ -
343000	52	R12-**P1	Tools and Equipment	343000-Tools,Shop,Garage Equip	10134300	343.5	N	1	$ 307,797	$ 343,569
	53								$ -	$ -
304300	54	R12-**Q1	Process Plant Facilities and Equipment	304300-Struct & Imp-Treatment	10130430	304.3	Y	2	$ 708,072	$ 512,274
306000	55		Process Plant Facilities and Equipment	306000-Lake, River & Other Intake	10130600	306.2	Y	2	$ 265,527	$ 192,103
311200	56		Process Plant Facilities and Equipment	311000-Pumping Equipment	10131120	311.2	Y	2	$ 442,545	$ 320,171
320100	57		Process Plant Facilities and Equipment	320100-Wt Equip Non-Media	10132010	320.3	Y	2	$ 177,018	$ 128,069
330200	58		Process Plant Facilities and Equipment	330200-Ground Level Tanks	10133000	330.4	Y	2	$ 177,018	$ 128,069
344000	59		Process Plant Facilities and Equipment	344000-Laboratory Equipment	10134400	344.5	Y	2	$ -	$ -
	60								$ -	$ -
339600	61	R12-**S1	Engineering Studies	339600-Other P/E-Cps	10133910	339.1	Y	6	$ 449,699	$ 35,717
348000	62		Engineering Studies	348000-Other Tangible Property	10134800	348.5	Y	6	$ 236,541	$ 6,303
	63								$ -	$ -
340315	64	T12-0102-P	Business Transformation 2010 - 2014	340315-Comp Software Specia	10134010	340.5	Y	5/1/2013	$ 6,470,245	$ 347,860
340315	65		Business Transformation 2010 - 2014	340315-Comp Software Specia	10134010	340.5	Y	5/1/2013	$ -	$ -

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	2013 In-Serviced	2014 In-Serviced
Total Placed in Service:	$ 42,878,652	$ 23,843,591

x Account Key	Line #	FP#	x Project Description	x JDE / Utility Plant Account	x SAP GL Account	x NARUC Account	x AFUDC Y/N	x In-Service Date or # Months Construction	2013 In-Serviced	2014 In-Serviced
	66								$ -	$ -
340315	67	T12-0103-P	Business Transformation 2010 - 2014	340315-Comp Software Specia	10134010	340.5	Y	5/1/2013	$ 249,799	$ -
	68								$ -	$ -
331001	69	I12-020001	New WTP On Pool 3 of Kentucky	331001-T&D Mains	10133100	331.4	N	9/20/2010	$ -	$ -
	70								$ -	$ -
330200	71	I12-020027	Russell Cave Rd Main Extension	330200-Ground Level Tanks	10133000	330.4	N	7/15/2012	$ -	$ -
	72								$ -	$ -
331001	73	I12-020009	US 25 Relocation	331001-T&D Mains	10133100	331.4	N	7/30/2012	$ -	$ -
333000	74		US 25 Relocation	333000-Services	10133300	333.4	N	7/30/2012	$ -	$ -
335000	75		US 25 Relocation	335000-Hydrants	10133500	335.4	N	7/30/2012	$ -	$ -
	76								$ -	$ -
331001	77	I12-020010	Leestown Road	331001-T&D Mains	10133100	331.4	Y	4/15/2013	$ 1,692,056	$ -
333000	78		Leestown Road	333000-Services	10133300	333.4	Y	4/15/2013	$ 81,914	$ -
335000	79		Leestown Road	335000-Hydrants	10133500	335.4	Y	4/15/2013	$ 40,957	$ -
	80								$ -	$ -
311200	81	I12-020025	Pump Efficiency Replacement	311000-Pumping Equipment	10131120	311.2	Y	4/15/2013	$ 960,414	$ -
311200	82		Pump Efficiency Replacement	311200-Pump Eqp Electric	10131120	311.2	Y	4/15/2013	$ 750,977	$ -
339300	83		Pump Efficiency Replacement	339300-Other P/E-Treatment	10133930	339.3	Y	4/15/2013	$ 237,964	$ -
346190	84		Pump Efficiency Replacement	346190-Remote Control & Instrum	10134600	346.5	Y	4/15/2013	$ 233,400	$ -
347000	85		Pump Efficiency Replacement	347000-Misc Equipment	10134700	347.5	Y	4/15/2013	$ 239,676	$ -
	86								$ -	$ -
303500	87	I12-300003	Northern Division Connection	303500-Land & Land Rights-T&D	10130350	303.4	Y	12/28/2013	$ 362,419	$ 616
331001	88		Northern Division Connection	331001-T&D Mains	10133100	331.4	Y	12/28/2013	$ 10,011,527	$ 28,136
311540	89		Northern Division Connection	311540-Pumping Equipment Td	10131154	311.4	Y	12/28/2013	$ 346,047	$ 1,027
311200	90		Northern Division Connection	311200-Pump Eqp Electric	10131120	311.2	Y	12/28/2013	$ 276,838	$ 821
346190	91		Northern Division Connection	346190-Remote Control & Instrum	10134600	346.5	Y	12/28/2013	$ 69,209	$ 205
330100	92		Northern Division Connection	330100-Elevated Tanks & Standpip	10133000	330.4	Y	12/28/2013	$ 3,460,471	$ 10,269
	93								$ -	$ -
331001	94	IP-1202-9	Todds and Cleveland Rd Main Extension	331001-T&D Mains	10133100	331.4	Y	11/15/2014	$ -	$ 2,340,000
335000	95		Todds and Cleveland Rd Main Extension	335000-Hydrants	10133500	335.4	Y	11/15/2014	$ -	$ 60,000
	96								$ -	$ -
304300	97	IP-1202-10	KRS Clearwell Improvements (332)	304300-Struct & Imp-Treatment	10130430	304.3	Y	6/15/2015	$ -	$ -
	98								$ -	$ -
331001	99	IP-1202-11	I-75 Main Extension	331001-T&D Mains	10133100	331.4	Y	11/15/2014	$ -	$ 1,950,000
335000	100		I-75 Main Extension	335000-Hydrants	10133500	335.4	Y	11/15/2014	$ -	$ 50,000
	101								$ -	$ -
331001	102	IP-1202-13	Greenwich Rd Main Extension	331001-T&D Mains	10133100	331.4	Y	10/15/2014	$ -	$ 1,267,500
335000	103		Greenwich Rd Main Extension	335000-Hydrants	10133500	335.4	Y	10/15/2014	$ -	$ 32,500
	104								$ -	$ -
331001	105	IP-1202-16	North Upper St Main Replacement (343)	331001-T&D Mains	10133100	331.4	Y	12/15/2014	$ -	$ 1,312,747
333000	106		North Upper St Main Replacement (343)	333000-Services	10133300	333.4	Y	12/15/2014	$ -	$ 150,028
335000	107		North Upper St Main Replacement (343)	335000-Hydrants	10133500	335.4	Y	12/15/2014	$ -	$ 37,507
	108								$ -	$ -
331001	109	IP-1202-20	KY Major Highway	331001-T&D Mains	10133100	331.4	Y	12/15/2014	$ -	$ 875,000
333000	110		KY Major Highway	333000-Services	10133300	333.4	Y	12/15/2014	$ -	$ 100,000
335000	111		KY Major Highway	335000-Hydrants	10133500	335.4	Y	12/15/2014	$ -	$ 25,000
	112								$ -	$ -
304300	113	IP-1202-23	RRS Carbon and Pre-Chlorine Feed	304300-Struct & Imp-Treatment	10130430	304.3	Y	9/15/2014	$ -	$ 95,038
311200	114		RRS Carbon and Pre-Chlorine Feed	311000-Pumping Equipment	10131120	311.2	Y	9/15/2014	$ -	$ 95,038
311200	115		RRS Carbon and Pre-Chlorine Feed	311200-Pump Eqp Electric	10131120	311.2	Y	9/15/2014	$ -	$ 95,038
320100	116		RRS Carbon and Pre-Chlorine Feed	320100-Wt Equip Non-Media	10132010	320.3	Y	9/15/2014	$ -	$ 190,075
	117								$ -	$ -
334100	118	IP-1202-27	KRS Hydrotreater Valve & Flow Meter	334100-Meters	10133410	334.4	Y	7/30/2014	$ -	$ 87,500
334200	119		KRS Hydrotreater Valve & Flow Meter	334200-Meter Installations	10133420	334.4	Y	7/30/2014	$ -	$ 62,500
334300	120		KRS Hydrotreater Valve & Flow Meter	334300-Meter Vaults	10133410	334.4	Y	7/30/2014	$ -	$ 100,000
	121								$ -	$ -
311200	122	IP-1202-39	Pump Efficiency Repl	311000-Pumping Equipment	10131120	311.2	Y	9/25/2014	$ -	$ 183,146
311200	123		Pump Efficiency Repl	311200-Pump Eqp Electric	10131120	311.2	Y	9/25/2014	$ -	$ 137,360
339300	124		Pump Efficiency Repl	339300-Other P/E-Treatment	10133930	339.3	Y	9/25/2014	$ -	$ 45,787
346190	125		Pump Efficiency Repl	346190-Remote Control & Instrum	10134600	346.5	Y	9/25/2014	$ -	$ 45,787
347000	126		Pump Efficiency Repl	347000-Misc Equipment	10134700	347.5	Y	9/25/2014	$ -	$ 45,787

Kentucky American Water
Case No. 2012-00520
Capital Addition Activity by Month, September 2012 - December 2014
Workpaper #: W/P - 1-3
Excel Reference: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Actv CapAddtn

	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13
Total Capital Additions	$ 9,010,160	$ 3,295,070	$ 5,747,356	$ (4,945,234)	$ 1,343,265	$ 1,661,394	$ 4,419,580	$ 4,326,374

Line #	FP#	Project Description	JDE / Utility Plant Account	SAP GL Account	NARUC Account	AFUDC Y/N	IP In-Service Date Non-IP Months in Construx	Water CWIP Bal Fwd Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13
1	D12-**01-P	Projects Funded by Others	331001-T&D Mains	10133100	331.4	N	2	407,312	164,849	164,613	117,387	75,636	118,182	137,091	146,545	156,000
2		Projects Funded by Others	335000-Hydrants	10133500	335.4	N	2	46,967	18,317	18,290	13,043	8,404	13,131	15,232	16,283	17,333
3		Projects Funded by Others	333000-Services	10133300	333.4	N	2	55,037	-	-	-	-	-	-	-	-
4		Projects Funded by Others	334100-Meters	10133410	334.4	N	2	1,861	-	-	-	-	-	-	-	-
5		Projects Funded by Others	334200-Meter Installations	10133420	334.4	N	2	34,012	-	-	-	-	-	-	-	-
6																
7	R12-**A1	Mains - New	331001-T&D Mains	10133100	331.4	Y	2	12,092	63,008	150,988	684,150	-	-	-	10,505	26,263
8																
9	R12-**B1	Mains - Replaced / Restored	331001-T&D Mains	10133100	331.4	Y	2	101,600	260,878	222,990	462,234	5,364	12,606	70,222	88,242	150,464
10		Mains - Replaced / Restored	333000-Services	10133300	333.4	Y	2		26,088	22,299	46,223	536	1,261	7,022	8,824	15,046
11		Mains - Replaced / Restored	334100-Meters	10133410	334.4	Y	2		19,566	16,724	34,668	402	945	5,267	6,618	11,285
12		Mains - Replaced / Restored	335000-Hydrants	10133500	335.4	Y	2	2,512	19,566	16,724	34,668	402	945	5,267	6,618	11,285
13																
14	R12-**C1	Mains - Unscheduled	331001-T&D Mains	10133100	331.4	N	1	-	25,261	20,428	32,275	21,162	21,010	34,768	14,707	21,010
15																
16	R12-**D1	Mains - Relocated	331001-T&D Mains	10133100	331.4	Y	2	-	-	90,000	250,200	-	-	-	4,728	9,455
17		Mains - Relocated	335000-Hydrants	10133500	335.4	Y	2	-	-	10,000	27,800	-	-	-	525	1,051
18																
19	R12-**E1	Hydrants, Valves, and Manholes - New	335000-Hydrants	10133500	335.4	N	1	12,901	13,344	8,599	6,738	-	3,152	6,303	13,552	15,758
20		Hydrants, Valves, and Manholes - New	331001-T&D Mains	10133100	331.4	N	1		8,896	5,733	4,492	-	2,101	4,202	9,034	10,505
21																
22	R12-**F1	Hydrants, Valves, and Manholes - Repla	335000-Hydrants	10133500	335.4	N	1	(228)	(2,123)	(3,383)	(3,435)	10,715	10,715	20,170	10,085	10,085
23		Hydrants, Valves, and Manholes - Repla	331001-T&D Mains	10133100	331.4	N	1		(1,415)	(2,255)	(2,290)	7,144	7,144	13,447	6,724	6,724
24																
25	R12-**G1	Services and Laterals - New	333000-Services	10133300	333.4	N	1	-	103,881	105,830	85,268	69,333	73,535	93,495	95,324	101,623
26																
27	R12-**H1	Services and Laterals - Replaced	333000-Services	10133300	333.4	N	1	2,609	81,340	69,371	90,886	64,040	79,798	89,555	86,654	93,071
28		Services and Laterals - Replaced	334200-Meter Installations	10133420	334.4	N	1	962								
29																
30	R12-**I1	Meters - New	334100-Meters	10133410	334.4	N	1	168,382	104,386	93,880	111,581	24,267	25,737	31,620	48,639	59,879
31																
32	R12-**J1	Meters - Replaced	334100-Meters	10133410	334.4	N	1	2,523	490,967	460,866	1,431,975	15,758	309,855	81,939	459,594	576,443
33		Meters - Replaced	334200-Meter Installations	10133420	334.4	N	1	(314)								
34																
35	R12-**K1	ITS Equipment and Systems	334100-Meters	10133410	334.4	N	1	8,111	18,320	53,320	113,320	-	-	16,000	112,227	70,703
36																
37	R12-**L1	SCADA Equipment and Systems	346190-Remote Control & Instru	10134600	346.5	Y	6	459,726	40,634	82,654	479,328	-	-	321,658	10,505	4,727
38																
39	R12-**M1	Security Equipment and Systems	304500-Struct & Imp-General	10130450	304.5	N	1	-	3,502	14,007	3,502	-	-	-	-	-
40																
41	R12-**N1	Offices and Operations Centers	304500-Struct & Imp-General	10130450	304.5	N	1	68,165	(55,449)	44,551	(5,449)	-	-	-	-	21,010
42		Offices and Operations Centers	304100-Struct & Imp-Supply	10130410	304.2	N	1	7,489								
43		Offices and Operations Centers	340100-Office Furniture & Equip	10134010	340.5	N	1	131,066								
44		Offices and Operations Centers	340300-Computer Software	10134010	340.5	N	1	7,894								
45		Offices and Operations Centers	346100-Comm Equip Non-Teleph	10134600	346.5	N	1	93,467								
46		Offices and Operations Centers	347000-Misc Equipment	10134700	347.5	N	1	12,332								
47																
48	R12-**O1	Vehicles	341100-Trans Equip Lt Duty Trks	10134100	341.5	N	1	(206)	34,377	10,121	23,321	-	-	-	-	17,333
49		Vehicles	341200-Trans Equip Hvy Duty Trk	10134100	341.5	N	1	-	34,377	10,121	23,321	-	-	-	-	17,333
50		Vehicles	341300-Trans Equip Auto Car	10134100	341.5	N	1	(162)	35,418	10,428	24,028	-	-	-	-	17,859
51																
52	R12-**P1	Tools and Equipment	343000-Tools,Shop,Garage Equip	10134300	343.5	N	1	-	5,669	59,128	89,128	-	10,505	13,657	47,273	115,55[illegible]
53																
54	R12-**Q1	Process Plant Facilities and Equipment	304300-Struct & Imp-Treatment	10130430	304.3	Y	2	-	124,502	106,502	99,196	-	-	16,598	76,698	21,010
55		Process Plant Facilities and Equipment	306000-Lake, River & Other Intak	10130600	306.2	Y	2	1,494	46,688	39,938	37,199	-	-	6,224	28,762	7,879
56		Process Plant Facilities and Equipment	311000-Pumping Equipment	10131120	311.2	Y	2	14,743	77,814	66,564	61,998	-	-	10,374	47,936	13,131
57		Process Plant Facilities and Equipment	320100-Wt Equip Non-Media	10132010	320.3	Y	2	-	31,126	26,626	24,799	-	-	4,150	19,175	5,253
58		Process Plant Facilities and Equipment	330200-Ground Level Tanks	10133000	330.4	Y	2	203,702	31,126	26,626	24,799	-	-	4,150	19,175	5,253
59		Process Plant Facilities and Equipment	344000-Laboratory Equipment	10134400	344.5	Y	2	7,157								
60																
61	R12-**S1	Engineering Studies	339600-Other P/E-Cps	10133910	339.1	Y	6	400,277	16,474	16,474	16,474	-	-	-	-	-
62		Engineering Studies	348000-Other Tangible Property	10134800	348.5	Y	6	227,819	2,907	2,907	2,907	-	-	-	-	-
63																
64	T12-0102-P	Business Transformation 2010 - 2014	340315-Comp Software Specia	10134010	340.5	Y	5/1/2013	3,772,437	570,203	269,991	244,784	322,430	355,801	204,510	203,083	109,431
65		Business Transformation 2010 - 2014	340315-Comp Software Specia	10134010	340.5	Y	5/1/2013									

Kentucky American Water
Case No. 2012-00520
Capital Addition Activity by Month, September 2012 - December 2014
Workpaper #: W/P - 1-3
Excel Reference: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Actv CapAddtn

	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13
Total Capital Additions	$ 9,010,160	$ 3,295,070	$ 5,747,356	$ (4,945,234)	$ 1,343,265	$ 1,661,394	$ 4,419,580	$ 4,326,374

Line #	FP#	Project Description	JDE / Utility Plant Account	SAP GL Account	NARUC Account	AFUDC Y/N	IP In-Service Date Non-IP Months in Construx	Water CWIP Bal Fwd Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13
66																
67	T12-0103-P	Business Transformation 2010 - 2014	340315-Comp Software Specia	10134010	340.5	Y	8/1/2012	$ 286,481	$ 12,000	$ 14,000	$ 13,602	$ 9,246	$ 9,269	$ 9,292	$ 2,225	$ 2,225
68																
69	I12-020001	New WTP On Pool 3 of Kentucky	331001-T&D Mains	10133100	331.4	N	1	$ 5,484	$ 18,410	$ -	$ -	$ -	$ -	$ -	$ -	$ -
70																
71	I12-020027	Russell Cave Rd Main Extension	330200-Ground Level Tanks	10133000	330.4	Y	7/15/2012	$ 553,227	$ (24,091)	$ (24,091)	$ 4,101	$ -	$ -	$ -	$ -	$ -
72																
73	I12-020009	US 25 Relocation	331001-T&D Mains	10133100	331.4	N	7/30/2012		$ 82,395	$ 26,395	$ 26,395	$ -	$ -	$ -	$ -	$ -
74		US 25 Relocation	333000-Services	10133300	333.4	N	7/30/2012		$ 10,299	$ 3,299	$ 3,299	$ -	$ -	$ -	$ -	$ -
75		US 25 Relocation	335000-Hydrants	10133500	335.4	N	7/30/2012		$ 10,299	$ 3,299	$ 3,299	$ -	$ -	$ -	$ -	$ -
76																
77	I12-020010	Leestown Road	331001-T&D Mains	10133100	331.4	Y	4/15/2013	$ 995,789	$ (1,347)	$ 149,557	$ 174,057	$ 42,500	$ 42,500	$ 127,500	$ 127,500	$ 34,000
78		Leestown Road	333000-Services	10133300	333.4	Y	4/15/2013		$ (159)	$ 17,595	$ 20,477	$ 5,000	$ 5,000	$ 15,000	$ 15,000	$ 4,000
79		Leestown Road	335000-Hydrants	10133500	335.4	Y	4/15/2013		$ (79)	$ 8,797	$ 10,239	$ 2,500	$ 2,500	$ 7,500	$ 7,500	$ 2,000
80																
81	I12-020025	Pump Efficiency Replacement	311000-Pumping Equipment	10131120	311.2	Y	4/15/2013	$ 31,380	$ 37,078	$ 84,281	$ 475,037	$ 94,639	$ 80,000	$ 8,000	$ 20,000	$ 20,000
82		Pump Efficiency Replacement	311200-Pump Eqp Electric	10131120	311.2	Y	4/15/2013	$ 54,201	$ 27,808	$ 63,211	$ 356,278	$ 70,979	$ 60,000	$ 6,000	$ 15,000	$ 15,000
83		Pump Efficiency Replacement	339300-Other P/E-Treatment	10133930	339.3	Y	4/15/2013	$ 5,705	$ 9,269	$ 21,070	$ 118,759	$ 23,660	$ 20,000	$ 2,000	$ 5,000	$ 5,000
84		Pump Efficiency Replacement	346190-Remote Control & Instru	10134600	346.5	Y	4/15/2013	$ 1,141	$ 9,269	$ 21,070	$ 118,759	$ 23,660	$ 20,000	$ 2,000	$ 5,000	$ 5,000
85		Pump Efficiency Replacement	347000-Misc Equipment	10134700	347.5	Y	4/15/2013	$ 7,417	$ 9,269	$ 21,070	$ 118,759	$ 23,660	$ 20,000	$ 2,000	$ 5,000	$ 5,000
86																
87	I12-300003	Northern Division Connection	303500-Land & Land Rights-T&D	10130350	303.4	Y	12/28/2013	$ 154,790	$ 47,964	$ 4,304	$ (2,897)	$ (44,000)	$ 282	$ 2,019	$ 19,645	$ 18,858
88		Northern Division Connection	331001-T&D Mains	10133100	331.4	Y	12/28/2013	$ 529,836	$ 2,190,370	$ 196,547	$ (132,281)	$ (2,009,335)	$ 12,868	$ 92,195	$ 897,117	$ 861,179
89		Northern Division Connection	311540-Pumping Equipment Td	10131154	311.4	Y	12/28/2013	$ -	$ 79,941	$ 7,173	$ (4,828)	$ (73,333)	$ 470	$ 3,365	$ 32,742	$ 31,430
90		Northern Division Connection	311200-Pump Eqp Electric	10131120	311.2	Y	12/28/2013	$ -	$ 63,952	$ 5,739	$ (3,862)	$ (58,667)	$ 376	$ 2,692	$ 26,193	$ 25,144
91		Northern Division Connection	346190-Remote Control & Instru	10134600	346.5	Y	12/28/2013	$ -	$ 15,988	$ 1,435	$ (966)	$ (14,667)	$ 94	$ 673	$ 6,548	$ 6,286
92		Northern Division Connection	330100-Elevated Tanks & Standp	10133000	330.4	Y	12/28/2013	$ -	$ 799,405	$ 71,733	$ (48,278)	$ (733,334)	$ 4,697	$ 33,648	$ 327,415	$ 314,299
93									$ 3,197,620	$ 286,930	$ (193,111)	$ (2,933,335)	$ 18,786	$ 134,591	$ 1,309,660	$ 1,257,196
94	IP-1202-9	Todds and Cleveland Rd Main Extensio	331001-T&D Mains	10133100	331.4	Y	11/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
95		Todds and Cleveland Rd Main Extensio	335000-Hydrants	10133500	335.4	Y	11/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
96																
97	IP-1202-10	KRS Clearwell Improvements (332)	304300-Struct & Imp-Treatment	10130430	304.3	Y	6/15/2015		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
98																
99	IP-1202-11	I-75 Main Extension	331001-T&D Mains	10133100	331.4	Y	11/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
100		I-75 Main Extension	335000-Hydrants	10133500	335.4	Y	11/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
101																
102	IP-1202-13	Greenwich Rd Main Extension	331001-T&D Mains	10133100	331.4	Y	10/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
103		Greenwich Rd Main Extension	335000-Hydrants	10133500	335.4	Y	10/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
104																
105	IP-1202-16	North Upper St Main Replacement (34:	331001-T&D Mains	10133100	331.4	Y	12/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
106		North Upper St Main Replacement (34:	333000-Services	10133300	333.4	Y	12/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
107		North Upper St Main Replacement (34:	335000-Hydrants	10133500	335.4	Y	12/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
108																
109	IP-1202-20	KY Major Highway	331001-T&D Mains	10133100	331.4	Y	12/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
110		KY Major Highway	333000-Services	10133300	333.4	Y	12/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
111		KY Major Highway	335000-Hydrants	10133500	335.4	Y	12/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
112																
113	IP-1202-23	RRS Carbon and Pre-Chlorine Feed	304300-Struct & Imp-Treatment	10130430	304.3	Y	9/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
114		RRS Carbon and Pre-Chlorine Feed	311000-Pumping Equipment	10131120	311.2	Y	9/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
115		RRS Carbon and Pre-Chlorine Feed	311200-Pump Eqp Electric	10131120	311.2	Y	9/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
116		RRS Carbon and Pre-Chlorine Feed	320100-Wt Equip Non-Media	10132010	320.3	Y	9/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
117																
118	IP-1202-27	KRS Hydrotreater Valve & Flow Meter	334100-Meters	10133410	334.4	Y	7/30/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
119		KRS Hydrotreater Valve & Flow Meter	334200-Meter Installations	10133420	334.4	Y	7/30/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
120		KRS Hydrotreater Valve & Flow Meter	334300-Meter Vaults	10133410	334.4	Y	7/30/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
121																
122	IP-1202-39	Pump Efficiency Repl	311000-Pumping Equipment	10131120	311.2	Y	9/25/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
123		Pump Efficiency Repl	311200-Pump Eqp Electric	10131120	311.2	Y	9/25/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
124		Pump Efficiency Repl	339300-Other P/E-Treatment	10133930	339.3	Y	9/25/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
125		Pump Efficiency Repl	346190-Remote Control & Instru	10134600	346.5	Y	9/25/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
126		Pump Efficiency Repl	347000-Misc Equipment	10134700	347.5	Y	9/25/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
127																

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Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14
$ 5,344,689	$ 5,640,229	$ 6,567,786	$ 4,510,300	$ 4,653,010	$ 3,232,363	$ 1,928,598	$ 600,309	$ 1,082,162	$ 1,202,934	$ 1,615,614

Line #	FP#	Project Description	JDE / Utility Plant Account	SAP GL Account	NARUC Account	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14
1	D12-**01-P	Projects Funded by Others	331001-T&D Mains	10133100	331.4	$ 184,363	$ 186,253	$ 179,636	$ 156,000	$ 176,381	$ 208,182	$ 157,542	$ 75,636	$ 118,182	$ 137,091	$ 146,545
2		Projects Funded by Others	335000-Hydrants	10133500	335.4	$ 20,485	$ 20,695	$ 19,960	$ 17,333	$ 19,598	$ 23,131	$ 17,505	$ 8,404	$ 13,131	$ 15,232	$ 16,283
3		Projects Funded by Others	333000-Services	10133300	333.4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4		Projects Funded by Others	334100-Meters	10133410	334.4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
5		Projects Funded by Others	334200-Meter Installations	10133420	334.4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
6																
7	R12-**A1	Mains - New	331001-T&D Mains	10133100	331.4	$ 31,516	$ 57,778	$ 52,526	$ 34,667	$ 15,736	$ 10,505	$ 10,503	$ -	$ -	$ 10,505	$ 10,505
8																
9	R12-**B1	Mains - Replaced / Restored	331001-T&D Mains	10133100	331.4	$ 200,080	$ 221,494	$ 222,706	$ 231,110	$ 163,878	$ 136,340	$ 76,982	$ 12,202	$ 48,606	$ 74,222	$ 87,233
10		Mains - Replaced / Restored	333000-Services	10133300	333.4	$ 20,008	$ 22,149	$ 22,271	$ 23,111	$ 16,388	$ 13,634	$ 7,698	$ 1,220	$ 4,861	$ 7,422	$ 8,723
11		Mains - Replaced / Restored	334100-Meters	10133410	334.4	$ 15,006	$ 16,612	$ 16,703	$ 17,333	$ 12,291	$ 10,225	$ 5,774	$ 915	$ 3,645	$ 5,567	$ 6,542
12		Mains - Replaced / Restored	335000-Hydrants	10133500	335.4	$ 15,006	$ 16,612	$ 16,703	$ 17,333	$ 12,291	$ 10,225	$ 5,774	$ 915	$ 3,645	$ 5,567	$ 6,542
13																
14	R12-**C1	Mains - Unscheduled	331001-T&D Mains	10133100	331.4	$ 18,909	$ 15,758	$ 24,162	$ 21,010	$ 32,566	$ 25,212	$ 19,957	$ 21,162	$ 21,010	$ 34,768	$ 14,707
15																
16	R12-**D1	Mains - Relocated	331001-T&D Mains	10133100	331.4	$ 28,364	$ 55,782	$ 75,636	$ 94,545	$ 94,545	$ 47,273	$ 21,744	$ -	$ -	$ 4,728	$ 9,455
17		Mains - Relocated	335000-Hydrants	10133500	335.4	$ 3,152	$ 6,198	$ 8,404	$ 10,505	$ 10,505	$ 5,253	$ 2,416	$ -	$ -	$ 525	$ 1,051
18																
19	R12-**E1	Hydrants, Valves, and Manholes - New	335000-Hydrants	10133500	335.4	$ 12,606	$ 15,758	$ 16,798	$ 12,606	$ 7,312	$ 4,003	$ 3,150	$ -	$ 3,152	$ 12,606	$ 13,867
20		Hydrants, Valves, and Manholes - New	331001-T&D Mains	10133100	331.4	$ 8,404	$ 10,505	$ 11,198	$ 8,404	$ 4,874	$ 2,668	$ 2,100	$ -	$ 2,101	$ 8,404	$ 9,244
21																
22	R12-**F1	Hydrants, Valves, and Manholes - Repla	335000-Hydrants	10133500	335.4	$ 16,388	$ 17,648	$ 13,867	$ 16,388	$ 41,600	$ 6,304	$ 6,297	$ 10,715	$ 10,715	$ 20,170	$ 10,085
23		Hydrants, Valves, and Manholes - Repla	331001-T&D Mains	10133100	331.4	$ 10,926	$ 11,766	$ 9,245	$ 10,926	$ 27,734	$ 4,202	$ 4,198	$ 7,144	$ 7,144	$ 13,447	$ 6,724
24																
25	R12-**G1	Services and Laterals - New	333000-Services	10133300	333.4	$ 103,724	$ 95,742	$ 101,318	$ 94,545	$ 78,788	$ 66,180	$ 52,525	$ 69,333	$ 73,535	$ 90,343	$ 110,161
26																
27	R12-**H1	Services and Laterals - Replaced	333000-Services	10133300	333.4	$ 91,981	$ 99,121	$ 92,818	$ 71,434	$ 85,518	$ 63,030	$ 85,897	$ 64,040	$ 79,798	$ 94,555	$ 94,654
28		Services and Laterals - Replaced	334200-Meter Installations	10133420	334.4											
29																
30	R12-**I1	Meters - New	334100-Meters	10133410	334.4	$ 65,131	$ 59,879	$ 46,747	$ 36,768	$ 40,969	$ 38,868	$ 25,736	$ 24,267	$ 25,737	$ 31,620	$ 48,639
31																
32	R12-**J1	Meters - Replaced	334100-Meters	10133410	334.4	$ 513,845	$ 221,468	$ 97,697	$ 22,061	$ 23,112	$ 19,960	$ 21,007	$ 15,758	$ 309,855	$ 81,939	$ 459,594
33		Meters - Replaced	334200-Meter Installations	10133420	334.4											
34																
35	R12-**K1	ITS Equipment and Systems	334100-Meters	10133410	334.4	$ -	$ 43,087	$ -	$ 73,788	$ -	$ -	$ -	$ -	$ -	$ 38,781	$ 11,000
36																
37	R12-**L1	SCADA Equipment and Systems	346190-Remote Control & Instru	10134600	346.5	$ -	$ 26,263	$ 321,658	$ 107,219	$ 107,219	$ 107,219	$ 107,220	$ -	$ -	$ -	$ 15,758
38																
39	R12-**M1	Security Equipment and Systems	304500-Struct & Imp-General	10130450	304.5	$ 21,010	$ 26,263	$ 26,263	$ 52,525	$ 52,525	$ 26,263	$ 5,251	$ -	$ -	$ -	$ -
40																
41	R12-**N1	Offices and Operations Centers	304500-Struct & Imp-General	10130450	304.5	$ -	$ 21,010	$ -	$ -	$ 21,010	$ 21,010	$ 21,010	$ -	$ -	$ -	$ -
42		Offices and Operations Centers	304100-Struct & Imp-Supply	10130410	304.2											
43		Offices and Operations Centers	340100-Office Furniture & Equip	10134010	340.5											
44		Offices and Operations Centers	340300-Computer Software	10134010	340.5											
45		Offices and Operations Centers	346100-Comm Equip Non-Teleph	10134600	346.5											
46		Offices and Operations Centers	347000-Misc Equipment	10134700	347.5											
47																
48	R12-**O1	Vehicles	341100-Trans Equip Lt Duty Trks	10134100	341.5	$ -	$ 109,200	$ -	$ -	$ -	$ 52,000	$ -	$ -	$ -	$ -	$ -
49		Vehicles	341200-Trans Equip Hvy Duty Trk	10134100	341.5	$ -	$ 109,200	$ -	$ -	$ -	$ 52,000	$ -	$ -	$ -	$ -	$ -
50		Vehicles	341300-Trans Equip Auto Car	10134100	341.5	$ -	$ 112,509	$ -	$ -	$ -	$ 53,576	$ -	$ -	$ -	$ -	$ -
51																
52	R12-**P1	Tools and Equipment	343000-Tools,Shop,Garage Equip	10134300	343.5	$ 10,505	$ 5,253	$ 105,048	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,505	$ 10,505
53																
54	R12-**Q1	Process Plant Facilities and Equipment	304300-Struct & Imp-Treatment	10130430	304.3	$ 104,711	$ 73,535	$ 50,085	$ 87,898	$ 71,838	$ 8,403	$ -	$ -	$ -	$ 14,707	$ 67,232
55		Process Plant Facilities and Equipment	306000-Lake, River & Other Intak	10130600	306.2	$ 39,267	$ 27,576	$ 18,782	$ 32,962	$ 26,939	$ 3,151	$ -	$ -	$ -	$ 5,515	$ 25,212
56		Process Plant Facilities and Equipment	311000-Pumping Equipment	10131120	311.2	$ 65,445	$ 45,960	$ 31,303	$ 54,936	$ 44,899	$ 5,252	$ -	$ -	$ -	$ 9,192	$ 42,020
57		Process Plant Facilities and Equipment	320100-Wt Equip Non-Media	10132010	320.3	$ 26,178	$ 18,384	$ 12,521	$ 21,975	$ 17,960	$ 2,101	$ -	$ -	$ -	$ 3,677	$ 16,808
58		Process Plant Facilities and Equipment	330200-Ground Level Tanks	10133000	330.4	$ 26,178	$ 18,384	$ 12,521	$ 21,975	$ 17,960	$ 2,101	$ -	$ -	$ -	$ 3,677	$ 16,808
59		Process Plant Facilities and Equipment	344000-Laboratory Equipment	10134400	344.5											
60																
61	R12-**S1	Engineering Studies	339600-Other P/E-Cps	10133910	339.1	$ -	$ -	$ 8,929	$ 8,929	$ 8,929	$ 8,929	$ -	$ -	$ -	$ -	$ -
62		Engineering Studies	348000-Other Tangible Property	10134800	348.5	$ -	$ -	$ 1,576	$ 1,576	$ 1,576	$ 1,576	$ -	$ -	$ -	$ -	$ -
63																
64	T12-0102-P	Business Transformation 2010 - 2014	340315-Comp Software Specia	10134010	340.5	$ 107,421	$ 125,738	$ 121,423	$ 115,572	$ 111,740	$ 65,618	$ 64,273	$ 38,834	$ 37,851	$ 37,776	$ -
65		Business Transformation 2010 - 2014	340315-Comp Software Specia	10134010	340.5											

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Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14
$ 5,344,689	$ 5,640,229	$ 6,567,786	$ 4,510,300	$ 4,653,010	$ 3,232,363	$ 1,928,598	$ 600,309	$ 1,082,162	$ 1,202,934	$ 1,615,614

Line #	FP#	Project Description	JDE / Utility Plant Account	SAP GL Account	NARUC Account	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14
66																
67	T12-0103-P	Business Transformation 2010 - 2014	340315-Comp Software Specia	10134010	340.5	$ 2,225	$ 2,225	$ 2,225	$ 2,225	$ 2,225	$ -	$ -	$ -	$ -	$ -	$ -
68																
69	I12-020001	New WTP On Pool 3 of Kentucky	331001-T&D Mains	10133100	331.4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
70																
71	I12-020027	Russell Cave Rd Main Extension	330200-Ground Level Tanks	10133000	330.4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
72																
73	I12-020009	US 25 Relocation	331001-T&D Mains	10133100	331.4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
74		US 25 Relocation	333000-Services	10133300	333.4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
75		US 25 Relocation	335000-Hydrants	10133500	335.4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
76																
77	I12-020010	Leestown Road	331001-T&D Mains	10133100	331.4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
78		Leestown Road	333000-Services	10133300	333.4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
79		Leestown Road	335000-Hydrants	10133500	335.4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
80																
81	I12-020025	Pump Efficiency Replacement	311000-Pumping Equipment	10131120	311.2	$ 50,000	$ 50,000	$ 10,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
82		Pump Efficiency Replacement	311200-Pump Eqp Electric	10131120	311.2	$ 37,500	$ 37,500	$ 7,500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
83		Pump Efficiency Replacement	339300-Other P/E-Treatment	10133930	339.3	$ 12,500	$ 12,500	$ 2,500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
84		Pump Efficiency Replacement	346190-Remote Control & Instru	10134600	346.5	$ 12,500	$ 12,500	$ 2,500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
85		Pump Efficiency Replacement	347000-Misc Equipment	10134700	347.5	$ 12,500	$ 12,500	$ 2,500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
86																
87	I12-300003	Northern Division Connection	303500-Land & Land Rights-T&D	10130350	303.4	$ 25,926	$ 26,996	$ 36,015	$ 22,745	$ 24,781	$ 15,960	$ 9,030	$ 388	$ 228	$ -	$ -
88		Northern Division Connection	331001-T&D Mains	10133100	331.4	$ 1,183,973	$ 1,232,803	$ 1,644,705	$ 1,038,680	$ 1,131,656	$ 728,830	$ 412,384	$ 17,738	$ 10,398	$ -	$ -
89		Northern Division Connection	311540-Pumping Equipment Td	10131154	311.4	$ 43,211	$ 44,993	$ 60,026	$ 37,908	$ 41,301	$ 26,600	$ 15,051	$ 647	$ 379	$ -	$ -
90		Northern Division Connection	311200-Pump Eqp Electric	10131120	311.2	$ 34,569	$ 35,994	$ 48,021	$ 30,326	$ 33,041	$ 21,280	$ 12,040	$ 518	$ 304	$ -	$ -
91		Northern Division Connection	346190-Remote Control & Instru	10134600	346.5	$ 8,642	$ 8,999	$ 12,005	$ 7,582	$ 8,260	$ 5,320	$ 3,010	$ 129	$ 76	$ -	$ -
92		Northern Division Connection	330100-Elevated Tanks & Standp	10133000	330.4	$ 432,107	$ 449,928	$ 600,257	$ 379,080	$ 413,013	$ 265,996	$ 150,505	$ 6,474	$ 3,795	$ -	$ -
93						$ 1,728,428	$ 1,799,713	$ 2,401,029	$ 1,516,321	$ 1,652,052	$ 1,063,985	$ 602,021	$ 25,895	$ 15,180		
94	IP-1202-9	Todds and Cleveland Rd Main Extensioi	331001-T&D Mains	10133100	331.4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 53,997	$ 54,346	$ 157,450	$ 55,712
95		Todds and Cleveland Rd Main Extensioi	335000-Hydrants	10133500	335.4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,385	$ 1,393	$ 4,037	$ 1,429
96																
97	IP-1202-10	KRS Clearwell Improvements (332)	304300-Struct & Imp-Treatment	10130430	304.3	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 13,226	$ 18,581	$ 55,587	$ 161,334
98																
99	IP-1202-11	I-75 Main Extension	331001-T&D Mains	10133100	331.4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 28,309	$ 54,180	$ 28,841	$ 29,027
100		I-75 Main Extension	335000-Hydrants	10133500	335.4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 726	$ 1,389	$ 740	$ 744
101																
102	IP-1202-13	Greenwich Rd Main Extension	331001-T&D Mains	10133100	331.4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 28,309	$ 54,180	$ 54,530	$ 883
103		Greenwich Rd Main Extension	335000-Hydrants	10133500	335.4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 726	$ 1,389	$ 1,398	$ 23
104																
105	IP-1202-16	North Upper St Main Replacement (34:	331001-T&D Mains	10133100	331.4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 25,406	$ 48,623	$ 25,883	$ 644
106		North Upper St Main Replacement (34:	333000-Services	10133300	333.4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,904	$ 5,557	$ 2,958	$ 74
107		North Upper St Main Replacement (34:	335000-Hydrants	10133500	335.4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 726	$ 1,389	$ 740	$ 18
108																
109	IP-1202-20	KY Major Highway	331001-T&D Mains	10133100	331.4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 25,406	$ 25,569	$ 48,788	$ 49,102
110		KY Major Highway	333000-Services	10133300	333.4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,904	$ 2,922	$ 5,576	$ 5,612
111		KY Major Highway	335000-Hydrants	10133500	335.4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 726	$ 731	$ 1,394	$ 1,403
112																
113	IP-1202-23	RRS Carbon and Pre-Chlorine Feed	304300-Struct & Imp-Treatment	10130430	304.3	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,645	$ 2,662	$ 2,679	$ 2,697
114		RRS Carbon and Pre-Chlorine Feed	311000-Pumping Equipment	10131120	311.2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,645	$ 2,662	$ 2,679	$ 2,697
115		RRS Carbon and Pre-Chlorine Feed	311200-Pump Eqp Electric	10131120	311.2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,645	$ 2,662	$ 2,679	$ 2,697
116		RRS Carbon and Pre-Chlorine Feed	320100-Wt Equip Non-Media	10132010	320.3	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,290	$ 5,325	$ 5,359	$ 5,394
117																
118	IP-1202-27	KRS Hydrotreater Valve & Flow Meter	334100-Meters	10133410	334.4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,846	$ 10,177	$ 80
119		KRS Hydrotreater Valve & Flow Meter	334200-Meter Installations	10133420	334.4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,318	$ 7,269	$ 57
120		KRS Hydrotreater Valve & Flow Meter	334300-Meter Vaults	10133410	334.4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,109	$ 11,630	$ 92
121																
122	IP-1202-39	Pump Efficiency Repl	311000-Pumping Equipment	10131120	311.2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 12,000
123		Pump Efficiency Repl	311200-Pump Eqp Electric	10131120	311.2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 9,000
124		Pump Efficiency Repl	339300-Other P/E-Treatment	10133930	339.3	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000
125		Pump Efficiency Repl	346190-Remote Control & Instru	10134600	346.5	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000
126		Pump Efficiency Repl	347000-Misc Equipment	10134700	347.5	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000
127																

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						May-14	Jun-14	Jul-14	Sep-Dec 2012	2013 Additions	2014 Additions
						$ 2,034,918	$ 2,668,441	$ 3,647,540	$ 18,052,586	$ 28,131,907	$ 26,044,023

Line #	FP#	Project Description	JDE / Utility Plant Account	SAP GL Account	NARUC Account	May-14	Jun-14	Jul-14	Sep-Dec 2012	2013 Additions	2014 Additions
1	D12-**01-P	Projects Funded by Others	331001-T&D Mains	10133100	331.4	$ 165,000	$ 188,863	$ 186,254	$ 446,849	$ 1,881,810	$ 1,910,611
2		Projects Funded by Others	335000-Hydrants	10133500	335.4	$ 18,333	$ 20,985	$ 20,695	$ 49,650	$ 209,090	$ 212,290
3		Projects Funded by Others	333000-Services	10133300	333.4	$ -	$ -	$ -	$ -	$ -	$ -
4		Projects Funded by Others	334100-Meters	10133410	334.4	$ -	$ -	$ -	$ -	$ -	$ -
5		Projects Funded by Others	334200-Meter Installations	10133420	334.4	$ -	$ -	$ -	$ -	$ -	$ -
6									$ -		
7	R12-**A1	Mains - New	331001-T&D Mains	10133100	331.4	$ 26,263	$ 31,516	$ 57,778	$ 898,147	$ 249,999	$ 274,956
8									$ -		
9	R12-**B1	Mains - Replaced / Restored	331001-T&D Mains	10133100	331.4	$ 162,464	$ 205,122	$ 221,819	$ 946,102	$ 1,579,490	$ 1,570,101
10		Mains - Replaced / Restored	333000-Services	10133300	333.4	$ 16,246	$ 20,512	$ 22,182	$ 94,610	$ 157,949	$ 157,010
11		Mains - Replaced / Restored	334100-Meters	10133410	334.4	$ 12,185	$ 15,384	$ 16,636	$ 70,958	$ 118,462	$ 117,758
12		Mains - Replaced / Restored	335000-Hydrants	10133500	335.4	$ 12,185	$ 15,384	$ 16,636	$ 70,958	$ 118,462	$ 117,758
13									$ -		
14	R12-**C1	Mains - Unscheduled	331001-T&D Mains	10133100	331.4	$ 21,010	$ 21,010	$ 13,657	$ 77,965	$ 270,231	$ 270,231
15									$ -		
16	R12-**D1	Mains - Relocated	331001-T&D Mains	10133100	331.4	$ 14,182	$ 52,000	$ 63,346	$ 340,200	$ 432,071	$ 463,571
17		Mains - Relocated	335000-Hydrants	10133500	335.4	$ 1,576	$ 5,778	$ 7,038	$ 37,800	$ 48,008	$ 51,508
18									$ -		
19	R12-**E1	Hydrants, Valves, and Manholes - New	335000-Hydrants	10133500	335.4	$ 15,758	$ 12,606	$ 15,758	$ 28,682	$ 110,996	$ 120,900
20		Hydrants, Valves, and Manholes - New	331001-T&D Mains	10133100	331.4	$ 10,505	$ 8,404	$ 10,505	$ 19,121	$ 73,997	$ 80,600
21									$ -		
22	R12-**F1	Hydrants, Valves, and Manholes - Repla	335000-Hydrants	10133500	335.4	$ 10,085	$ 16,388	$ 17,648	$ (8,941)	$ 180,266	$ 180,266
23		Hydrants, Valves, and Manholes - Repla	331001-T&D Mains	10133100	331.4	$ 6,724	$ 10,926	$ 11,766	$ (5,960)	$ 120,177	$ 120,177
24									$ -		
25	R12-**G1	Services and Laterals - New	333000-Services	10133300	333.4	$ 115,565	$ 111,565	$ 116,565	$ 294,980	$ 1,026,132	$ 1,085,116
26									$ -		
27	R12-**H1	Services and Laterals - Replaced	333000-Services	10133300	333.4	$ 101,071	$ 96,981	$ 102,121	$ 241,597	$ 1,002,917	$ 1,040,590
28		Services and Laterals - Replaced	334200-Meter Installations	10133420	334.4				$ -	$ -	$ -
29									$ -		
30	R12-**I1	Meters - New	334100-Meters	10133410	334.4	$ 59,879	$ 65,131	$ 59,879	$ 309,846	$ 504,240	$ 504,241
31									$ -		
32	R12-**J1	Meters - Replaced	334100-Meters	10133410	334.4	$ 580,611	$ 417,379	$ 238,580	$ 2,383,808	$ 2,362,739	$ 2,320,552
33		Meters - Replaced	334200-Meter Installations	10133420	334.4				$ -	$ -	$ -
34									$ -		
35	R12-**K1	ITS Equipment and Systems	334100-Meters	10133410	334.4	$ 32,615	$ 8,371	$ -	$ 184,961	$ 315,805	$ 117,860
36									$ -		
37	R12-**L1	SCADA Equipment and Systems	346190-Remote Control & Instru	10134600	346.5	$ -	$ 26,263	$ 42,021	$ 602,616	$ 1,113,688	$ 131,313
38									$ -		
39	R12-**M1	Security Equipment and Systems	304500-Struct & Imp-General	10130450	304.5	$ -	$ 10,505	$ 10,505	$ 21,010	$ 210,100	$ 157,575
40									$ -		
41	R12-**N1	Offices and Operations Centers	304500-Struct & Imp-General	10130450	304.5	$ 21,010	$ -	$ 21,010	$ (16,348)	$ 105,050	$ 126,060
42		Offices and Operations Centers	304100-Struct & Imp-Supply	10130410	304.2				$ -	$ -	$ -
43		Offices and Operations Centers	340100-Office Furniture & Equip	10134010	340.5				$ -	$ -	$ -
44		Offices and Operations Centers	340300-Computer Software	10134010	340.5				$ -	$ -	$ -
45		Offices and Operations Centers	346100-Comm Equip Non-Teleph	10134600	346.5				$ -	$ -	$ -
46		Offices and Operations Centers	347000-Misc Equipment	10134700	347.5				$ -	$ -	$ -
47									$ -		
48	R12-**O1	Vehicles	341100-Trans Equip Lt Duty Trks	10134100	341.5	$ 15,253	$ 18,027	$ 115,440	$ 67,819	$ 178,533	$ 185,466
49		Vehicles	341200-Trans Equip Hvy Duty Trk	10134100	341.5	$ 15,253	$ 18,027	$ 115,440	$ 67,819	$ 178,533	$ 185,466
50		Vehicles	341300-Trans Equip Auto Car	10134100	341.5	$ 15,715	$ 18,573	$ 118,938	$ 69,874	$ 183,943	$ 191,086
51									$ -		
52	R12-**P1	Tools and Equipment	343000-Tools,Shop,Garage Equip	10134300	343.5	$ 78,788	$ 67,100	$ 89,292	$ 153,926	$ 307,797	$ 343,569
53									$ -		
54	R12-**Q1	Process Plant Facilities and Equipment	304300-Struct & Imp-Treatment	10130430	304.3	$ 60,700	$ 81,939	$ 75,010	$ 330,201	$ 510,776	$ 560,677
55		Process Plant Facilities and Equipment	306000-Lake, River & Other Intak	10130600	306.2	$ 22,763	$ 30,727	$ 28,129	$ 123,825	$ 191,541	$ 210,254
56		Process Plant Facilities and Equipment	311000-Pumping Equipment	10131120	311.2	$ 37,938	$ 51,212	$ 46,881	$ 206,376	$ 319,235	$ 350,423
57		Process Plant Facilities and Equipment	320100-Wt Equip Non-Media	10132010	320.3	$ 15,175	$ 20,485	$ 18,753	$ 82,550	$ 127,694	$ 140,169
58		Process Plant Facilities and Equipment	330200-Ground Level Tanks	10133000	330.4	$ 15,175	$ 20,485	$ 18,753	$ 82,550	$ 127,694	$ 140,169
59		Process Plant Facilities and Equipment	344000-Laboratory Equipment	10134400	344.5				$ -	$ -	$ -
60									$ -		
61	R12-**S1	Engineering Studies	339600-Other P/E-Cps	10133910	339.1	$ -	$ -	$ -	$ 49,422	$ 35,717	$ 35,717
62		Engineering Studies	348000-Other Tangible Property	10134800	348.5	$ -	$ -	$ -	$ 8,722	$ 6,303	$ 6,303
63									$ -		
64	T12-0102-P	Business Transformation 2010 - 2014	340315-Comp Software Specia	10134010	340.5	$ -	$ -	$ -	$ 1,084,978	$ 1,907,040	$ 114,460
65		Business Transformation 2010 - 2014	340315-Comp Software Specia	10134010	340.5				$ -	$ -	$ -

Kentucky American Water
Case No. 2012-00520
Capital Addition Activity by Month, September 2012 - December 2014
Workpaper #: W/P - 1-3
Excel Reference: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Actv CapAddtn

	May-14	Jun-14	Jul-14	Sep-Dec 2012	2013 Additions	2014 Additions
	$ 2,034,918	$ 2,668,441	$ 3,647,540	$ 18,052,586	$ 28,131,907	$ 26,044,023

Line #	FP#	Project Description	JDE / Utility Plant Account	SAP GL Account	NARUC Account	May-14	Jun-14	Jul-14	Sep-Dec 2012	2013 Additions	2014 Additions
66									$ -		
67	T12-0103-P	Business Transformation 2010 - 2014	340315-Comp Software Specia	10134010	340.5	$ -	$ -	$ -	$ 39,602	$ 43,382	$ -
68									$ -		
69	I12-020001	New WTP On Pool 3 of Kentucky	331001-T&D Mains	10133100	331.4	$ -	$ -	$ -	$ 18,410	$ -	$ -
70									$ -		
71	I12-020027	Russell Cave Rd Main Extension	330200-Ground Level Tanks	10133000	330.4	$ -	$ -	$ -	$ (44,080)	$ -	$ -
72									$ -		
73	I12-020009	US 25 Relocation	331001-T&D Mains	10133100	331.4	$ -	$ -	$ -	$ 135,184	$ -	$ -
74		US 25 Relocation	333000-Services	10133300	333.4	$ -	$ -	$ -	$ 16,898	$ -	$ -
75		US 25 Relocation	335000-Hydrants	10133500	335.4	$ -	$ -	$ -	$ 16,898	$ -	$ -
76									$ -		
77	I12-020010	Leestown Road	331001-T&D Mains	10133100	331.4	$ -	$ -	$ -	$ 322,267	$ 374,000	$ -
78		Leestown Road	333000-Services	10133300	333.4	$ -	$ -	$ -	$ 37,914	$ 44,000	$ -
79		Leestown Road	335000-Hydrants	10133500	335.4	$ -	$ -	$ -	$ 18,957	$ 22,000	$ -
80									$ -		
81	I12-020025	Pump Efficiency Replacement	311000-Pumping Equipment	10131120	311.2	$ -	$ -	$ -	$ 596,396	$ 332,639	$ -
82		Pump Efficiency Replacement	311200-Pump Eqp Electric	10131120	311.2	$ -	$ -	$ -	$ 447,297	$ 249,479	$ -
83		Pump Efficiency Replacement	339300-Other P/E-Treatment	10133930	339.3	$ -	$ -	$ -	$ 149,099	$ 83,160	$ -
84		Pump Efficiency Replacement	346190-Remote Control & Instru	10134600	346.5	$ -	$ -	$ -	$ 149,099	$ 83,160	$ -
85		Pump Efficiency Replacement	347000-Misc Equipment	10134700	347.5	$ -	$ -	$ -	$ 149,099	$ 83,160	$ -
86									$ -		
87	I12-300003	Northern Division Connection	303500-Land & Land Rights-T&D	10130350	303.4	$ -	$ -	$ -	$ 49,372	$ 158,257	$ 616
88		Northern Division Connection	331001-T&D Mains	10133100	331.4	$ -	$ -	$ -	$ 2,254,636	$ 7,227,056	$ 28,136
89		Northern Division Connection	311540-Pumping Equipment Td	10131154	311.4	$ -	$ -	$ -	$ 82,286	$ 263,761	$ 1,027
90		Northern Division Connection	311200-Pump Eqp Electric	10131120	311.2	$ -	$ -	$ -	$ 65,829	$ 211,009	$ 821
91		Northern Division Connection	346190-Remote Control & Instru	10134600	346.5	$ -	$ -	$ -	$ 16,457	$ 52,752	$ 205
92		Northern Division Connection	330100-Elevated Tanks & Standp	10133000	330.4	$ -	$ -	$ -	$ 822,860	$ 2,637,612	$ 10,269
93									$ 3,291,439		
94	IP-1202-9	Todds and Cleveland Rd Main Extensio	331001-T&D Mains	10133100	331.4	$ 2,074	$ 57,831	$ 263,712	$ -	$ -	$ 2,340,000
95		Todds and Cleveland Rd Main Extensio	335000-Hydrants	10133500	335.4	$ 53	$ 1,483	$ 6,762	$ -	$ -	$ 60,000
96									$ -		
97	IP-1202-10	KRS Clearwell Improvements (332)	304300-Struct & Imp-Treatment	10130430	304.3	$ 20,100	$ 58,907	$ 270,065	$ -	$ -	$ 3,000,000
98									$ -		
99	IP-1202-11	I-75 Main Extension	331001-T&D Mains	10133100	331.4	$ 35,917	$ 132,601	$ 263,055	$ -	$ -	$ 1,950,000
100		I-75 Main Extension	335000-Hydrants	10133500	335.4	$ 921	$ 3,400	$ 6,745	$ -	$ -	$ 50,000
101									$ -		
102	IP-1202-13	Greenwich Rd Main Extension	331001-T&D Mains	10133100	331.4	$ 108,011	$ 237,150	$ 238,684	$ -	$ -	$ 1,267,500
103		Greenwich Rd Main Extension	335000-Hydrants	10133500	335.4	$ 2,770	$ 6,081	$ 6,120	$ -	$ -	$ 32,500
104									$ -		
105	IP-1202-16	North Upper St Main Replacement (34	331001-T&D Mains	10133100	331.4	$ 92,864	$ 141,922	$ 179,723	$ -	$ -	$ 1,312,747
106		North Upper St Main Replacement (34	333000-Services	10133300	333.4	$ 10,613	$ 16,220	$ 20,540	$ -	$ -	$ 150,028
107		North Upper St Main Replacement (34	335000-Hydrants	10133500	335.4	$ 2,653	$ 4,055	$ 5,135	$ -	$ -	$ 37,507
108									$ -		
109	IP-1202-20	KY Major Highway	331001-T&D Mains	10133100	331.4	$ 960	$ 50,993	$ 120,483	$ -	$ -	$ 875,000
110		KY Major Highway	333000-Services	10133300	333.4	$ 110	$ 5,828	$ 13,770	$ -	$ -	$ 100,000
111		KY Major Highway	335000-Hydrants	10133500	335.4	$ 27	$ 1,457	$ 3,442	$ -	$ -	$ 25,000
112									$ -		
113	IP-1202-23	RRS Carbon and Pre-Chlorine Feed	304300-Struct & Imp-Treatment	10130430	304.3	$ 69	$ 11,146	$ 28,641	$ -	$ -	$ 100,000
114		RRS Carbon and Pre-Chlorine Feed	311000-Pumping Equipment	10131120	311.2	$ 69	$ 11,146	$ 28,641	$ -	$ -	$ 100,000
115		RRS Carbon and Pre-Chlorine Feed	311200-Pump Eqp Electric	10131120	311.2	$ 69	$ 11,146	$ 28,641	$ -	$ -	$ 100,000
116		RRS Carbon and Pre-Chlorine Feed	320100-Wt Equip Non-Media	10132010	320.3	$ 138	$ 22,292	$ 57,282	$ -	$ -	$ 200,000
117									$ -		
118	IP-1202-27	KRS Hydrotreater Valve & Flow Meter	334100-Meters	10133410	334.4	$ 9,616	$ 28,748	$ 28,723	$ -	$ -	$ 87,500
119		KRS Hydrotreater Valve & Flow Meter	334200-Meter Installations	10133420	334.4	$ 6,869	$ 20,534	$ 20,517	$ -	$ -	$ 62,500
120		KRS Hydrotreater Valve & Flow Meter	334300-Meter Vaults	10133410	334.4	$ 10,990	$ 32,855	$ 32,826	$ -	$ -	$ 100,000
121									$ -		
122	IP-1202-39	Pump Efficiency Repl	311000-Pumping Equipment	10131120	311.2	$ 20,000	$ 50,000	$ 50,000	$ -	$ -	$ 183,146
123		Pump Efficiency Repl	311200-Pump Eqp Electric	10131120	311.2	$ 15,000	$ 37,500	$ 37,500	$ -	$ -	$ 137,360
124		Pump Efficiency Repl	339300-Other P/E-Treatment	10133930	339.3	$ 5,000	$ 12,500	$ 12,500	$ -	$ -	$ 45,787
125		Pump Efficiency Repl	346190-Remote Control & Instru	10134600	346.5	$ 5,000	$ 12,500	$ 12,500	$ -	$ -	$ 45,787
126		Pump Efficiency Repl	347000-Misc Equipment	10134700	347.5	$ 5,000	$ 12,500	$ 12,500	$ -	$ -	$ 45,787
127											

Kentucky American Water
Case No. 2012-00520
AFUDC Activity by Month, September 2012 - December 2014

Automatically calculates: For Projects Deemed AFUDC Eligible, Prior Month CWIP Balance x Annual AFUDC Rate / 12)

Workpaper: W/P - 1-4

Excel: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]AFUDC Activity

	Bal Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13
AFUDC Rate (Approved Case No.2010-00036 til Jul. 2013 & Proposed Aug. 2013 on):		7.74%	7.74%	7.74%	7.74%	7.74%	7.74%	7.74%
AFUDC Begin Balance & Activity:	$ 442,219	$ 78,253	$ 87,762	$ 104,050	$ 83,967	$ 76,565	$ 75,698	$ 63,397
Additional Equity Gross Up:		$ 27,989	$ 31,390	$ 37,216	$ 30,033	$ 27,386	$ 27,075	$ 22,676

JDE Account	FP#	Project Description	JDE / Utility Plant Account	SAP GL Account	NARUC Account	AFUDC?	Mos Til In-Svc In-Service Date	AFUDC Bal Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13
331001	D12-**01-P	Projects Funded by Others	331001-T&D Mains	10133100	331.4	N	2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
335000		Projects Funded by Others	335000-Hydrants	10133500	335.4	N	2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
333000		Projects Funded by Others	333000-Services	10133300	333.4	N	2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
334100		Projects Funded by Others	334100-Meters	10133410	334.4	N	2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
334200		Projects Funded by Others	334200-Meter Installations	10133420	334.4	N	2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	R12-**A1	Mains - New	331001-T&D Mains	10133100	331.4	Y	2	$ 226	$ 484	$ 1,380	$ 5,387	$ 4,413	$ -	$ -	$ 68
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	R12-**B1	Mains - Replaced / Restored	331001-T&D Mains	10133100	331.4	Y	2	$ 155	$ 2,338	$ 3,121	$ 4,420	$ 3,016	$ 116	$ 534	$ 1,022
333000		Mains - Replaced / Restored	333000-Services	10133300	333.4	Y	2		$ 168	$ 312	$ 442	$ 302	$ 12	$ 53	$ 102
334100		Mains - Replaced / Restored	334100-Meters	10133410	334.4	Y	2		$ 126	$ 234	$ 331	$ 226	$ 9	$ 40	$ 77
335000		Mains - Replaced / Restored	335000-Hydrants	10133500	335.4	Y	2	$ 134	$ 142	$ 234	$ 331	$ 226	$ 9	$ 40	$ 77
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	R12-**C1	Mains - Unscheduled	331001-T&D Mains	10133100	331.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	R12-**D1	Mains - Relocated	331001-T&D Mains	10133100	331.4	Y	2	$ -	$ -	$ 581	$ 2,194	$ 1,614	$ -	$ -	$ 30
335000		Mains - Relocated	335000-Hydrants	10133500	335.4	Y	2	$ -	$ -	$ 65	$ 244	$ 179	$ -	$ -	$ 3
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
335000	R12-**E1	Hydrants, Valves, and Manholes - New	335000-Hydrants	10133500	335.4	N	1	$ 42	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001		Hydrants, Valves, and Manholes - New	331001-T&D Mains	10133100	331.4	N	1		$ -	$ -	$ -	$ -	$ -	$ -	$ -
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
335000	R12-**F1	Hydrants, Valves, and Manholes - Replac	335000-Hydrants	10133500	335.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001		Hydrants, Valves, and Manholes - Replac	331001-T&D Mains	10133100	331.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
333000	R12-**G1	Services and Laterals - New	333000-Services	10133300	333.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
333000	R12-**H1	Services and Laterals - Replaced	333000-Services	10133300	333.4	N	1	$ 37	$ -	$ -	$ -	$ -	$ -	$ -	$ -
334200		Services and Laterals - Replaced	334200-Meter Installations	10133420	334.4	N	1	$ 4	$ -	$ -	$ -	$ -	$ -	$ -	$ -
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
334100	R12-**I1	Meters - New	334100-Meters	10133410	334.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
334100	R12-**J1	Meters - Replaced	334100-Meters	10133410	334.4	N	1		$ -	$ -	$ -	$ -	$ -	$ -	$ -
334200		Meters - Replaced	334200-Meter Installations	10133420	334.4	N	1	$ 2	$ -	$ -	$ -	$ -	$ -	$ -	$ -
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
334100	R12-**K1	ITS Equipment and Systems	334100-Meters	10133410	334.4	N	1	$ 2	$ -	$ -	$ -	$ -	$ -	$ -	$ -
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
346190	R12-**L1	SCADA Equipment and Systems	346190-Remote Control & In	10134600	346.5	Y	6	$ 2,744	$ 3,227	$ 3,760	$ 6,852	$ 6,852	$ 6,852	$ 5,962	$ 5,767
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
304500	R12-**M1	Security Equipment and Systems	304500-Struct & Imp-Genera	10130450	304.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
304500	R12-**N1	Offices and Operations Centers	304500-Struct & Imp-Genera	10130450	304.5	N	1	$ 778	$ -	$ -	$ -	$ -	$ -	$ -	$ -
304100		Offices and Operations Centers	304100-Struct & Imp-Supply	10130410	304.2	N	1		$ -	$ -	$ -	$ -	$ -	$ -	$ -
340100		Offices and Operations Centers	340100-Office Furniture & E	10134010	340.5	N	1		$ -	$ -	$ -	$ -	$ -	$ -	$ -
340300		Offices and Operations Centers	340300-Computer Software	10134010	340.5	N	1		$ -	$ -	$ -	$ -	$ -	$ -	$ -
346100		Offices and Operations Centers	346100-Comm Equip Non-Te	10134600	346.5	N	1	$ 1	$ -	$ -	$ -	$ -	$ -	$ -	$ -
347000		Offices and Operations Centers	347000-Misc Equipment	10134700	347.5	N	1		$ -	$ -	$ -	$ -	$ -	$ -	$ -
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
341100	R12-**O1	Vehicles	341100-Trans Equip Lt Duty	10134100	341.5	N	1		$ -	$ -	$ -	$ -	$ -	$ -	$ -
341200		Vehicles	341200-Trans Equip Hvy Dut	10134100	341.5	N	1		$ -	$ -	$ -	$ -	$ -	$ -	$ -
341300		Vehicles	341300-Trans Equip Auto Ca	10134100	341.5	N	1		$ -	$ -	$ -	$ -	$ -	$ -	$ -
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
343000	R12-**P1	Tools and Equipment	343000-Tools,Shop,Garage I	10134300	343.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
304300	R12-**Q1	Process Plant Facilities and Equipment	304300-Struct & Imp-Treatn	10130430	304.3	Y	2		$ 803	$ 1,490	$ 1,327	$ 640	$ -	$ 107	$ 602
306000		Process Plant Facilities and Equipment	306000-Lake, River & Other	10130600	306.2	Y	2	$ 12	$ 311	$ 559	$ 498	$ 240	$ -	$ 40	$ 226
311000		Process Plant Facilities and Equipment	311000-Pumping Equipmen	10131120	311.2	Y	2		$ 597	$ 931	$ 829	$ 400	$ -	$ 67	$ 376
320100		Process Plant Facilities and Equipment	320100-Wt Equip Non-Medi	10132010	320.3	Y	2		$ 201	$ 372	$ 332	$ 160	$ -	$ 27	$ 150
330200		Process Plant Facilities and Equipment	330200-Ground Level Tanks	10133000	330.4	Y	2	$ 273	$ 1,515	$ 372	$ 332	$ 160	$ -	$ 27	$ 150
344000		Process Plant Facilities and Equipment	344000-Laboratory Equipme	10134400	344.5	Y	2		$ 46	$ -	$ -	$ -	$ -	$ -	$ -

Kentucky American Water
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AFUDC Activity by Month, September 2012 - December 2014
Automatically calculates: For Projects Deemed AFUDC Eligible, Prior Month CWIP Balance x Annual AFUDC Rate / 12)
Workpaper: W/P - 1-4

Excel: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]AFUDC Activity

	Bal Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13
AFUDC Rate (Approved Case No.2010-00036 til Jul. 2013 & Proposed Aug. 2013 on):		7.74%	7.74%	7.74%	7.74%	7.74%	7.74%	7.74%
AFUDC Begin Balance & Activity:	$ 442,219	$ 78,253	$ 87,762	$ 104,050	$ 83,967	$ 76,565	$ 75,698	$ 63,397
Additional Equity Gross Up:		$ 27,989	$ 31,390	$ 37,216	$ 30,033	$ 27,386	$ 27,075	$ 22,676

JDE Account	FP#	Project Description	JDE / Utility Plant Account	SAP GL Account	NARUC Account	AFUDC?	Mos Til In-Svc In-Service Date	AFUDC Bal Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
339600	R12-**S1	Engineering Studies	339600-Other P/E-Cps	10133910	339.1	Y	6	$ 18,071	$ 2,688	$ 2,794	$ 2,901	$ 2,901	$ 2,901	$ 319	$ 213
348000		Engineering Studies	348000-Other Tangible Prop	10134800	348.5	Y	6	$ 9,745	$ 1,488	$ 1,507	$ 1,526	$ 1,526	$ 1,526	$ 56	$ 38
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
340200	T12-0102-P	Business Transformation 2010 - 2014	340200-Comp & Periph Equi	10134010	340.5	Y	5/1/2013	$ 269,926	$ 28,010	$ 29,751	$ 31,330	$ 33,410	$ 35,705	$ 37,024	$ 38,334
340300		Business Transformation 2010 - 2014	340300-Computer Software	10134010	340.5	Y	5/1/2013		$ -	$ -	$ -	$ -	$ -	$ -	$ -
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
340315	T12-0103-P	Business Transformation 2010 - 2014	340315-Comp Software Spe	10134010	340.5	N	8/1/2012	$ 11,097	$ -	$ -	$ -	$ -	$ -	$ -	$ -
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	I12-020001	New WTP On Pool 3 of Kentucky	331001-T&D Mains	10133100	331.4	N	9/20/2010		$ -	$ -	$ -	$ -	$ -	$ -	$ -
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
330200	I12-020027	Russell Cave Rd Main Extension	330200-Ground Level Tanks	10133000	330.4	Y	7/15/2012	$ 22,202	$ 3,413	$ 3,258	$ -	$ -	$ -	$ -	$ -
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	I12-020009	US 25 Relocation	331001-T&D Mains	10133100	331.4	N	7/30/2012		$ -	$ -	$ -	$ -	$ -	$ -	$ -
333000		US 25 Relocation	333000-Services	10133300	333.4	N	7/30/2012		$ -	$ -	$ -	$ -	$ -	$ -	$ -
335000		US 25 Relocation	335000-Hydrants	10133500	335.4	N	7/30/2012		$ -	$ -	$ -	$ -	$ -	$ -	$ -
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	I12-020010	Leestown Road	331001-T&D Mains	10133100	331.4	Y	4/15/2013	$ 84,118	$ 6,414	$ 7,379	$ 8,501	$ 8,776	$ 9,050	$ 9,872	$ -
333000		Leestown Road	333000-Services	10133300	333.4	Y	4/15/2013		$ (1)	$ 112	$ 245	$ 277	$ 309	$ 406	$ -
335000		Leestown Road	335000-Hydrants	10133500	335.4	Y	4/15/2013		$ (1)	$ 56	$ 122	$ 138	$ 155	$ 203	$ -
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
311000	I12-020025	Pump Efficiency Replacement	311000-Pumping Equipmen	10131120	311.2	Y	4/15/2013		$ 442	$ 985	$ 4,049	$ 4,660	$ 5,176	$ 5,227	$ -
311200		Pump Efficiency Replacement	311200-Pump Eqp Electric	10131120	311.2	Y	4/15/2013		$ 529	$ 937	$ 3,235	$ 3,692	$ 4,079	$ 4,118	$ -
339300		Pump Efficiency Replacement	339300-Other P/E-Treatmer	10133930	339.3	Y	4/15/2013		$ 97	$ 232	$ 998	$ 1,151	$ 1,280	$ 1,293	$ -
346190		Pump Efficiency Replacement	346190-Remote Control & Ir	10134600	346.5	Y	4/15/2013	$ 372	$ 67	$ 203	$ 969	$ 1,122	$ 1,251	$ 1,264	$ -
347000		Pump Efficiency Replacement	347000-Misc Equipment	10134700	347.5	Y	4/15/2013		$ 108	$ 244	$ 1,010	$ 1,162	$ 1,291	$ 1,304	$ -
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
303500	I12-300003	Northern Division Connection	303500-Land & Land Rights-	10130350	303.4	Y	12/28/2013		$ 1,308	$ 1,336	$ 1,317	$ 1,033	$ 1,035	$ 1,048	$ 1,175
331001		Northern Division Connection	331001-T&D Mains	10133100	331.4	Y	12/28/2013	$ 22,280	$ 17,545	$ 18,813	$ 17,960	$ 5,000	$ 5,083	$ 5,677	$ 11,464
311540		Northern Division Connection	311540-Pumping Equipmen	10131154	311.4	Y	12/28/2013		$ 516	$ 562	$ 531	$ 58	$ 61	$ 82	$ 294
311200		Northern Division Connection	311200-Pump Eqp Electric	10131120	311.2	Y	12/28/2013		$ 412	$ 450	$ 425	$ 46	$ 49	$ 66	$ 235
346190		Northern Division Connection	346190-Remote Control & Ir	10134600	346.5	Y	12/28/2013		$ 103	$ 112	$ 106	$ 12	$ 12	$ 16	$ 59
330100		Northern Division Connection	330100-Elevated Tanks & St	10133000	330.4	Y	12/28/2013		$ 5,156	$ 5,619	$ 5,307	$ 577	$ 608	$ 825	$ 2,937
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	IP-1202-9	Todds and Cleveland Rd Main Extension	331001-T&D Mains	10133100	331.4	Y	11/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -
335000		Todds and Cleveland Rd Main Extension	335000-Hydrants	10133500	335.4	Y	11/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
304300	IP-1202-10	KRS Clearwell Improvements (332)	304300-Struct & Imp-Treatn	10130430	304.3	Y	6/15/2015		$ -	$ -	$ -	$ -	$ -	$ -	$ -
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	IP-1202-11	I-75 Main Extension	331001-T&D Mains	10133100	331.4	Y	11/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -
335000		I-75 Main Extension	335000-Hydrants	10133500	335.4	Y	11/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	IP-1202-13	Greenwich Rd Main Extension	331001-T&D Mains	10133100	331.4	Y	10/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -
335000		Greenwich Rd Main Extension	335000-Hydrants	10133500	335.4	Y	10/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	IP-1202-16	North Upper St Main Replacement (343)	331001-T&D Mains	10133100	331.4	Y	12/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -
333000		North Upper St Main Replacement (343)	333000-Services	10133300	333.4	Y	12/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -
335000		North Upper St Main Replacement (343)	335000-Hydrants	10133500	335.4	Y	12/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	IP-1202-20	KY Major Highway	331001-T&D Mains	10133100	331.4	Y	12/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -
333000		KY Major Highway	333000-Services	10133300	333.4	Y	12/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -
335000		KY Major Highway	335000-Hydrants	10133500	335.4	Y	12/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
304300	IP-1202-23	RRS Carbon and Pre-Chlorine Feed	304300-Struct & Imp-Treatn	10130430	304.3	Y	9/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -
311000		RRS Carbon and Pre-Chlorine Feed	311000-Pumping Equipmen	10131120	311.2	Y	9/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -
311200		RRS Carbon and Pre-Chlorine Feed	311200-Pump Eqp Electric	10131120	311.2	Y	9/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -
320100		RRS Carbon and Pre-Chlorine Feed	320100-Wt Equip Non-Medi	10132010	320.3	Y	9/15/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
334100	IP-1202-27	KRS Hydrotreater Valve & Flow Meter	334100-Meters	10133410	334.4	Y	7/30/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -

Kentucky American Water
Case No. 2012-00520
AFUDC Activity by Month, September 2012 - December 2014

Automatically calculates: For Projects Deemed AFUDC Eligible, Prior Month CWIP Balance x Annual AFUDC Rate / 12)

Workpaper: W/P - 1-4

Excel: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]AFUDC Activity

	Bal Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13
AFUDC Rate (Approved Case No.2010-00036 til Jul. 2013 & Proposed Aug. 2013 on):		7.74%	7.74%	7.74%	7.74%	7.74%	7.74%	7.74%
AFUDC Begin Balance & Activity:	$ 442,219	$ 78,253	$ 87,762	$ 104,050	$ 83,967	$ 76,565	$ 75,698	$ 63,397
Additional Equity Gross Up:		$ 27,989	$ 31,390	$ 37,216	$ 30,033	$ 27,386	$ 27,075	$ 22,676

JDE Account	FP#	Project Description	JDE / Utility Plant Account	SAP GL Account	NARUC Account	AFUDC?	Mos Til In-Svc In-Service Date	AFUDC Bal Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13
334200		KRS Hydrotreater Valve & Flow Meter	334200-Meter Installations	10133420	334.4	Y	7/30/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -
334300		KRS Hydrotreater Valve & Flow Meter	334300-Meter Vaults	10133410	334.4	Y	7/30/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -
									$ -	$ -	$ -	$ -	$ -	$ -	$ -
311000	IP-1202-39	Pump Efficiency Repl	311000-Pumping Equipmen	10131120	311.2	Y	9/25/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -
311200		Pump Efficiency Repl	311200-Pump Eqp Electric	10131120	311.2	Y	9/25/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -
339300		Pump Efficiency Repl	339300-Other P/E-Treatmer	10133930	339.3	Y	9/25/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -
346190		Pump Efficiency Repl	346190-Remote Control & Ir	10134600	346.5	Y	9/25/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -
347000		Pump Efficiency Repl	347000-Misc Equipment	10134700	347.5	Y	9/25/2014		$ -	$ -	$ -	$ -	$ -	$ -	$ -

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AFUDC Activity by Month, September 2012 - December 2014
Automatically calculates: For Projects Deemed AFUDC Eligible, Prior Month CWIP Balance x Annual AFUDC Rate / 12)
Workpaper: W/P - 1-4

Excel: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]AFUDC Activity

	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13
AFUDC Rate (Approved Case No.2010-00036 til Jul. 2013 & Proposed Aug. 2013 on):	7.74%	7.74%	7.74%	8.20%	8.20%	8.20%	8.20%	8.20%
AFUDC Begin Balance & Activity:	$ 35,397	$ 43,090	$ 56,822	$ 78,638	$ 88,070	$ 99,853	$ 105,205	$ 8,229
Additional Equity Gross Up:	$ 12,661	$ 15,412	$ 20,324	$ 30,405	$ 34,052	$ 38,608	$ 40,677	$ 3,182

JDE Account	FP#	Project Description	JDE / Utility Plant Account	SAP GL Account	NARUC Account	AFUDC?	Mos Til In-Svc In-Service Date	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13
331001	D12-**01-P	Projects Funded by Others	331001-T&D Mains	10133100	331.4	N	2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
335000		Projects Funded by Others	335000-Hydrants	10133500	335.4	N	2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
333000		Projects Funded by Others	333000-Services	10133300	333.4	N	2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
334100		Projects Funded by Others	334100-Meters	10133410	334.4	N	2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
334200		Projects Funded by Others	334200-Meter Installations	10133420	334.4	N	2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	R12-**A1	Mains - New	331001-T&D Mains	10133100	331.4	Y	2	$ 237	$ 373	$ 576	$ 754	$ 596	$ 344	$ 179	$ 144
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	R12-**B1	Mains - Replaced / Restored	331001-T&D Mains	10133100	331.4	Y	2	$ 1,540	$ 2,261	$ 2,719	$ 3,035	$ 3,101	$ 2,699	$ 2,051	$ 1,458
333000		Mains - Replaced / Restored	333000-Services	10133300	333.4	Y	2	$ 154	$ 226	$ 272	$ 304	$ 310	$ 270	$ 205	$ 146
334100		Mains - Replaced / Restored	334100-Meters	10133410	334.4	Y	2	$ 115	$ 170	$ 204	$ 228	$ 233	$ 202	$ 154	$ 109
335000		Mains - Replaced / Restored	335000-Hydrants	10133500	335.4	Y	2	$ 115	$ 170	$ 204	$ 228	$ 233	$ 202	$ 154	$ 109
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	R12-**C1	Mains - Unscheduled	331001-T&D Mains	10133100	331.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	R12-**D1	Mains - Relocated	331001-T&D Mains	10133100	331.4	Y	2	$ 91	$ 244	$ 543	$ 898	$ 1,163	$ 1,292	$ 969	$ 472
335000		Mains - Relocated	335000-Hydrants	10133500	335.4	Y	2	$ 10	$ 27	$ 60	$ 100	$ 129	$ 144	$ 108	$ 52
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
335000	R12-**E1	Hydrants, Valves, and Manholes - New	335000-Hydrants	10133500	335.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001		Hydrants, Valves, and Manholes - New	331001-T&D Mains	10133100	331.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
335000	R12-**F1	Hydrants, Valves, and Manholes - Replac	335000-Hydrants	10133500	335.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001		Hydrants, Valves, and Manholes - Replac	331001-T&D Mains	10133100	331.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
333000	R12-**G1	Services and Laterals - New	333000-Services	10133300	333.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
333000	R12-**H1	Services and Laterals - Replaced	333000-Services	10133300	333.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
334200		Services and Laterals - Replaced	334200-Meter Installations	10133420	334.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
334100	R12-**I1	Meters - New	334100-Meters	10133410	334.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
334100	R12-**J1	Meters - Replaced	334100-Meters	10133410	334.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
334200		Meters - Replaced	334200-Meter Installations	10133420	334.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
334100	R12-**K1	ITS Equipment and Systems	334100-Meters	10133410	334.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
346190	R12-**L1	SCADA Equipment and Systems	346190-Remote Control & Ir	10134600	346.5	Y	6	$ 5,265	$ 2,173	$ 2,342	$ 4,680	$ 3,214	$ 3,875	$ 4,575	$ 5,308
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
304500	R12-**M1	Security Equipment and Systems	304500-Struct & Imp-Genera	10130450	304.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
304500	R12-**N1	Offices and Operations Centers	304500-Struct & Imp-Genera	10130450	304.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
304100		Offices and Operations Centers	304100-Struct & Imp-Supply	10130410	304.2	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
340100		Offices and Operations Centers	340100-Office Furniture & E	10134010	340.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
340300		Offices and Operations Centers	340300-Computer Software	10134010	340.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
346100		Offices and Operations Centers	346100-Comm Equip Non-Te	10134600	346.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
347000		Offices and Operations Centers	347000-Misc Equipment	10134700	347.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
341100	R12-**O1	Vehicles	341100-Trans Equip Lt Duty	10134100	341.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
341200		Vehicles	341200-Trans Equip Hvy Dut	10134100	341.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
341300		Vehicles	341300-Trans Equip Auto Ca	10134100	341.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
343000	R12-**P1	Tools and Equipment	343000-Tools,Shop,Garage E	10134300	343.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
304300	R12-**Q1	Process Plant Facilities and Equipment	304300-Struct & Imp-Treatn	10130430	304.3	Y	2	$ 630	$ 811	$ 1,150	$ 845	$ 943	$ 1,092	$ 548	$ 57
306000		Process Plant Facilities and Equipment	306000-Lake, River & Other	10130600	306.2	Y	2	$ 236	$ 304	$ 431	$ 317	$ 354	$ 409	$ 206	$ 22
311000		Process Plant Facilities and Equipment	311000-Pumping Equipmen	10131120	311.2	Y	2	$ 394	$ 507	$ 719	$ 528	$ 589	$ 682	$ 343	$ 36
320100		Process Plant Facilities and Equipment	320100-Wt Equip Non-Medi	10132010	320.3	Y	2	$ 158	$ 203	$ 287	$ 211	$ 236	$ 273	$ 137	$ 14
330200		Process Plant Facilities and Equipment	330200-Ground Level Tanks	10133000	330.4	Y	2	$ 158	$ 203	$ 287	$ 211	$ 236	$ 273	$ 137	$ 14
344000		Process Plant Facilities and Equipment	344000-Laboratory Equipme	10134400	344.5	Y	2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

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Case No. 2012-00520
AFUDC Activity by Month, September 2012 - December 2014
Automatically calculates: For Projects Deemed AFUDC Eligible, Prior Month CWIP Balance x Annual AFUDC Rate / 12)
Workpaper: W/P - 1-4

Excel: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]AFUDC Activity

	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13
AFUDC Rate (Approved Case No.2010-00036 til Jul. 2013 & Proposed Aug. 2013 on):	7.74%	7.74%	7.74%	8.20%	8.20%	8.20%	8.20%	8.20%
AFUDC Begin Balance & Activity:	$ 35,397	$ 43,090	$ 56,822	$ 78,638	$ 88,070	$ 99,853	$ 105,205	$ 8,229
Additional Equity Gross Up:	$ 12,661	$ 15,412	$ 20,324	$ 30,405	$ 34,052	$ 38,608	$ 40,677	$ 3,182

JDE Account	FP#	Project Description	JDE / Utility Plant Account	SAP GL Account	NARUC Account	AFUDC?	Mos Til In-Svc In-Service Date	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
339600	R12-**S1	Engineering Studies	339600-Other P/E-Cps	10133910	339.1	Y	6	$ 106	$ -	$ -	$ 61	$ 122	$ 183	$ 244	$ 244
348000		Engineering Studies	348000-Other Tangible Prop	10134800	348.5	Y	6	$ 19	$ (0)	$ (0)	$ 11	$ 22	$ 32	$ 43	$ 43
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
340200	T12-0102-P	Business Transformation 2010 - 2014	340200-Comp & Periph Equi	10134010	340.5	Y	5/1/2013	$ 1,898							
340300		Business Transformation 2010 - 2014	340300-Computer Software	10134010	340.5	Y	5/1/2013	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
340315	T12-0103-P	Business Transformation 2010 - 2014	340315-Comp Software Spe	10134010	340.5	N	8/1/2012	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	I12-020001	New WTP On Pool 3 of Kentucky	331001-T&D Mains	10133100	331.4	N	9/20/2010	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
330200	I12-020027	Russell Cave Rd Main Extension	330200-Ground Level Tanks	10133000	330.4	Y	7/15/2012	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	I12-020009	US 25 Relocation	331001-T&D Mains	10133100	331.4	N	7/30/2012	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
333000		US 25 Relocation	333000-Services	10133300	333.4	N	7/30/2012	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
335000		US 25 Relocation	335000-Hydrants	10133500	335.4	N	7/30/2012	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	I12-020010	Leestown Road	331001-T&D Mains	10133100	331.4	Y	4/15/2013	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
333000		Leestown Road	333000-Services	10133300	333.4	Y	4/15/2013	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
335000		Leestown Road	335000-Hydrants	10133500	335.4	Y	4/15/2013	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
311000	I12-020025	Pump Efficiency Replacement	311000-Pumping Equipmen	10131120	311.2	Y	4/15/2013	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
311200		Pump Efficiency Replacement	311200-Pump Eqp Electric	10131120	311.2	Y	4/15/2013	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
339300		Pump Efficiency Replacement	339300-Other P/E-Treatmer	10133930	339.3	Y	4/15/2013	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
346190		Pump Efficiency Replacement	346190-Remote Control & Ir	10134600	346.5	Y	4/15/2013	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
347000		Pump Efficiency Replacement	347000-Misc Equipment	10134700	347.5	Y	4/15/2013	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
303500	I12-300003	Northern Division Connection	303500-Land & Land Rights-	10130350	303.4	Y	12/28/2013	$ 1,296	$ 1,463	$ 1,638	$ 1,981	$ 2,136	$ 2,306	$ 2,415	$ -
331001		Northern Division Connection	331001-T&D Mains	10133100	331.4	Y	12/28/2013	$ 17,018	$ 24,655	$ 32,607	$ 45,783	$ 52,881	$ 60,614	$ 65,594	$ -
311540		Northern Division Connection	311540-Pumping Equipmen	10131154	311.4	Y	12/28/2013	$ 496	$ 775	$ 1,065	$ 1,539	$ 1,798	$ 2,080	$ 2,262	$ -
311200		Northern Division Connection	311200-Pump Eqp Electric	10131120	311.2	Y	12/28/2013	$ 397	$ 620	$ 852	$ 1,231	$ 1,438	$ 1,664	$ 1,809	$ -
346190		Northern Division Connection	346190-Remote Control & Ir	10134600	346.5	Y	12/28/2013	$ 99	$ 155	$ 213	$ 308	$ 360	$ 416	$ 452	$ -
330100		Northern Division Connection	330100-Elevated Tanks & St	10133000	330.4	Y	12/28/2013	$ 4,964	$ 7,751	$ 10,653	$ 15,388	$ 17,978	$ 20,800	$ 22,618	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	IP-1202-9	Todds and Cleveland Rd Main Extension	331001-T&D Mains	10133100	331.4	Y	11/15/2014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
335000		Todds and Cleveland Rd Main Extension	335000-Hydrants	10133500	335.4	Y	11/15/2014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
304300	IP-1202-10	KRS Clearwell Improvements (332)	304300-Struct & Imp-Treatn	10130430	304.3	Y	6/15/2015	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	IP-1202-11	I-75 Main Extension	331001-T&D Mains	10133100	331.4	Y	11/15/2014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
335000		I-75 Main Extension	335000-Hydrants	10133500	335.4	Y	11/15/2014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	IP-1202-13	Greenwich Rd Main Extension	331001-T&D Mains	10133100	331.4	Y	10/15/2014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
335000		Greenwich Rd Main Extension	335000-Hydrants	10133500	335.4	Y	10/15/2014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	IP-1202-16	North Upper St Main Replacement (343)	331001-T&D Mains	10133100	331.4	Y	12/15/2014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
333000		North Upper St Main Replacement (343)	333000-Services	10133300	333.4	Y	12/15/2014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
335000		North Upper St Main Replacement (343)	335000-Hydrants	10133500	335.4	Y	12/15/2014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	IP-1202-20	KY Major Highway	331001-T&D Mains	10133100	331.4	Y	12/15/2014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
333000		KY Major Highway	333000-Services	10133300	333.4	Y	12/15/2014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
335000		KY Major Highway	335000-Hydrants	10133500	335.4	Y	12/15/2014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
304300	IP-1202-23	RRS Carbon and Pre-Chlorine Feed	304300-Struct & Imp-Treatn	10130430	304.3	Y	9/15/2014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
311000		RRS Carbon and Pre-Chlorine Feed	311000-Pumping Equipmen	10131120	311.2	Y	9/15/2014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
311200		RRS Carbon and Pre-Chlorine Feed	311200-Pump Eqp Electric	10131120	311.2	Y	9/15/2014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
320100		RRS Carbon and Pre-Chlorine Feed	320100-Wt Equip Non-Medi	10132010	320.3	Y	9/15/2014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
334100	IP-1202-27	KRS Hydrotreater Valve & Flow Meter	334100-Meters	10133410	334.4	Y	7/30/2014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

Kentucky American Water
Case No. 2012-00520
AFUDC Activity by Month, September 2012 - December 2014

Automatically calculates: For Projects Deemed AFUDC Eligible, Prior Month CWIP Balance x Annual AFUDC Rate / 12)

Workpaper: W/P - 1-4

Excel: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]AFUDC Activity

	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13
AFUDC Rate (Approved Case No.2010-00036 til Jul. 2013 & Proposed Aug. 2013 on):	7.74%	7.74%	7.74%	8.20%	8.20%	8.20%	8.20%	8.20%
AFUDC Begin Balance & Activity:	$ 35,397	$ 43,090	$ 56,822	$ 78,638	$ 88,070	$ 99,853	$ 105,205	$ 8,229
Additional Equity Gross Up:	$ 12,661	$ 15,412	$ 20,324	$ 30,405	$ 34,052	$ 38,608	$ 40,677	$ 3,182

JDE Account	FP#	Project Description	JDE / Utility Plant Account	SAP GL Account	NARUC Account	AFUDC?	Mos Til In-Svc In-Service Date	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13
334200		KRS Hydrotreater Valve & Flow Meter	334200-Meter Installations	10133420	334.4	Y	7/30/2014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
334300		KRS Hydrotreater Valve & Flow Meter	334300-Meter Vaults	10133410	334.4	Y	7/30/2014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
311000	IP-1202-39	Pump Efficiency Repl	311000-Pumping Equipmen	10131120	311.2	Y	9/25/2014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
311200		Pump Efficiency Repl	311200-Pump Eqp Electric	10131120	311.2	Y	9/25/2014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
339300		Pump Efficiency Repl	339300-Other P/E-Treatmer	10133930	339.3	Y	9/25/2014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
346190		Pump Efficiency Repl	346190-Remote Control & Ii	10134600	346.5	Y	9/25/2014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
347000		Pump Efficiency Repl	347000-Misc Equipment	10134700	347.5	Y	9/25/2014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

Kentucky American Water
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Workpaper: W/P - 1-4

Excel: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]AFUDC Activity

	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Oct-Dec -12 Activity
AFUDC Rate (Approved Case No.2010-00036 til Jul. 2013 & Proposed Aug. 2013 on):	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	
AFUDC Begin Balance & Activity:	$ 7,767	$ 6,992	$ 10,017	$ 13,332	$ 16,672	$ 24,545	$ 36,575	$ 270,065
Additional Equity Gross Up:	$ 3,003	$ 2,703	$ 3,873	$ 5,155	$ 6,446	$ 9,490	$ 14,141	

JDE Account	FP#	Project Description	JDE / Utility Plant Account	SAP GL Account	NARUC Account	AFUDC?	Mos Til In-Svc In-Service Date	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Oct-Dec -12 Activity
331001	D12-**01-P	Projects Funded by Others	331001-T&D Mains	10133100	331.4	N	2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
335000		Projects Funded by Others	335000-Hydrants	10133500	335.4	N	2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
333000		Projects Funded by Others	333000-Services	10133300	333.4	N	2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
334100		Projects Funded by Others	334100-Meters	10133410	334.4	N	2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
334200		Projects Funded by Others	334200-Meter Installations	10133420	334.4	N	2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	R12-**A1	Mains - New	331001-T&D Mains	10133100	331.4	Y	2	$ 72	$ -	$ 72	$ 144	$ 251	$ 395	$ 610	$ 7,251
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	R12-**B1	Mains - Replaced / Restored	331001-T&D Mains	10133100	331.4	Y	2	$ 609	$ 416	$ 839	$ 1,103	$ 1,706	$ 2,512	$ 2,917	$ 9,879
333000		Mains - Replaced / Restored	333000-Services	10133300	333.4	Y	2	$ 61	$ 42	$ 84	$ 110	$ 171	$ 251	$ 292	$ 922
334100		Mains - Replaced / Restored	334100-Meters	10133410	334.4	Y	2	$ 46	$ 31	$ 63	$ 83	$ 128	$ 188	$ 219	$ 692
335000		Mains - Replaced / Restored	335000-Hydrants	10133500	335.4	Y	2	$ 46	$ 31	$ 63	$ 83	$ 128	$ 188	$ 219	$ 708
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	R12-**C1	Mains - Unscheduled	331001-T&D Mains	10133100	331.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	R12-**D1	Mains - Relocated	331001-T&D Mains	10133100	331.4	Y	2	$ 149	$ -	$ 32	$ 97	$ 162	$ 452	$ 788	$ 2,775
335000		Mains - Relocated	335000-Hydrants	10133500	335.4	Y	2	$ 17	$ -	$ 4	$ 11	$ 18	$ 50	$ 88	$ 308
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
335000	R12-**E1	Hydrants, Valves, and Manholes - New	335000-Hydrants	10133500	335.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001		Hydrants, Valves, and Manholes - New	331001-T&D Mains	10133100	331.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
335000	R12-**F1	Hydrants, Valves, and Manholes - Replac	335000-Hydrants	10133500	335.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001		Hydrants, Valves, and Manholes - Replac	331001-T&D Mains	10133100	331.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
333000	R12-**G1	Services and Laterals - New	333000-Services	10133300	333.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
333000	R12-**H1	Services and Laterals - Replaced	333000-Services	10133300	333.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
334200		Services and Laterals - Replaced	334200-Meter Installations	10133420	334.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
334100	R12-**I1	Meters - New	334100-Meters	10133410	334.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
334100	R12-**J1	Meters - Replaced	334100-Meters	10133410	334.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
334200		Meters - Replaced	334200-Meter Installations	10133420	334.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
334100	R12-**K1	ITS Equipment and Systems	334100-Meters	10133410	334.4	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
346190	R12-**L1	SCADA Equipment and Systems	346190-Remote Control & In	10134600	346.5	Y	6	$ 5,129	$ 2,931	$ 2,198	$ 1,573	$ 840	$ 287	$ 574	$ 13,840
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
304500	R12-**M1	Security Equipment and Systems	304500-Struct & Imp-Genera	10130450	304.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
304500	R12-**N1	Offices and Operations Centers	304500-Struct & Imp-Genera	10130450	304.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
304100		Offices and Operations Centers	304100-Struct & Imp-Supply	10130410	304.2	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
340100		Offices and Operations Centers	340100-Office Furniture & E	10134010	340.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
340300		Offices and Operations Centers	340300-Computer Software	10134010	340.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
346100		Offices and Operations Centers	346100-Comm Equip Non-Te	10134600	346.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
347000		Offices and Operations Centers	347000-Misc Equipment	10134700	347.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
341100	R12-**O1	Vehicles	341100-Trans Equip Lt Duty	10134100	341.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
341200		Vehicles	341200-Trans Equip Hvy Dut	10134100	341.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
341300		Vehicles	341300-Trans Equip Auto Ca	10134100	341.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
343000	R12-**P1	Tools and Equipment	343000-Tools,Shop,Garage E	10134300	343.5	N	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
304300	R12-**Q1	Process Plant Facilities and Equipment	304300-Struct & Imp-Treatn	10130430	304.3	Y	2	$ -	$ -	$ 100	$ 560	$ 874	$ 975	$ 1,072	$ 3,620
306000		Process Plant Facilities and Equipment	306000-Lake, River & Other	10130600	306.2	Y	2	$ -	$ -	$ 38	$ 210	$ 328	$ 366	$ 402	$ 1,367
311000		Process Plant Facilities and Equipment	311000-Pumping Equipmen	10131120	311.2	Y	2	$ -	$ -	$ 63	$ 350	$ 546	$ 609	$ 670	$ 2,357
320100		Process Plant Facilities and Equipment	320100-Wt Equip Non-Medi	10132010	320.3	Y	2	$ -	$ -	$ 25	$ 140	$ 219	$ 244	$ 268	$ 905
330200		Process Plant Facilities and Equipment	330200-Ground Level Tanks	10133000	330.4	Y	2	$ -	$ -	$ 25	$ 140	$ 219	$ 244	$ 268	$ 2,219
344000		Process Plant Facilities and Equipment	344000-Laboratory Equipme	10134400	344.5	Y	2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 46

Kentucky American Water
Case No. 2012-00520
AFUDC Activity by Month, September 2012 - December 2014
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Workpaper: W/P - 1-4

Excel: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]AFUDC Activity

	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Oct-Dec -12 Activity
AFUDC Rate (Approved Case No.2010-00036 til Jul. 2013 & Proposed Aug. 2013 on):	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	
AFUDC Begin Balance & Activity:	$ 7,767	$ 6,992	$ 10,017	$ 13,332	$ 16,672	$ 24,545	$ 36,575	$ 270,065
Additional Equity Gross Up:	$ 3,003	$ 2,703	$ 3,873	$ 5,155	$ 6,446	$ 9,490	$ 14,141	

JDE Account	FP#	Project Description	JDE / Utility Plant Account	SAP GL Account	NARUC Account	AFUDC?	Mos Til In-Svc In-Service Date	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Oct-Dec -12 Activity
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
339600	R12-**S1	Engineering Studies	339600-Other P/E-Cps	10133910	339.1	Y	6	$ 244	$ 183	$ 122	$ 61	$ -	$ -	$ -	$ 8,383
348000		Engineering Studies	348000-Other Tangible Prop	10134800	348.5	Y	6	$ 43	$ 32	$ 22	$ 11	$ (0)	$ (0)	$ (0)	$ 4,521
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
340200	T12-0102-P	Business Transformation 2010 - 2014	340200-Comp & Periph Equi	10134010	340.5	Y	5/1/2013								$ 89,092
340300		Business Transformation 2010 - 2014	340300-Computer Software	10134010	340.5	Y	5/1/2013	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
340315	T12-0103-P	Business Transformation 2010 - 2014	340315-Comp Software Spe	10134010	340.5	N	8/1/2012	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	I12-020001	New WTP On Pool 3 of Kentucky	331001-T&D Mains	10133100	331.4	N	9/20/2010	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
330200	I12-020027	Russell Cave Rd Main Extension	330200-Ground Level Tanks	10133000	330.4	Y	7/15/2012	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,670
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	I12-020009	US 25 Relocation	331001-T&D Mains	10133100	331.4	N	7/30/2012	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
333000		US 25 Relocation	333000-Services	10133300	333.4	N	7/30/2012	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
335000		US 25 Relocation	335000-Hydrants	10133500	335.4	N	7/30/2012	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	I12-020010	Leestown Road	331001-T&D Mains	10133100	331.4	Y	4/15/2013	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 22,294
333000		Leestown Road	333000-Services	10133300	333.4	Y	4/15/2013	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 356
335000		Leestown Road	335000-Hydrants	10133500	335.4	Y	4/15/2013	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 178
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
311000	I12-020025	Pump Efficiency Replacement	311000-Pumping Equipmen	10131120	311.2	Y	4/15/2013	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,476
311200		Pump Efficiency Replacement	311200-Pump Eqp Electric	10131120	311.2	Y	4/15/2013	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,700
339300		Pump Efficiency Replacement	339300-Other P/E-Treatmer	10133930	339.3	Y	4/15/2013	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,328
346190		Pump Efficiency Replacement	346190-Remote Control & Ii	10134600	346.5	Y	4/15/2013	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,239
347000		Pump Efficiency Replacement	347000-Misc Equipment	10134700	347.5	Y	4/15/2013	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,361
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
303500	I12-300003	Northern Division Connection	303500-Land & Land Rights-	10130350	303.4	Y	12/28/2013	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,960
331001		Northern Division Connection	331001-T&D Mains	10133100	331.4	Y	12/28/2013	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 54,318
311540		Northern Division Connection	311540-Pumping Equipmen	10131154	311.4	Y	12/28/2013	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,608
311200		Northern Division Connection	311200-Pump Eqp Electric	10131120	311.2	Y	12/28/2013	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,287
346190		Northern Division Connection	346190-Remote Control & Ii	10134600	346.5	Y	12/28/2013	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 322
330100		Northern Division Connection	330100-Elevated Tanks & St	10133000	330.4	Y	12/28/2013	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 16,082
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	IP-1202-9	Todds and Cleveland Rd Main Extension	331001-T&D Mains	10133100	331.4	Y	11/15/2014	$ 369	$ 740	$ 1,816	$ 2,197	$ 2,211	$ 2,606	$ 4,408	$ -
335000		Todds and Cleveland Rd Main Extension	335000-Hydrants	10133500	335.4	Y	11/15/2014	$ 9	$ 19	$ 47	$ 56	$ 57	$ 67	$ 113	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
304300	IP-1202-10	KRS Clearwell Improvements (332)	304300-Struct & Imp-Treatn	10130430	304.3	Y	6/15/2015	$ 90	$ 217	$ 597	$ 1,700	$ 1,837	$ 2,240	$ 4,085	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	IP-1202-11	I-75 Main Extension	331001-T&D Mains	10133100	331.4	Y	11/15/2014	$ 193	$ 564	$ 761	$ 959	$ 1,205	$ 2,111	$ 3,908	$ -
335000		I-75 Main Extension	335000-Hydrants	10133500	335.4	Y	11/15/2014	$ 5	$ 14	$ 20	$ 25	$ 31	$ 54	$ 100	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	IP-1202-13	Greenwich Rd Main Extension	331001-T&D Mains	10133100	331.4	Y	10/15/2014	$ 193	$ 564	$ 936	$ 942	$ 1,680	$ 3,301	$ 4,932	$ -
335000		Greenwich Rd Main Extension	335000-Hydrants	10133500	335.4	Y	10/15/2014	$ 5	$ 14	$ 24	$ 24	$ 43	$ 85	$ 126	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	IP-1202-16	North Upper St Main Replacement (343)	331001-T&D Mains	10133100	331.4	Y	12/15/2014	$ 174	$ 506	$ 683	$ 687	$ 1,322	$ 2,291	$ 3,520	$ -
333000		North Upper St Main Replacement (343)	333000-Services	10133300	333.4	Y	12/15/2014	$ 20	$ 58	$ 78	$ 79	$ 151	$ 262	$ 402	$ -
335000		North Upper St Main Replacement (343)	335000-Hydrants	10133500	335.4	Y	12/15/2014	$ 5	$ 14	$ 20	$ 20	$ 38	$ 65	$ 101	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
331001	IP-1202-20	KY Major Highway	331001-T&D Mains	10133100	331.4	Y	12/15/2014	$ 174	$ 348	$ 682	$ 1,017	$ 1,024	$ 1,372	$ 2,196	$ -
333000		KY Major Highway	333000-Services	10133300	333.4	Y	12/15/2014	$ 20	$ 40	$ 78	$ 116	$ 117	$ 157	$ 251	$ -
335000		KY Major Highway	335000-Hydrants	10133500	335.4	Y	12/15/2014	$ 5	$ 10	$ 19	$ 29	$ 29	$ 39	$ 63	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
304300	IP-1202-23	RRS Carbon and Pre-Chlorine Feed	304300-Struct & Imp-Treatn	10130430	304.3	Y	9/15/2014	$ 18	$ 36	$ 55	$ 73	$ 73	$ 150	$ 345	$ -
311000		RRS Carbon and Pre-Chlorine Feed	311000-Pumping Equipmen	10131120	311.2	Y	9/15/2014	$ 18	$ 36	$ 55	$ 73	$ 73	$ 150	$ 345	$ -
311200		RRS Carbon and Pre-Chlorine Feed	311200-Pump Eqp Electric	10131120	311.2	Y	9/15/2014	$ 18	$ 36	$ 55	$ 73	$ 73	$ 150	$ 345	$ -
320100		RRS Carbon and Pre-Chlorine Feed	320100-Wt Equip Non-Medi	10132010	320.3	Y	9/15/2014	$ 36	$ 73	$ 109	$ 146	$ 147	$ 299	$ 691	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
334100	IP-1202-27	KRS Hydrotreater Valve & Flow Meter	334100-Meters	10133410	334.4	Y	7/30/2014	$ -	$ 13	$ 82	$ 83	$ 148	$ 345	$ -	$ -

Kentucky American Water
Case No. 2012-00520
AFUDC Activity by Month, September 2012 - December 2014

Automatically calculates: For Projects Deemed AFUDC Eligible, Prior Month CWIP Balance x Annual AFUDC Rate / 12)

Workpaper: W/P - 1-4

Excel: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]AFUDC Activity

	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Oct-Dec -12 Activity
AFUDC Rate (Approved Case No.2010-00036 til Jul. 2013 & Proposed Aug. 2013 on):	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	
AFUDC Begin Balance & Activity:	$ 7,767	$ 6,992	$ 10,017	$ 13,332	$ 16,672	$ 24,545	$ 36,575	$ 270,065
Additional Equity Gross Up:	$ 3,003	$ 2,703	$ 3,873	$ 5,155	$ 6,446	$ 9,490	14,141	

JDE Account	FP#	Project Description	JDE / Utility Plant Account	SAP GL Account	NARUC Account	AFUDC?	Mos Til In-Svc In-Service Date	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Oct-Dec -12 Activity
334200		KRS Hydrotreater Valve & Flow Meter	334200-Meter Installations	10133420	334.4	Y	7/30/2014	$ -	$ 9	$ 59	$ 59	$ 106	$ 246	$ -	$ -
334300		KRS Hydrotreater Valve & Flow Meter	334300-Meter Vaults	10133410	334.4	Y	7/30/2014	$ -	$ 14	$ 94	$ 95	$ 170	$ 394	$ -	$ -
								$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
311000	IP-1202-39	Pump Efficiency Repl	311000-Pumping Equipmen	10131120	311.2	Y	9/25/2014	$ -	$ -	$ -	$ 82	$ 219	$ 560	$ 902	$ -
311200		Pump Efficiency Repl	311200-Pump Eqp Electric	10131120	311.2	Y	9/25/2014	$ -	$ -	$ -	$ 62	$ 164	$ 420	$ 677	$ -
339300		Pump Efficiency Repl	339300-Other P/E-Treatmer	10133930	339.3	Y	9/25/2014	$ -	$ -	$ -	$ 21	$ 55	$ 140	$ 226	$ -
346190		Pump Efficiency Repl	346190-Remote Control & Ir	10134600	346.5	Y	9/25/2014	$ -	$ -	$ -	$ 21	$ 55	$ 140	$ 226	$ -
347000		Pump Efficiency Repl	347000-Misc Equipment	10134700	347.5	Y	9/25/2014	$ -	$ -	$ -	$ 21	$ 55	$ 140	$ 226	$ -

Kentucky American Water
Case No. 2012-00520
AFUDC Activity by Month, September 2012 - December 2014
Automatically calculates: For Projects Deemed AFUDC Eligible, Prior Month CWIP Balance x Annual AFUDC Rate / 12)
Workpaper: W/P - 1-4

Excel: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]AFUDC Activity

	2013 Activity	2014 Activity	Base Per. as of 31-Mar-13	Forecast Aug-13-July 14
AFUDC Rate (Approved Case No.2010-00036 til Jul. 2013 & Proposed Aug. 2013 on):				
AFUDC Begin Balance & Activity:	$ 814,931	$ 349,689		$ 495,896
Additional Equity Gross Up:				

JDE Account	FP#	Project Description	JDE / Utility Plant Account	SAP GL Account	NARUC Account	AFUDC?	Mos Til In-Svc In-Service Date	2013 Activity	2014 Activity	Base Per. as of 31-Mar-13	Forecast Aug-13-Jul 14
331001	D12-**01-P	Projects Funded by Others	331001-T&D Mains	10133100	331.4	N	2	$ -	$ -		$ -
335000		Projects Funded by Others	335000-Hydrants	10133500	335.4	N	2	$ -	$ -		$ -
333000		Projects Funded by Others	333000-Services	10133300	333.4	N	2	$ -	$ -		$ -
334100		Projects Funded by Others	334100-Meters	10133410	334.4	N	2	$ -	$ -		$ -
334200		Projects Funded by Others	334200-Meter Installations	10133420	334.4	N	2	$ -	$ -		$ -
								$ -	$ -		$ -
331001	R12-**A1	Mains - New	331001-T&D Mains	10133100	331.4	Y	2	$ 7,683	$ 3,764		$ 3,560
								$ -	$ -		$ -
331001	R12-**B1	Mains - Replaced / Restored	331001-T&D Mains	10133100	331.4	Y	2	$ 23,553	$ 21,550		$ 22,448
333000		Mains - Replaced / Restored	333000-Services	10133300	333.4	Y	2	$ 2,355	$ 2,155		$ 2,245
334100		Mains - Replaced / Restored	334100-Meters	10133410	334.4	Y	2	$ 1,766	$ 1,616		$ 1,684
335000		Mains - Replaced / Restored	335000-Hydrants	10133500	335.4	Y	2	$ 1,766	$ 1,616		$ 1,684
								$ -	$ -		$ -
331001	R12-**C1	Mains - Unscheduled	331001-T&D Mains	10133100	331.4	N	1	$ -	$ -		$ -
								$ -	$ -		$ -
331001	R12-**D1	Mains - Relocated	331001-T&D Mains	10133100	331.4	Y	2	$ 7,316	$ 6,323		$ 6,474
335000		Mains - Relocated	335000-Hydrants	10133500	335.4	Y	2	$ 813	$ 703		$ 719
								$ -	$ -		$ -
335000	R12-**E1	Hydrants, Valves, and Manholes - New	335000-Hydrants	10133500	335.4	N	1	$ -	$ -		$ -
331001		Hydrants, Valves, and Manholes - New	331001-T&D Mains	10133100	331.4	N	1	$ -	$ -		$ -
								$ -	$ -		$ -
335000	R12-**F1	Hydrants, Valves, and Manholes - Replac	335000-Hydrants	10133500	335.4	N	1	$ -	$ -		$ -
331001		Hydrants, Valves, and Manholes - Replac	331001-T&D Mains	10133100	331.4	N	1	$ -	$ -		$ -
								$ -	$ -		$ -
333000	R12-**G1	Services and Laterals - New	333000-Services	10133300	333.4	N	1	$ -	$ -		$ -
								$ -	$ -		$ -
333000	R12-**H1	Services and Laterals - Replaced	333000-Services	10133300	333.4	N	1	$ -	$ -		$ -
334200		Services and Laterals - Replaced	334200-Meter Installations	10133420	334.4	N	1	$ -	$ -		$ -
								$ -	$ -		$ -
334100	R12-**I1	Meters - New	334100-Meters	10133410	334.4	N	1	$ -	$ -		$ -
								$ -	$ -		$ -
334100	R12-**J1	Meters - Replaced	334100-Meters	10133410	334.4	N	1	$ -	$ -		$ -
334200		Meters - Replaced	334200-Meter Installations	10133420	334.4	N	1	$ -	$ -		$ -
								$ -	$ -		$ -
334100	R12-**K1	ITS Equipment and Systems	334100-Meters	10133410	334.4	N	1	$ -	$ -		$ -
								$ -	$ -		$ -
346190	R12-**L1	SCADA Equipment and Systems	346190-Remote Control & In	10134600	346.5	Y	6	$ 56,865	$ 16,906		$ 35,185
								$ -	$ -		$ -
304500	R12-**M1	Security Equipment and Systems	304500-Struct & Imp-Genera	10130450	304.5	N	1	$ -	$ -		$ -
								$ -	$ -		$ -
304500	R12-**N1	Offices and Operations Centers	304500-Struct & Imp-Genera	10130450	304.5	N	1	$ -	$ -		$ -
304100		Offices and Operations Centers	304100-Struct & Imp-Supply	10130410	304.2	N	1	$ -	$ -		$ -
340100		Offices and Operations Centers	340100-Office Furniture & E	10134010	340.5	N	1	$ -	$ -		$ -
340300		Offices and Operations Centers	340300-Computer Software	10134010	340.5	N	1	$ -	$ -		$ -
346100		Offices and Operations Centers	346100-Comm Equip Non-Te	10134600	346.5	N	1	$ -	$ -		$ -
347000		Offices and Operations Centers	347000-Misc Equipment	10134700	347.5	N	1	$ -	$ -		$ -
								$ -	$ -		$ -
341100	R12-**O1	Vehicles	341100-Trans Equip Lt Duty	10134100	341.5	N	1	$ -	$ -		$ -
341200		Vehicles	341200-Trans Equip Hvy Dut	10134100	341.5	N	1	$ -	$ -		$ -
341300		Vehicles	341300-Trans Equip Auto Ca	10134100	341.5	N	1	$ -	$ -		$ -
								$ -	$ -		$ -
343000	R12-**P1	Tools and Equipment	343000-Tools,Shop,Garage E	10134300	343.5	N	1	$ -	$ -		$ -
								$ -	$ -		$ -
304300	R12-**Q1	Process Plant Facilities and Equipment	304300-Struct & Imp-Treatn	10130430	304.3	Y	2	$ 7,424	$ 7,605		$ 7,067
306000		Process Plant Facilities and Equipment	306000-Lake, River & Other	10130600	306.2	Y	2	$ 2,784	$ 2,852		$ 2,650
311000		Process Plant Facilities and Equipment	311000-Pumping Equipmen	10131120	311.2	Y	2	$ 4,640	$ 4,753		$ 4,417
320100		Process Plant Facilities and Equipment	320100-Wt Equip Non-Medi	10132010	320.3	Y	2	$ 1,856	$ 1,901		$ 1,767
330200		Process Plant Facilities and Equipment	330200-Ground Level Tanks	10133000	330.4	Y	2	$ 1,856	$ 1,901		$ 1,767
344000		Process Plant Facilities and Equipment	344000-Laboratory Equipme	10134400	344.5	Y	2	$ -	$ -		$ -

Kentucky American Water
Case No. 2012-00520
AFUDC Activity by Month, September 2012 - December 2014
Automatically calculates: For Projects Deemed AFUDC Eligible, Prior Month CWIP Balance x Annual AFUDC Rate / 12)
Workpaper: W/P - 1-4

Excel: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]AFUDC Activity

								2013	2014	Base Per. as of	Forecast
							AFUDC Rate (Approved Case No.2010-00036 til Jul. 2013 & Proposed Aug. 2013 on):	Activity	Activity	31-Mar-13	Aug-13-July 14
							AFUDC Begin Balance & Activity:	$ 814,931	$ 349,689		$ 495,896
							Additional Equity Gross Up:				

JDE Account	FP#	Project Description	JDE / Utility Plant Account	SAP GL Account	NARUC Account	AFUDC?	Mos Til In-Svc In-Service Date	2013 Activity	2014 Activity	Base Per. as of 31-Mar-13	Forecast Aug-13-Jul 14
								$ -	$ -		$ -
339600	R12-**S1	Engineering Studies	339600-Other P/E-Cps	10133910	339.1	Y	6	$ 7,293	$ 1,464		$ 1,464
348000		Engineering Studies	348000-Other Tangible Prop	10134800	348.5	Y	6	$ 3,315	$ 258		$ 258
								$ -	$ -		$ -
340200	T12-0102-P	Business Transformation 2010 - 2014	340200-Comp & Periph Equi	10134010	340.5	Y	5/1/2013	$ 146,370	$ -		$ -
340300		Business Transformation 2010 - 2014	340300-Computer Software	10134010	340.5	Y	5/1/2013	$ -	$ -		$ -
								$ -	$ -		$ -
340315	T12-0103-P	Business Transformation 2010 - 2014	340315-Comp Software Spe	10134010	340.5	N	8/1/2012	$ -	$ -		$ -
								$ -	$ -		$ -
331001	I12-020001	New WTP On Pool 3 of Kentucky	331001-T&D Mains	10133100	331.4	N	9/20/2010	$ -	$ -		$ -
								$ -	$ -		$ -
330200	I12-020027	Russell Cave Rd Main Extension	330200-Ground Level Tanks	10133000	330.4	Y	7/15/2012	$ -	$ -		$ -
								$ -	$ -		$ -
331001	I12-020009	US 25 Relocation	331001-T&D Mains	10133100	331.4	N	7/30/2012	$ -	$ -		$ -
333000		US 25 Relocation	333000-Services	10133300	333.4	N	7/30/2012	$ -	$ -		$ -
335000		US 25 Relocation	335000-Hydrants	10133500	335.4	N	7/30/2012	$ -	$ -		$ -
								$ -	$ -		$ -
331001	I12-020010	Leestown Road	331001-T&D Mains	10133100	331.4	Y	4/15/2013	$ 27,697	$ -		$ -
333000		Leestown Road	333000-Services	10133300	333.4	Y	4/15/2013	$ 992	$ -		$ -
335000		Leestown Road	335000-Hydrants	10133500	335.4	Y	4/15/2013	$ 496	$ -		$ -
								$ -	$ -		$ -
311000	I12-020025	Pump Efficiency Replacement	311000-Pumping Equipmen	10131120	311.2	Y	4/15/2013	$ 15,062	$ -		$ -
311200		Pump Efficiency Replacement	311200-Pump Eqp Electric	10131120	311.2	Y	4/15/2013	$ 11,890	$ -		$ -
339300		Pump Efficiency Replacement	339300-Other P/E-Treatmer	10133930	339.3	Y	4/15/2013	$ 3,724	$ -		$ -
346190		Pump Efficiency Replacement	346190-Remote Control & Ir	10134600	346.5	Y	4/15/2013	$ 3,636	$ -		$ -
347000		Pump Efficiency Replacement	347000-Misc Equipment	10134700	347.5	Y	4/15/2013	$ 3,757	$ -		$ -
								$ -	$ -		$ -
303500	I12-300003	Northern Division Connection	303500-Land & Land Rights-	10130350	303.4	Y	12/28/2013	$ 17,526	$ -		$ 8,838
331001		Northern Division Connection	331001-T&D Mains	10133100	331.4	Y	12/28/2013	$ 326,375	$ -		$ 224,872
311540		Northern Division Connection	311540-Pumping Equipmen	10131154	311.4	Y	12/28/2013	$ 10,510	$ -		$ 7,678
311200		Northern Division Connection	311200-Pump Eqp Electric	10131120	311.2	Y	12/28/2013	$ 8,408	$ -		$ 6,143
346190		Northern Division Connection	346190-Remote Control & Ir	10134600	346.5	Y	12/28/2013	$ 2,102	$ -		$ 1,536
330100		Northern Division Connection	330100-Elevated Tanks & St	10133000	330.4	Y	12/28/2013	$ 105,099	$ -		$ 76,785
								$ -	$ -		$ -
331001	IP-1202-9	Todds and Cleveland Rd Main Extension	331001-T&D Mains	10133100	331.4	Y	11/15/2014	$ -	$ 42,763		$ 14,348
335000		Todds and Cleveland Rd Main Extension	335000-Hydrants	10133500	335.4	Y	11/15/2014	$ -	$ 1,096		$ 368
								$ -	$ -		$ -
304300	IP-1202-10	KRS Clearwell Improvements (332)	304300-Struct & Imp-Treatn	10130430	304.3	Y	6/15/2015	$ -	$ 79,119		$ 10,766
								$ -	$ -		$ -
331001	IP-1202-11	I-75 Main Extension	331001-T&D Mains	10133100	331.4	Y	11/15/2014	$ -	$ 34,441		$ 9,700
335000		I-75 Main Extension	335000-Hydrants	10133500	335.4	Y	11/15/2014	$ -	$ 883		$ 249
								$ -	$ -		$ -
331001	IP-1202-13	Greenwich Rd Main Extension	331001-T&D Mains	10133100	331.4	Y	10/15/2014	$ -	$ 26,822		$ 12,549
335000		Greenwich Rd Main Extension	335000-Hydrants	10133500	335.4	Y	10/15/2014	$ -	$ 688		$ 322
								$ -	$ -		$ -
331001	IP-1202-16	North Upper St Main Replacement (343)	331001-T&D Mains	10133100	331.4	Y	12/15/2014	$ -	$ 36,656		$ 9,182
333000		North Upper St Main Replacement (343)	333000-Services	10133300	333.4	Y	12/15/2014	$ -	$ 4,189		$ 1,049
335000		North Upper St Main Replacement (343)	335000-Hydrants	10133500	335.4	Y	12/15/2014	$ -	$ 1,047		$ 262
								$ -	$ -		$ -
331001	IP-1202-20	KY Major Highway	331001-T&D Mains	10133100	331.4	Y	12/15/2014	$ -	$ 26,771		$ 6,813
333000		KY Major Highway	333000-Services	10133300	333.4	Y	12/15/2014	$ -	$ 3,060		$ 779
335000		KY Major Highway	335000-Hydrants	10133500	335.4	Y	12/15/2014	$ -	$ 765		$ 195
								$ -	$ -		$ -
304300	IP-1202-23	RRS Carbon and Pre-Chlorine Feed	304300-Struct & Imp-Treatn	10130430	304.3	Y	9/15/2014	$ -	$ 1,386		$ 750
311000		RRS Carbon and Pre-Chlorine Feed	311000-Pumping Equipmen	10131120	311.2	Y	9/15/2014	$ -	$ 1,386		$ 750
311200		RRS Carbon and Pre-Chlorine Feed	311200-Pump Eqp Electric	10131120	311.2	Y	9/15/2014	$ -	$ 1,386		$ 750
320100		RRS Carbon and Pre-Chlorine Feed	320100-Wt Equip Non-Medi	10132010	320.3	Y	9/15/2014	$ -	$ 2,772		$ 1,501
								$ -	$ -		$ -
334100	IP-1202-27	KRS Hydrotreater Valve & Flow Meter	334100-Meters	10133410	334.4	Y	7/30/2014	$ -	$ 671		$ 671

Kentucky American Water
Case No. 2012-00520
AFUDC Activity by Month, September 2012 - December 2014

Automatically calculates: For Projects Deemed AFUDC Eligible, Prior Month CWIP Balance x Annual AFUDC Rate / 12)

Workpaper: W/P - 1-4

Excel: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]AFUDC Activity

	2013 Activity	2014 Activity	Base Per. as of 31-Mar-13	Forecast Aug-13-July 14
AFUDC Rate (Approved Case No.2010-00036 til Jul. 2013 & Proposed Aug. 2013 on):				
AFUDC Begin Balance & Activity:	$ 814,931	$ 349,689		**$ 495,896**
Additional Equity Gross Up:				

JDE Account	FP#	Project Description	JDE / Utility Plant Account	SAP GL Account	NARUC Account	AFUDC?	Mos Til In-Svc In-Service Date	2013 Activity	2014 Activity	Base Per. as of 31-Mar-13	Forecast Aug-13-Jul 14
334200		KRS Hydrotreater Valve & Flow Meter	334200-Meter Installations	10133420	334.4	Y	7/30/2014	$ -	$ 479		$ 479
334300		KRS Hydrotreater Valve & Flow Meter	334300-Meter Vaults	10133410	334.4	Y	7/30/2014	$ -	$ 767		$ 767
								$ -	$ -		$ -
311000	IP-1202-39	Pump Efficiency Repl	311000-Pumping Equipmen	10131120	311.2	Y	9/25/2014	$ -	$ 2,870		$ 1,763
311200		Pump Efficiency Repl	311200-Pump Eqp Electric	10131120	311.2	Y	9/25/2014	$ -	$ 2,153		$ 1,322
339300		Pump Efficiency Repl	339300-Other P/E-Treatmer	10133930	339.3	Y	9/25/2014	$ -	$ 718		$ 441
346190		Pump Efficiency Repl	346190-Remote Control & I	10134600	346.5	Y	9/25/2014	$ -	$ 718		$ 441
347000		Pump Efficiency Repl	347000-Misc Equipment	10134700	347.5	Y	9/25/2014	$ -	$ 718		$ 441

Kentucky American Water
Case No. 2012-00520
Depreciation Expense Activity (Net of CIAC Amortization) by Month, September 2012 - December 2014
Automatically calculates: (Prior Month UPIS Balance-UPIS Not Depreciating) X (Annual Depreciation Rate/12)
- Monthly Depreciation Adjustment
Workpaper # W/P - 4-1
Excel Referen Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Actv Depr Exp

	Oct-12	Nov-12	Dec-12	Jan-13
Water Depreciation Expense (Line 78)	$ 974,012	$ 978,087	$ 981,344	$ 987,604
Less Water CIAC Depreciation Credit	$ 84,246	$ 84,424	$ 84,602	$ 84,780
Net Depreciation Expense	$ 889,766	$ 893,663	$ 896,743	$ 902,824

Line	Proposed Deprec. Rate	Annual Deprec. Rate	UPIS Not Deprec.	Monthly Deprec. Adjust	Utility	Account	Utility Plant Account	SAP G/L Account	NARUC Acct	UPIS Bal Sep-12 less UPIS Not Depreciating	Oct-12	Nov-12	Dec-12	Jan-13
1		0.00%		$ -	Water	301000-Organization	301000	10130100	301.1	$ 37,450	0.00	0.00	0.00	0.00
2		0.00%		$ -	Water	302000-Franchises	302000	10130200	302.1	$ 70,261	0.00	0.00	0.00	0.00
3		0.00%		$ -	Water	303200-Land & Land Rights-Supply	303200	10130320	303.2	$ 1,077,363	0.00	0.00	0.00	0.00
4		0.00%		$ -	Water	303300-Land & Land Rights-Pumping	303300	10130330	303.2	$ 195,966	0.00	0.00	0.00	0.00
5		0.00%		$ -	Water	303400-Land & Land Rights-Treatment	303400	10130340	303.3	$ 800,183	0.00	0.00	0.00	0.00
6		0.00%		$ -	Water	303500-Land & Land Rights-T&D	303500	10130350	303.4	$ 7,473,931	0.00	0.00	0.00	0.00
7		2.92%	$ -	$ -	Water	304100-Struct & Imp-Supply	304100	10130410	304.2	$ 6,953,802	16,920.92	16,938.70	16,938.25	16,937.80
8		2.37%	$ -	$ -	Water	304200-Struct & Imp-Pumping	304200	10130420	304.2	$ 9,642,371	19,043.68	19,038.81	19,033.94	19,029.08
9		2.46%	$ -	$ -	Water	304300-Struct & Imp-Treatment	304300	10130430	304.3	$ 25,719,554	52,725.08	52,716.01	52,706.93	52,953.09
10		2.50%	$ -	$ -	Water	304400-Struct & Imp-T&D	304400	10130440	304.4	$ 915,117	1,906.49	1,906.49	1,906.49	1,906.49
11		2.82%	$ -	$ -	Water	304500-Struct & Imp-General	304500	10130450	304.5	$ 3,927,194	9,228.91	9,267.02	9,404.63	9,400.05
12		1.91%	$ -	$ -	Water	304600-Struct & Imp-Offices	304600	10130450	304.5	$ 5,749,699	9,151.60	9,151.07	9,150.53	9,149.99
13		0.00%	$ -	$ -	Water	304610-Struct & Imp-HVAC	304610	10130450	304.5	$ 10,570	0.00	0.00	0.00	0.00
14		2.03%	$ -	$ -	Water	304700-Struct & Imp-Store,Shop,Gar	304700	10130450	304.5	$ 1,789,335	3,026.96	3,026.62	3,026.28	3,025.94
15		4.53%	$ -	$ -	Water	304800-Struct & Imp-Misc	304800	10130450	304.5	$ 1,752,103	6,614.19	6,596.23	6,578.27	6,560.31
16		1.33%	$ -	$ -	Water	305000-Collect & Impound Reservoirs	305000	10130500	305.2	$ 992,394	1,099.90	1,099.51	1,099.12	1,098.73
17		2.05%	$ -	$ -	Water	306000-Lake, River & Other Intakes	306000	10130600	306.2	$ 7,162,528	12,235.99	12,235.61	12,237.78	12,317.16
18		2.00%	$ -	$ -	Water	309000-Supply Mains	309000	10130900	309.2	$ 27,882,438	46,470.73	46,470.71	46,470.69	46,470.67
19		2.93%	$ -	$ -	Water	310000-Power Generation Equip	310000	10131000	310.2	$ 3,392,145	8,282.49	8,279.85	8,277.22	8,274.58
20		1.87%	$ -	$ -	Water	311200-Pump Eqp Electric	311200	10131120	311.2	$ 9,650,869	15,039.27	15,031.56	15,046.82	15,160.36
21		1.88%	$ -	$ -	Water	311300-Pump Eqp Diesel	311300	10131130	311.2	$ 704,706	1,104.04	1,103.44	1,102.84	1,102.24
22		1.90%	$ -	$ -	Water	311400-Pump Eqp Hydraulic	311400	10131140	311.2	$ 7,728	12.24	12.24	12.24	12.24
23		0.00%	$ -	$ -	Water	311500-Pump Eqp Other	311500	10131150	311.2	$ -	0.00	0.00	0.00	0.00
24		2.02%	$ -	$ -	Water	311520-Pump Eqp-SOS & Pumping	311520	10131152	311.2	$ 14,815,585	24,939.57	24,932.32	24,925.07	24,917.82
25		2.02%	$ -	$ -	Water	311530-Pump Eqp Wtr Treatment	311530	10131153	311.3	$ -	0.00	0.00	0.00	0.00
26		2.02%	$ -	$ -	Water	311540-Pumping Equipment TD	311540	10131154	311.4	$ 109,092	183.64	180.64	177.64	174.64
27		2.16%	$ -	$ -	Water	320100-WT Equip Non-Media	320100	10132010	320.3	$ 53,685,967	96,634.74	96,580.46	96,526.17	96,527.91
28		24.28%	$ -	$ -	Water	320200-WT Equip Filter Media	320200	10132010	320.3	$ 508,588	10,290.43	10,290.43	10,290.43	10,290.43
29		1.66%	$ -	$ -	Water	330000-Dist Reservoirs & Standpipes	330000	10133000	330.4	$ 1,771,358	2,450.38	2,450.38	2,450.38	2,450.38
30		1.62%	$ -	$ -	Water	330100-Elevated Tanks & Standpipes	330100	10133000	330.4	$ 10,230,642	13,811.37	13,809.63	13,807.89	13,806.14
31		1.38%	$ -	$ -	Water	330200-Ground Level Tanks	330200	10133000	330.4	$ 2,677,265	3,078.86	3,078.86	3,313.11	3,934.43
32		1.68%	$ -	$ -	Water	330400-Clearwell	330400	10133000	330.4	$ 2,581,757	3,614.46	3,614.46	3,614.46	3,614.46
33		1.44%	$ -	$ -	Water	331001-TD Mains Not Classified	331001	10133100	331.4	$ 148,900,369	178,680.44	178,837.32	179,512.92	180,162.49
34		1.44%	$ -	$ -	Water	331100-TD Mains 4in & Less	331100	10133100	331.4	$ 5,575,212	6,690.25	6,690.25	6,690.25	6,690.25
35		1.44%	$ -	$ -	Water	331200-TD Mains 6in to 8in	331200	10133100	331.4	$ 20,849,197	25,019.04	25,018.98	25,018.93	25,018.88
36		1.44%	$ -	$ -	Water	331300-TD Mains 10in to 16in	331300	10133100	331.4	$ 9,097,048	10,916.46	10,916.46	10,916.46	10,916.46
37		1.44%	$ -	$ -	Water	331400-TD Mains 18in & Grtr	331400	10133100	331.4	$ 72,803,762	87,364.51	87,364.48	87,364.44	87,364.40
38		1.50%	$ -	$ -	Water	333000-Services	333000	10133300	333.4	$ 47,271,866	59,089.83	59,314.86	59,584.14	59,818.43
39		2.44%	$ -	$ -	Water	334100-Meters	334100	10133410	334.4	$ 11,080,862	22,531.09	24,072.34	25,241.98	28,580.20
40		2.49%	$ -	$ -	Water	334110-Meters Bronze Case	334110	10133410	334.4	$ 2,275,603	4,721.88	4,721.27	4,720.66	4,720.05
41		2.95%	$ -	$ -	Water	334120-Meters Plastic Case	334120	10133410	334.4	$ 448,304	1,102.08	1,070.52	1,038.96	1,007.40
42		2.64%	$ -	$ -	Water	334130-Meters Other	334130	10133410	334.4	$ 6,522,761	14,350.07	14,289.48	14,228.88	14,168.28
43		2.64%	$ -	$ -	Water	334131-Meter Reading Units	334131	10133410	334.4	$ 314,141	691.11	691.11	691.11	691.11
44		2.53%	$ -	$ -	Water	334200-Meter Installations	334200	10133420	334.4	$ 18,416,593	38,828.32	38,828.44	38,898.91	38,897.68
45		2.48%	$ -	$ -	Water	334300-Meter Vaults	334300	10133410	334.4	$ 504,160	1,041.93	1,041.86	1,041.79	1,041.72
46		1.19%	$ -	$ -	Water	335000-Hydrants	335000	10133500	335.4	$ 13,641,556	13,527.88	13,561.09	13,617.91	13,661.33
47		19.40%	$ -	$ -	Water	339100-Other P/E-Intangible	339100	10133910	339.1	$ 8,375	135.39	135.39	135.39	135.39
48		10.72%	$ -	$ -	Water	339600-Other P/E-CPS	339600	10133910	339.1	$ 306,385	2,737.04	2,737.04	2,737.04	2,737.04
49		5.00%	$ 103,460	$ 621.33	Water	340100-Office Furniture & Equip	340100	10134010	340.5	$ 574,449	1,772.21	2,307.62	2,296.92	2,286.22
50		20.00%	$ 11,522	$ (327.13)	Water	340210-Comp & Periph Mainframe	340210	10134010	340.5	$ 77,462	1,618.16	1,610.86	1,603.56	1,596.26

Kentucky American Water
Case No. 2012-00520
Depreciation Expense Activity (Net of CIAC Amortization) by Month, September 2012 - December 2014
Automatically calculates: (Prior Month UPIS Balance-UPIS Not Depreciating) X (Annual Depreciation Rate/12) - Monthly Depreciation Adjustment
Workpaper # W/P - 4-1
Excel Referen Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Actv Depr Exp

	Oct-12	Nov-12	Dec-12	Jan-13
Water Depreciation Expense (Line 78)	$ 974,012	$ 978,087	$ 981,344	$ 987,604
Less Water CIAC Depreciation Credit	$ 84,246	$ 84,424	$ 84,602	$ 84,780
Net Depreciation Expense	$ 889,766	$ 893,663	$ 896,743	$ 902,824

Line	Proposed Deprec. Rate	Annual Deprec. Rate	UPIS Not Deprec.	Monthly Deprec. Adjust	Utility	Account	Utility Plant Account	SAP G/L Account	NARUC Acct	UPIS Bal Sep-12 less UPIS Not Depreciating	Oct-12	Nov-12	Dec-12	Jan-13
51		20.00%	$ 414,948	$ 11,658.50	Water	340220-Comp & Periph Personal	340220	10134010	340.5	$ 562,380	(2,285.50)	(2,420.40)	(2,555.30)	(2,690.20)
52		20.00%	$ 88,579	$ (1,285.29)	Water	340230-Comp & Periph Other	340230	10134010	340.5	$ 662,596	12,328.56	12,313.23	12,297.89	12,282.56
53		0.00%	$ -	$ -	Water	340240-Comp & Periph Capital Lease	340240	10134010	340.5	$ -	0.00	0.00	0.00	0.00
54		20.00%	$ 3,459,484	$ 8,263.93	Water	340300-Computer Software	340300	10134010	340.5	$ 346,435	(2,490.01)	(2,595.64)	(2,832.84)	(3,070.04)
55		20.00%	$ 400	$ 7,080.67	Water	340320-Comp Software Personal	340320	10134010	340.5	$ 3,081	(7,029.32)	(7,029.32)	(7,029.32)	(7,029.32)
56		20.00%	$ -	$ -	Water	340325-Comp Software Customized	340325	10134010	340.5	$ 700,218	11,670.30	11,670.30	11,670.30	11,670.30
57		20.00%	$ 527,874	$ 1,759.42	Water	340330-Comp Software Other	340330	10134010	340.5	$ 237,207	2,194.04	2,194.04	2,194.04	2,194.04
58		6.67%	$ 4,285	$ 252.90	Water	340500-Other Office Equipment	340500	10134010	340.5	$ 69,553	133.70	130.87	128.04	125.20
59		1.91%	$ -	$ -	Water	341100-Trans Equip Lt Duty Trks	341100	10134100	341.5	$ 2,119,633	3,373.75	3,387.82	3,363.61	3,360.41
60		2.75%	$ -	$ -	Water	341200-Trans Equip Hvy Duty Trks	341200	10134100	341.5	$ 1,737,108	3,980.87	4,046.62	4,056.77	4,097.18
61		10.00%	$ 96,396	$ -	Water	341300-Trans Equip Autos	341300	10134100	341.5	$ 31,569	263.08	531.83	593.68	768.86
62		5.51%	$ -	$ -	Water	341400-Trans Equip Other	341400	10134100	341.5	$ 602,305	2,765.58	2,759.59	2,753.60	2,747.61
63		4.00%	$ 2,268	$ 37.70	Water	342000-Stores Equipment	342000	10134200	342.5	$ 35,841	81.77	81.64	81.51	81.39
64		5.00%	$ 167,786	$ 1,699.33	Water	343000-Tools,Shop,Garage Equip	343000	10134300	343.5	$ 1,978,150	6,542.96	6,564.86	6,809.52	7,179.17
65		6.67%	$ 121,286	$ 2,098.00	Water	344000-Laboratory Equipment	344000	10134400	344.5	$ 1,179,110	4,455.89	4,441.19	4,466.28	4,451.58
66		2.52%	$ -	$ -	Water	345000-Power Operated Equipment	345000	10134500	345.5	$ 1,465,286	3,077.10	3,073.97	3,070.84	3,067.71
67		6.67%	$ 189,097	$ (7,397.33)	Water	346100-Comm Equip Non-Telephone	346100	10134600	346.5	$ 1,594,567	16,260.46	16,754.94	16,729.89	16,704.85
68		6.67%	$ -	$ (12.57)	Water	346190-Remote Control & Instrument	346190	10134600	346.5	$ 1,528,986	8,511.18	8,511.18	8,511.18	8,511.18
69		6.67%	$ -	$ (176.00)	Water	346200-Comm Equip Telephone	346200	10134600	346.5	$ 283,749	1,753.17	1,753.17	1,753.17	1,753.17
70		5.00%	$ 87,357	$ (766.67)	Water	347000-Misc Equipment	347000	10134700	347.5	$ 1,196,305	5,751.28	5,799.23	5,795.79	5,792.36
71		5.00%	$ -	$ 3,274.67	Water	348000-Other Tangible Property	348000	10134800	348.5	$ 138,485	(2,697.65)	(2,697.65)	(2,697.65)	(2,697.65)
72		5.00%	$ -	$ -	Water	354200-WW Struct & Imp Collection	354200	10135420	354.2	$ -	0.00	0.00	0.00	0.00
73	10.00%	20.00%	$ -	$ -	Water	340315-Comp Software Specia	340315	10134010	C3405	$ 4,601,216	76,686.93	77,795.35	78,745.90	79,694.86
74		0.00%	$ -	$ -	Water	339300-Other P/E-Treatment	339300	10133930	C3393	$ -	0.00	0.00	0.00	0.00
75							**Water Life Rate Depreciation Expense**				**$ 974,012**	**$ 978,087**	**$ 981,344**	**$ 987,604**

Kentucky American Water
Case No. 2012-00520
Depreciation Expense Activity (Net of CIAC Amortization) by Month, September 2012 - December 2014
Automatically calculates: (Prior Month UPIS Balance-UPIS Not Depreciating) X (Annual Depreciation Rate/12) - Monthly Depreciation Adjustment
Workpaper # W/P - 4-1
Excel Referen Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Actv Depr Exp

	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13
	$ 989,604	$ 994,705	$ 1,001,774	$ 1,009,741	$ 1,108,533	$ 1,114,867	$ 1,027,655	$ 1,030,094
	$ 84,907	$ 86,585	$ 86,713	$ 86,891	$ 87,063	$ 87,247	$ 87,385	$ 87,552
	$ 904,696	$ 908,120	$ 915,061	$ 922,850	$ 1,021,470	$ 1,027,620	$ 940,269	$ 942,542

Line	Proposed Deprec. Rate	Annual Deprec. Rate	UPIS Not Deprec.	Monthly Deprec. Adjust	Utility	Account	Utility Plant Account	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13
1		0.00%		$ -	Water	301000-Organization	301000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2		0.00%		$ -	Water	302000-Franchises	302000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3		0.00%		$ -	Water	303200-Land & Land Rights-Supply	303200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4		0.00%		$ -	Water	303300-Land & Land Rights-Pumping	303300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5		0.00%		$ -	Water	303400-Land & Land Rights-Treatment	303400	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6		0.00%		$ -	Water	303500-Land & Land Rights-T&D	303500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7		2.92%	$ -	$ -	Water	304100-Struct & Imp-Supply	304100	16,937.36	16,936.91	16,936.47	16,936.02	16,935.58	16,935.13	16,934.68	16,934.24
8		2.37%	$ -	$ -	Water	304200-Struct & Imp-Pumping	304200	19,024.21	19,019.34	19,014.47	19,009.60	19,004.73	18,999.86	18,994.99	18,990.12
9		2.46%	$ -	$ -	Water	304300-Struct & Imp-Treatment	304300	53,162.34	53,356.62	53,347.54	53,338.47	53,363.42	53,511.57	53,545.57	53,751.15
10		2.50%	$ -	$ -	Water	304400-Struct & Imp-T&D	304400	1,906.49	1,906.49	1,906.49	1,906.49	1,906.49	1,906.49	1,906.49	1,906.49
11		2.82%	$ -	$ -	Water	304500-Struct & Imp-General	304500	9,400.05	9,400.05	9,400.05	9,400.05	9,449.43	9,498.80	9,609.89	9,671.61
12		1.91%	$ -	$ -	Water	304600-Struct & Imp-Offices	304600	9,149.46	9,148.92	9,148.38	9,147.84	9,147.31	9,146.77	9,146.23	9,145.70
13		0.00%	$ -	$ -	Water	304610-Struct & Imp-HVAC	304610	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14		2.03%	$ -	$ -	Water	304700-Struct & Imp-Store,Shop,Gar	304700	3,025.60	3,025.26	3,024.92	3,024.58	3,024.24	3,023.90	3,023.56	3,023.22
15		4.53%	$ -	$ -	Water	304800-Struct & Imp-Misc	304800	6,542.35	6,524.39	6,506.43	6,488.48	6,470.52	6,452.56	6,434.60	6,416.64
16		1.33%	$ -	$ -	Water	305000-Collect & Impound Reservoirs	305000	1,098.34	1,097.95	1,097.56	1,097.17	1,096.78	1,096.39	1,096.00	1,095.61
17		2.05%	$ -	$ -	Water	306000-Lake, River & Other Intakes	306000	12,385.01	12,448.18	12,447.80	12,447.42	12,457.68	12,506.43	12,519.51	12,586.22
18		2.00%	$ -	$ -	Water	309000-Supply Mains	309000	46,470.65	46,470.63	46,470.61	46,470.60	46,470.58	46,470.56	46,470.54	46,470.52
19		2.93%	$ -	$ -	Water	310000-Power Generation Equip	310000	8,271.94	8,269.31	8,266.67	8,264.04	8,261.40	8,258.77	8,256.13	8,253.49
20		1.87%	$ -	$ -	Water	311200-Pump Eqp Electric	311200	15,256.37	15,345.27	15,337.56	17,642.24	17,705.23	17,908.57	18,057.67	18,179.21
21		1.88%	$ -	$ -	Water	311300-Pump Eqp Diesel	311300	1,101.64	1,101.04	1,100.44	1,099.85	1,099.25	1,098.65	1,098.05	1,097.45
22		1.90%	$ -	$ -	Water	311400-Pump Eqp Hydraulic	311400	12.24	12.24	12.24	12.24	12.24	12.24	12.24	12.24
23		0.00%	$ -	$ -	Water	311500-Pump Eqp Other	311500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24		2.02%	$ -	$ -	Water	311520-Pump Eqp-SOS & Pumping	311520	24,910.58	24,903.33	24,896.08	24,888.83	24,881.58	24,874.33	24,867.09	24,859.84
25		2.02%	$ -	$ -	Water	311530-Pump Eqp Wtr Treatment	311530	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26		2.02%	$ -	$ -	Water	311540-Pumping Equipment TD	311540	171.64	168.64	165.65	162.65	159.65	156.65	153.65	150.65
27		2.16%	$ -	$ -	Water	320100-WT Equip Non-Media	320100	96,521.55	96,511.91	96,457.62	96,403.34	96,356.52	96,336.75	96,291.92	96,284.75
28		24.28%	$ -	$ -	Water	320200-WT Equip Filter Media	320200	10,290.43	10,290.43	10,290.43	10,290.43	10,290.43	10,290.43	10,290.43	10,290.43
29		1.66%	$ -	$ -	Water	330000-Dist Reservoirs & Standpipes	330000	2,450.38	2,450.38	2,450.38	2,450.38	2,450.38	2,450.38	2,450.38	2,450.38
30		1.62%	$ -	$ -	Water	330100-Elevated Tanks & Standpipes	330100	13,804.40	13,802.66	13,800.92	13,799.18	13,797.44	13,795.70	13,793.96	13,792.22
31		1.38%	$ -	$ -	Water	330200-Ground Level Tanks	330200	3,965.05	3,993.57	3,993.57	3,993.57	3,998.34	4,020.39	4,026.43	4,056.53
32		1.68%	$ -	$ -	Water	330400-Clearwell	330400	3,614.46	3,614.46	3,614.46	3,614.46	3,614.46	3,614.46	3,614.46	3,614.46
33		1.44%	$ -	$ -	Water	331001-TD Mains Not Classified	331001	180,940.80	182,783.91	182,934.05	185,107.26	185,432.76	185,768.70	186,214.99	186,791.75
34		1.44%	$ -	$ -	Water	331100-TD Mains 4in & Less	331100	6,690.25	6,690.25	6,690.25	6,690.25	6,690.25	6,690.24	6,690.24	6,690.24
35		1.44%	$ -	$ -	Water	331200-TD Mains 6in to 8in	331200	25,018.83	25,018.78	25,018.73	25,018.67	25,018.62	25,018.57	25,018.52	25,018.47
36		1.44%	$ -	$ -	Water	331300-TD Mains 10in to 16in	331300	10,916.46	10,916.46	10,916.46	10,916.46	10,916.46	10,916.46	10,916.46	10,916.46
37		1.44%	$ -	$ -	Water	331400-TD Mains 18in & Grtr	331400	87,364.36	87,364.32	87,364.29	87,364.25	87,364.21	87,364.17	87,364.14	87,364.10
38		1.50%	$ -	$ -	Water	333000-Services	333000	59,990.39	60,217.19	60,424.04	60,727.84	60,962.35	61,195.38	61,435.13	61,680.17
39		2.44%	$ -	$ -	Water	334100-Meters	334100	28,625.05	29,307.37	29,501.08	30,694.06	32,071.84	33,192.00	33,804.09	34,057.76
40		2.49%	$ -	$ -	Water	334110-Meters Bronze Case	334110	4,719.44	4,718.83	4,718.22	4,717.61	4,717.00	4,716.39	4,715.78	4,715.17
41		2.95%	$ -	$ -	Water	334120-Meters Plastic Case	334120	975.84	944.28	912.72	881.16	849.59	818.03	786.47	754.91
42		2.64%	$ -	$ -	Water	334130-Meters Other	334130	14,107.68	14,047.08	13,986.49	13,925.89	13,865.29	13,804.69	13,744.09	13,683.49
43		2.64%	$ -	$ -	Water	334131-Meter Reading Units	334131	691.11	691.11	691.11	691.11	691.11	691.11	691.11	691.11
44		2.53%	$ -	$ -	Water	334200-Meter Installations	334200	38,896.44	38,895.20	38,893.96	38,892.72	38,891.49	38,890.25	38,889.01	38,887.77
45		2.48%	$ -	$ -	Water	334300-Meter Vaults	334300	1,041.65	1,041.58	1,041.51	1,041.44	1,041.37	1,041.30	1,041.23	1,041.16
46		1.19%	$ -	$ -	Water	335000-Hydrants	335000	13,715.90	13,803.83	13,838.12	13,913.46	13,960.71	14,011.99	14,073.85	14,141.88
47		19.40%	$ -	$ -	Water	339100-Other P/E-Intangible	339100	135.39	135.39	135.39	135.39	135.39	135.39	135.39	135.39
48		10.72%	$ -	$ -	Water	339600-Other P/E-CPS	339600	2,737.04	2,737.04	6,312.84	6,460.01	6,607.18	6,754.35	6,754.35	6,754.35
49		5.00%	$ 103,460	$ 621.33	Water	340100-Office Furniture & Equip	340100	2,275.52	2,264.82	2,254.12	2,243.42	2,232.72	2,222.03	2,211.33	2,200.63
50		20.00%	$ 11,522	$ (327.13)	Water	340210-Comp & Periph Mainframe	340210	1,588.95	1,581.65	1,574.35	1,567.05	1,559.74	1,552.44	1,545.14	1,537.84

Kentucky American Water
Case No. 2012-00520
Depreciation Expense Activity (Net of CIAC Amortization) by Month, September 2012 - December 2014
Automatically calculates: (Prior Month UPIS Balance-UPIS Not Depreciating) X (Annual Depreciation Rate/12)
- Monthly Depreciation Adjustment
Workpaper # W/P - 4-1
Excel Referen Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Actv Depr Exp

Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13
$ 989,604	$ 994,705	$ 1,001,774	$ 1,009,741	$ 1,108,533	$ 1,114,867	$ 1,027,655	$ 1,030,094
$ 84,907	$ 86,585	$ 86,713	$ 86,891	$ 87,063	$ 87,247	$ 87,385	$ 87,552
$ 904,696	$ 908,120	$ 915,061	$ 922,850	$ 1,021,470	$ 1,027,620	$ 940,269	$ 942,542

Line	Proposed Deprec. Rate	Annual Deprec. Rate	UPIS Not Deprec.	Monthly Deprec. Adjust	Utility	Account	Utility Plant Account	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13
51		20.00%	$ 414,948	$ 11,658.50	Water	340220-Comp & Periph Personal	340220	(2,825.10)	(2,960.00)	(3,094.90)	(3,229.80)	(3,364.70)	(3,499.60)	(3,634.50)	(3,769.40)
52		20.00%	$ 88,579	$ (1,285.29)	Water	340230-Comp & Periph Other	340230	12,267.23	12,251.89	12,236.56	12,221.23	12,205.89	12,190.56	12,175.23	12,159.89
53		0.00%	$ -	$ -	Water	340240-Comp & Periph Capital Lease	340240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
54		20.00%	$ 3,459,484	$ 8,263.93	Water	340300-Computer Software	340300	(3,307.24)	(3,544.44)	(3,781.65)	(4,018.85)	(4,256.05)	(4,493.25)	(4,730.45)	(4,967.65)
55		20.00%	$ 400	$ 7,080.67	Water	340320-Comp Software Personal	340320	(7,029.32)	(7,029.32)	(7,029.32)	(7,029.32)	(7,029.32)	(7,029.32)	(7,029.32)	(7,029.32)
56		20.00%	$ -	$ -	Water	340325-Comp Software Customized	340325	11,670.30	11,670.30	11,670.30	11,670.30	11,670.30	11,670.30	11,670.30	11,670.30
57		20.00%	$ 527,874	$ 1,759.42	Water	340330-Comp Software Other	340330	2,194.04	2,194.04	2,194.04	2,194.04	2,194.04	2,194.04	2,194.04	2,194.04
58		6.67%	$ 4,285	$ 252.90	Water	340500-Other Office Equipment	340500	122.37	119.54	116.71	113.88	111.04	108.21	105.38	102.55
59		1.91%	$ -	$ -	Water	341100-Trans Equip Lt Duty Trks	341100	3,320.09	3,279.77	3,239.45	3,199.13	3,186.40	3,146.08	3,279.57	3,239.25
60		2.75%	$ -	$ -	Water	341200-Trans Equip Hvy Duty Trks	341200	4,084.14	4,071.11	4,058.07	4,045.04	4,071.72	4,058.69	4,295.90	4,282.86
61		10.00%	$ 96,396	$ -	Water	341300-Trans Equip Autos	341300	743.81	718.77	693.72	668.67	792.44	767.39	1,679.91	1,654.87
62		5.51%	$ -	$ -	Water	341400-Trans Equip Other	341400	2,741.62	2,735.63	2,729.64	2,723.65	2,717.66	2,711.66	2,705.67	2,699.68
63		4.00%	$ 2,268	$ 37.70	Water	342000-Stores Equipment	342000	81.26	81.13	81.00	80.87	80.75	80.62	80.49	80.36
64		5.00%	$ 167,786	$ 1,699.33	Water	343000-Tools,Shop,Garage Equip	343000	7,177.45	7,219.50	7,274.69	7,469.94	7,949.71	7,991.76	8,011.93	8,447.92
65		6.67%	$ 121,286	$ 2,098.00	Water	344000-Laboratory Equipment	344000	4,436.88	4,422.19	4,407.49	4,392.79	4,378.10	4,363.40	4,348.71	4,334.01
66		2.52%	$ -	$ -	Water	345000-Power Operated Equipment	345000	3,064.58	3,061.45	3,058.32	3,055.19	3,052.06	3,048.93	3,045.80	3,042.67
67		6.67%	$ 189,097	$ (7,397.33)	Water	346100-Comm Equip Non-Telephone	346100	16,679.80	16,654.75	16,629.71	16,604.66	16,579.61	16,554.57	16,529.52	16,504.47
68		6.67%	$ -	$ (12.57)	Water	346190-Remote Control & Instrument	346190	8,511.18	8,511.18	11,066.49	12,409.02	12,896.23	15,629.97	15,699.45	15,713.35
69		6.67%	$ -	$ (176.00)	Water	346200-Comm Equip Telephone	346200	1,753.17	1,753.17	1,753.17	1,753.17	1,753.17	1,753.17	1,753.17	1,753.17
70		5.00%	$ 87,357	$ (766.67)	Water	347000-Misc Equipment	347000	5,788.93	5,785.50	5,782.07	6,641.87	6,659.27	6,707.92	6,756.57	6,763.55
71		5.00%	$ -	$ 3,274.67	Water	348000-Other Tangible Property	348000	(2,697.65)	(2,697.65)	(1,748.40)	(1,736.29)	(1,724.18)	(1,712.06)	(1,712.06)	(1,712.06)
72		5.00%	$ -	$ -	Water	354200-WW Struct & Imp Collection	354200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73	10.00%	20.00%	$ -	$ -	Water	340315-Comp Software Specia	340315	80,922.60	83,449.43	83,542.55	83,635.68	179,647.11	181,474.54	91,803.63	92,834.03
74		0.00%	$ -	$ -	Water	339300-Other P/E-Treatment	339300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75							**Water**	**$ 989,604**	**$ 994,705**	**$ 1,001,774**	**$ 1,009,741**	**$ 1,108,533**	**$ 1,114,867**	**$ 1,027,655**	**$ 1,030,094**

Kentucky American Water
Case No. 2012-00520
Depreciation Expense Activity (Net of CIAC Amortization) by Month, September 2012 - December 2014
Automatically calculates: (Prior Month UPIS Balance-UPIS Not Depreciating) X (Annual Depreciation Rate/12) - Monthly Depreciation Adjustment
Workpaper # W/P - 4-1
Excel Referen Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Actv Depr Exp

Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14
$ 1,033,745	$ 1,035,502	$ 1,037,430	$ 1,056,515	$ 1,057,055	$ 1,059,705	$ 1,062,600	$ 1,058,184
$ 87,719	$ 87,886	$ 88,174	$ 88,297	$ 88,425	$ 88,547	$ 88,675	$ 88,852
$ 946,027	$ 947,617	$ 949,256	$ 968,218	$ 968,631	$ 971,159	$ 973,926	$ 969,332

Line	Proposed Deprec. Rate	Annual Deprec. Rate	UPIS Not Deprec.	Monthly Deprec. Adjust	Utility	Account	Utility Plant Account	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14
1		0.00%		$ -	Water	301000-Organization	301000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2		0.00%		$ -	Water	302000-Franchises	302000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3		0.00%		$ -	Water	303200-Land & Land Rights-Supply	303200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4		0.00%		$ -	Water	303300-Land & Land Rights-Pumping	303300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5		0.00%		$ -	Water	303400-Land & Land Rights-Treatment	303400	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6		0.00%		$ -	Water	303500-Land & Land Rights-T&D	303500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7		2.92%	$ -	$ -	Water	304100-Struct & Imp-Supply	304100	16,933.79	16,933.35	16,932.90	16,932.46	16,932.01	16,931.57	16,931.12	16,930.67
8		2.37%	$ -	$ -	Water	304200-Struct & Imp-Pumping	304200	18,985.25	18,980.38	18,975.51	18,970.65	18,965.78	18,960.91	18,956.04	18,951.17
9		2.46%	$ -	$ -	Water	304300-Struct & Imp-Treatment	304300	53,892.82	53,986.42	54,157.54	54,295.73	54,303.88	54,294.80	54,285.73	54,276.65
10		2.50%	$ -	$ -	Water	304400-Struct & Imp-T&D	304400	1,906.49	1,906.49	1,906.49	1,906.49	1,906.49	1,906.49	1,906.49	1,865.60
11		2.82%	$ -	$ -	Water	304500-Struct & Imp-General	304500	9,795.04	9,967.85	10,078.94	10,140.65	10,140.65	10,140.65	10,140.65	10,140.65
12		1.91%	$ -	$ -	Water	304600-Struct & Imp-Offices	304600	9,145.16	9,144.62	9,144.08	9,143.55	9,143.01	9,142.47	9,141.94	9,141.40
13		0.00%	$ -	$ -	Water	304610-Struct & Imp-HVAC	304610	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14		2.03%	$ -	$ -	Water	304700-Struct & Imp-Store,Shop,Gar	304700	3,022.88	3,022.54	3,022.20	3,021.87	3,021.53	3,021.19	3,020.85	3,020.51
15		4.53%	$ -	$ -	Water	304800-Struct & Imp-Misc	304800	6,398.68	6,380.72	6,362.76	6,344.80	6,326.85	6,308.89	6,290.93	5,985.94
16		1.33%	$ -	$ -	Water	305000-Collect & Impound Reservoirs	305000	1,095.21	1,094.82	1,094.43	1,094.04	1,093.65	1,093.26	1,092.87	1,092.48
17		2.05%	$ -	$ -	Water	306000-Lake, River & Other Intakes	306000	12,632.95	12,664.65	12,720.58	12,766.23	12,771.23	12,770.85	12,770.48	12,770.10
18		2.00%	$ -	$ -	Water	309000-Supply Mains	309000	46,470.50	46,470.48	46,470.46	46,470.44	46,470.42	46,470.40	46,470.39	46,470.37
19		2.93%	$ -	$ -	Water	310000-Power Generation Equip	310000	8,250.86	8,248.22	8,245.59	8,242.95	8,240.32	8,237.68	8,235.04	8,232.41
20		1.87%	$ -	$ -	Water	311200-Pump Eqp Electric	311200	18,243.12	18,284.18	18,362.07	18,855.73	18,857.01	18,849.77	18,842.05	18,834.34
21		1.88%	$ -	$ -	Water	311300-Pump Eqp Diesel	311300	1,096.85	1,096.25	1,095.65	1,095.05	1,094.45	1,093.85	1,093.25	1,092.65
22		1.90%	$ -	$ -	Water	311400-Pump Eqp Hydraulic	311400	12.24	12.24	12.24	12.24	12.24	12.24	12.24	12.24
23		0.00%	$ -	$ -	Water	311500-Pump Eqp Other	311500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24		2.02%	$ -	$ -	Water	311520-Pump Eqp-SOS & Pumping	311520	24,852.59	24,845.34	24,838.09	24,830.85	24,823.60	24,816.35	24,809.10	24,764.67
25		2.02%	$ -	$ -	Water	311530-Pump Eqp Wtr Treatment	311530	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26		2.02%	$ -	$ -	Water	311540-Pumping Equipment TD	311540	147.65	144.65	141.65	721.17	719.26	716.90	713.90	710.90
27		2.16%	$ -	$ -	Water	320100-WT Equip Non-Media	320100	96,263.56	96,231.81	96,217.08	96,195.12	96,144.62	96,090.34	96,036.05	91,267.30
28		24.28%	$ -	$ -	Water	320200-WT Equip Filter Media	320200	10,290.43	10,290.43	10,290.43	10,290.43	10,290.43	10,290.43	10,290.43	10,290.43
29		1.66%	$ -	$ -	Water	330000-Dist Reservoirs & Standpipes	330000	2,450.38	2,450.38	2,450.38	2,450.38	2,450.38	2,450.38	2,450.38	2,450.38
30		1.62%	$ -	$ -	Water	330100-Elevated Tanks & Standpipes	330100	13,790.47	13,788.73	13,786.99	18,456.89	18,463.89	18,467.27	18,465.53	17,685.48
31		1.38%	$ -	$ -	Water	330200-Ground Level Tanks	330200	4,077.67	4,092.07	4,117.34	4,138.00	4,140.41	4,140.41	4,140.41	4,140.41
32		1.68%	$ -	$ -	Water	330400-Clearwell	330400	3,614.46	3,614.46	3,614.46	3,614.46	3,614.46	3,614.46	3,614.46	3,614.46
33		1.44%	$ -	$ -	Water	331001-TD Mains Not Classified	331001	187,455.76	188,160.61	188,808.73	201,384.76	201,912.81	202,271.76	202,435.14	202,662.14
34		1.44%	$ -	$ -	Water	331100-TD Mains 4in & Less	331100	6,690.24	6,690.24	6,690.24	6,690.24	6,690.24	6,690.23	6,690.23	6,690.23
35		1.44%	$ -	$ -	Water	331200-TD Mains 6in to 8in	331200	25,018.41	25,018.36	25,018.31	25,018.26	25,018.21	25,018.16	25,018.10	25,018.05
36		1.44%	$ -	$ -	Water	331300-TD Mains 10in to 16in	331300	10,916.46	10,916.46	10,916.46	10,916.46	10,916.46	10,916.46	10,916.46	10,916.46
37		1.44%	$ -	$ -	Water	331400-TD Mains 18in & Grtr	331400	87,364.06	87,364.02	87,363.98	87,363.95	87,363.91	87,363.87	87,363.83	87,363.79
38		1.50%	$ -	$ -	Water	333000-Services	333000	61,892.69	62,103.27	62,271.04	62,441.91	62,603.04	62,781.69	62,991.70	63,231.16
39		2.44%	$ -	$ -	Water	334100-Meters	334100	34,290.65	34,384.36	34,468.68	34,518.17	34,549.80	35,173.37	35,414.44	36,407.08
40		2.49%	$ -	$ -	Water	334110-Meters Bronze Case	334110	4,714.57	4,713.96	4,713.35	4,712.74	4,712.13	4,711.52	4,710.91	4,710.30
41		2.95%	$ -	$ -	Water	334120-Meters Plastic Case	334120	723.35	691.79	660.23	628.67	597.11	565.55	533.99	502.43
42		2.64%	$ -	$ -	Water	334130-Meters Other	334130	13,622.90	13,562.30	13,501.70	13,441.10	13,380.50	13,319.90	13,259.31	13,198.71
43		2.64%	$ -	$ -	Water	334131-Meter Reading Units	334131	691.11	691.11	691.11	691.11	691.11	691.11	691.11	691.11
44		2.53%	$ -	$ -	Water	334200-Meter Installations	334200	38,886.53	38,885.30	38,884.06	38,882.82	38,881.58	38,880.34	38,879.10	38,877.87
45		2.48%	$ -	$ -	Water	334300-Meter Vaults	334300	1,041.09	1,041.02	1,040.95	1,040.89	1,040.82	1,040.75	1,040.68	1,040.61
46		1.19%	$ -	$ -	Water	335000-Hydrants	335000	14,213.08	14,305.58	14,359.91	14,410.62	14,458.84	14,497.37	14,538.42	14,578.12
47		19.40%	$ -	$ -	Water	339100-Other P/E-Intangible	339100	135.39	135.39	135.39	135.39	135.39	135.39	135.39	135.39
48		10.72%	$ -	$ -	Water	339600-Other P/E-CPS	339600	6,754.35	6,754.35	6,754.35	6,754.35	6,754.35	6,834.11	6,913.88	6,993.65
49		5.00%	$ 103,460	$ 621.33	Water	340100-Office Furniture & Equip	340100	2,189.93	2,179.23	2,168.53	2,157.83	2,147.13	2,136.43	2,125.73	2,115.04
50		20.00%	$ 11,522	$ (327.13)	Water	340210-Comp & Periph Mainframe	340210	1,530.53	1,523.23	1,515.93	1,508.63	1,501.32	1,494.02	1,486.72	1,479.42

Kentucky American Water
Case No. 2012-00520
Depreciation Expense Activity (Net of CIAC Amortization) by Month, September 2012 - December 2014
Automatically calculates: (Prior Month UPIS Balance-UPIS Not Depreciating) X (Annual Depreciation Rate/12) - Monthly Depreciation Adjustment
Workpaper # W/P - 4-1
Excel Referen Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Actv Depr Exp

	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14
	$ 1,033,745	$ 1,035,502	$ 1,037,430	$ 1,056,515	$ 1,057,055	$ 1,059,705	$ 1,062,600	$ 1,058,184
	$ 87,719	$ 87,886	$ 88,174	$ 88,297	$ 88,425	$ 88,547	$ 88,675	$ 88,852
	$ 946,027	$ 947,617	$ 949,256	$ 968,218	$ 968,631	$ 971,159	$ 973,926	$ 969,332

Line	Proposed Deprec. Rate	Annual Deprec. Rate	UPIS Not Deprec.	Monthly Deprec. Adjust	Utility	Account	Utility Plant Account	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14
51		20.00%	$ 414,948	$ 11,658.50	Water	340220-Comp & Periph Personal	340220	(3,904.29)	(4,039.19)	(4,174.09)	(4,308.99)	(4,443.89)	(4,578.79)	(4,713.69)	(4,848.59)
52		20.00%	$ 88,579	$ (1,285.29)	Water	340230-Comp & Periph Other	340230	12,144.56	12,129.23	12,113.89	12,098.56	12,083.23	12,067.89	12,052.56	12,037.23
53		0.00%	$ -	$ -	Water	340240-Comp & Periph Capital Lease	340240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
54		20.00%	$ 3,459,484	$ 8,263.93	Water	340300-Computer Software	340300	(5,204.86)	(5,442.06)	(5,679.26)	(5,916.46)	(6,153.66)	(6,390.86)	(6,628.07)	(6,865.27)
55		20.00%	$ 400	$ 7,080.67	Water	340320-Comp Software Personal	340320	(7,029.32)	(7,029.32)	(7,029.32)	(7,029.32)	(7,029.32)	(7,029.32)	(7,029.32)	(7,029.32)
56		20.00%	$ -	$ -	Water	340325-Comp Software Customized	340325	11,670.30	11,670.30	11,670.30	11,670.30	11,670.30	11,670.30	11,670.30	11,670.30
57		20.00%	$ 527,874	$ 1,759.42	Water	340330-Comp Software Other	340330	2,194.04	2,194.04	2,194.04	2,194.04	2,194.04	2,194.04	2,194.04	2,194.04
58		6.67%	$ 4,285	$ 252.90	Water	340500-Other Office Equipment	340500	99.72	96.88	94.05	91.22	88.39	85.56	82.72	79.89
59		1.91%	$ -	$ -	Water	341100-Trans Equip Lt Duty Trks	341100	3,198.93	3,158.61	3,201.05	3,160.73	3,120.41	3,080.09	3,039.77	2,999.45
60		2.75%	$ -	$ -	Water	341200-Trans Equip Hvy Duty Trks	341200	4,269.83	4,256.79	4,362.92	4,349.88	4,336.85	4,323.81	4,310.77	4,297.74
61		10.00%	$ 96,396	$ -	Water	341300-Trans Equip Autos	341300	1,629.82	1,604.77	2,026.18	2,001.13	1,976.08	1,951.03	1,925.99	1,900.94
62		5.51%	$ -	$ -	Water	341400-Trans Equip Other	341400	2,693.69	2,687.70	2,681.71	2,675.72	2,669.73	2,663.74	2,657.74	2,651.75
63		4.00%	$ 2,268	$ 37.70	Water	342000-Stores Equipment	342000	80.23	80.11	79.98	79.85	79.72	79.59	79.47	79.34
64		5.00%	$ 167,786	$ 1,699.33	Water	343000-Tools,Shop,Garage Equip	343000	8,446.20	8,444.48	8,442.77	8,441.05	8,439.33	8,437.61	8,479.67	8,517.57
65		6.67%	$ 121,286	$ 2,098.00	Water	344000-Laboratory Equipment	344000	4,319.31	4,304.62	4,289.92	4,275.23	4,260.53	4,245.83	4,231.14	4,216.44
66		2.52%	$ -	$ -	Water	345000-Power Operated Equipment	345000	3,039.54	3,036.41	3,033.28	3,030.15	3,027.02	3,023.89	3,020.76	3,014.30
67		6.67%	$ 189,097	$ (7,397.33)	Water	346100-Comm Equip Non-Telephone	346100	16,479.42	16,454.38	16,429.33	16,404.28	16,379.24	16,354.19	16,329.14	16,304.10
68		6.67%	$ -	$ (12.57)	Water	346190-Remote Control & Instrument	346190	17,501.23	17,559.62	17,585.89	17,970.58	18,117.28	19,905.58	20,501.54	21,097.50
69		6.67%	$ -	$ (176.00)	Water	346200-Comm Equip Telephone	346200	1,753.17	1,753.17	1,753.17	1,753.17	1,753.17	1,753.17	1,753.17	1,753.17
70		5.00%	$ 87,357	$ (766.67)	Water	347000-Misc Equipment	347000	6,760.12	6,756.69	6,753.26	6,749.83	6,746.39	6,742.96	6,739.53	6,706.88
71		5.00%	$ -	$ 3,274.67	Water	348000-Other Tangible Property	348000	(1,712.06)	(1,712.06)	(1,712.06)	(1,712.06)	(1,712.06)	(1,705.50)	(1,698.93)	(1,692.37)
72		5.00%	$ -	$ -	Water	354200-WW Struct & Imp Collection	354200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73	10.00%	20.00%	$ -	$ -	Water	340315-Comp Software Specia	340315	93,815.67	94,765.38	95,312.19	95,847.80	96,171.41	96,486.83	98,746.63	98,746.63
74		0.00%	$ -	$ -	Water	339300-Other P/E-Treatment	339300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75							**Water**	**$ 1,033,745**	**$ 1,035,502**	**$ 1,037,430**	**$ 1,056,515**	**$ 1,057,055**	**$ 1,059,705**	**$ 1,062,600**	**$ 1,058,184**

Kentucky American Water
Case No. 2012-00520
Depreciation Expense Activity (Net of CIAC Amortization) by Month, September 2012 - December 2014
Automatically calculates: (Prior Month UPIS Balance-UPIS Not Depreciating) X (Annual Depreciation Rate/12) - Monthly Depreciation Adjustment
Workpaper # W/P - 4-1
Excel Referen Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Actv Depr Exp

Jun-14	Jul-14	Oct-Dec 2012	2013 Additions	2014 Additions	Forecast Aug 13-Jul 14 Expense
$ 1,060,674	$ 1,062,933	$ 2,933,443	$ 12,371,254	$ 12,772,459.28	$ 12,582,094.07
$ 89,025	$ 89,208	$ 253,272	$ 1,042,903	$ 1,069,550.63	$ 1,059,743.85
$ 971,649	$ 973,725	$ 2,680,171.31	$ 11,328,351.26	$ 11,702,908.65	$ 11,522,350.22

Line	Proposed Deprec. Rate	Annual Deprec. Rate	UPIS Not Deprec.	Monthly Deprec. Adjust	Utility	Account	Utility Plant Account	Jun-14	Jul-14	Oct-Dec 2012	2013 Additions	2014 Additions
1		0.00%		$ -	Water	301000-Organization	301000	0.00	0.00	0.00	0.00	0.00
2		0.00%		$ -	Water	302000-Franchises	302000	0.00	0.00	0.00	0.00	0.00
3		0.00%		$ -	Water	303200-Land & Land Rights-Supply	303200	0.00	0.00	0.00	0.00	0.00
4		0.00%		$ -	Water	303300-Land & Land Rights-Pumping	303300	0.00	0.00	0.00	0.00	0.00
5		0.00%		$ -	Water	303400-Land & Land Rights-Treatment	303400	0.00	0.00	0.00	0.00	0.00
6		0.00%		$ -	Water	303500-Land & Land Rights-T&D	303500	0.00	0.00	0.00	0.00	0.00
7		2.92%	$ -	$ -	Water	304100-Struct & Imp-Supply	304100	16,930.23	16,929.78	50,797.86	203,224.24	203,160.07
8		2.37%	$ -	$ -	Water	304200-Struct & Imp-Pumping	304200	18,946.30	18,941.43	57,116.44	228,027.54	227,326.37
9		2.46%	$ -	$ -	Water	304300-Struct & Imp-Treatment	304300	54,297.73	54,426.48	158,148.03	642,366.55	654,937.72
10		2.50%	$ -	$ -	Water	304400-Struct & Imp-T&D	304400	1,865.60	1,865.60	5,719.48	22,877.93	22,550.76
11		2.82%	$ -	$ -	Water	304500-Struct & Imp-General	304500	10,190.03	10,214.71	27,900.55	115,071.82	123,588.73
12		1.91%	$ -	$ -	Water	304600-Struct & Imp-Offices	304600	9,140.86	9,140.32	27,453.20	109,764.46	109,687.11
13		0.00%	$ -	$ -	Water	304610-Struct & Imp-HVAC	304610	0.00	0.00	0.00	0.00	0.00
14		2.03%	$ -	$ -	Water	304700-Struct & Imp-Store,Shop,Gar	304700	3,020.17	3,019.83	9,079.86	36,288.87	36,239.97
15		4.53%	$ -	$ -	Water	304800-Struct & Imp-Misc	304800	5,967.98	5,950.02	19,788.69	77,538.45	72,656.15
16		1.33%	$ -	$ -	Water	305000-Collect & Impound Reservoirs	305000	1,092.09	1,091.70	3,298.54	13,158.98	13,102.72
17		2.05%	$ -	$ -	Water	306000-Lake, River & Other Intakes	306000	12,779.14	12,821.83	36,709.37	150,133.60	154,233.34
18		2.00%	$ -	$ -	Water	309000-Supply Mains	309000	46,470.35	46,470.33	139,412.13	557,646.80	557,644.05
19		2.93%	$ -	$ -	Water	310000-Power Generation Equip	310000	8,229.77	8,227.14	24,839.55	99,121.00	98,741.46
20		1.87%	$ -	$ -	Water	311200-Pump Eqp Electric	311200	18,840.94	18,898.71	45,117.64	205,481.85	229,755.33
21		1.88%	$ -	$ -	Water	311300-Pump Eqp Diesel	311300	1,092.06	1,091.46	3,310.32	13,187.36	13,101.07
22		1.90%	$ -	$ -	Water	311400-Pump Eqp Hydraulic	311400	12.24	12.24	36.71	146.83	146.83
23		0.00%	$ -	$ -	Water	311500-Pump Eqp Other	311500	0.00	0.00	0.00	0.00	0.00
24		2.02%	$ -	$ -	Water	311520-Pump Eqp-SOS & Pumping	311520	24,757.43	24,750.18	74,796.96	298,535.50	297,194.34
25		2.02%	$ -	$ -	Water	311530-Pump Eqp Wtr Treatment	311530	0.00	0.00	0.00	0.00	0.00
26		2.02%	$ -	$ -	Water	311540-Pumping Equipment TD	311540	707.90	704.90	541.92	1,897.78	8,474.47
27		2.16%	$ -	$ -	Water	320100-WT Equip Non-Media	320100	91,219.64	91,195.61	289,741.37	1,156,404.72	1,114,816.49
28		24.28%	$ -	$ -	Water	320200-WT Equip Filter Media	320200	10,290.43	10,290.43	30,871.29	123,485.15	123,485.15
29		1.66%	$ -	$ -	Water	330000-Dist Reservoirs & Standpipes	330000	2,450.38	2,450.38	7,351.14	29,404.55	29,404.55
30		1.62%	$ -	$ -	Water	330100-Elevated Tanks & Standpipes	330100	17,683.73	17,681.99	41,428.88	165,558.82	215,288.63
31		1.38%	$ -	$ -	Water	330200-Ground Level Tanks	330200	4,144.64	4,163.97	9,470.82	48,268.95	50,133.29
32		1.68%	$ -	$ -	Water	330400-Clearwell	330400	3,614.46	3,614.46	10,843.38	43,373.52	43,373.52
33		1.44%	$ -	$ -	Water	331001-TD Mains Not Classified	331001	202,969.91	203,312.85	537,030.68	2,220,561.81	2,450,139.56
34		1.44%	$ -	$ -	Water	331100-TD Mains 4in & Less	331100	6,690.23	6,690.23	20,070.76	80,282.94	80,282.76
35		1.44%	$ -	$ -	Water	331200-TD Mains 6in to 8in	331200	25,018.00	25,017.95	75,056.95	300,223.15	300,215.69
36		1.44%	$ -	$ -	Water	331300-TD Mains 10in to 16in	331300	10,916.46	10,916.46	32,749.37	130,997.49	130,997.49
37		1.44%	$ -	$ -	Water	331400-TD Mains 18in & Grtr	331400	87,363.76	87,363.72	262,093.43	1,048,370.30	1,048,364.84
38		1.50%	$ -	$ -	Water	333000-Services	333000	63,488.59	63,737.54	177,988.83	732,717.92	763,547.34
39		2.44%	$ -	$ -	Water	334100-Meters	334100	37,716.51	38,657.39	71,845.41	382,977.13	451,284.56
40		2.49%	$ -	$ -	Water	334110-Meters Bronze Case	334110	4,709.69	4,709.08	14,163.80	56,600.37	56,512.65
41		2.95%	$ -	$ -	Water	334120-Meters Plastic Case	334120	470.87	439.30	3,211.56	10,005.77	5,461.02
42		2.64%	$ -	$ -	Water	334130-Meters Other	334130	13,138.11	13,077.51	42,868.43	166,019.87	157,293.72
43		2.64%	$ -	$ -	Water	334131-Meter Reading Units	334131	691.11	691.11	2,073.33	8,293.31	8,293.31
44		2.53%	$ -	$ -	Water	334200-Meter Installations	334200	38,876.63	38,875.39	116,555.67	466,690.40	467,158.45
45		2.48%	$ -	$ -	Water	334300-Meter Vaults	334300	1,040.54	1,040.47	3,125.58	12,496.05	13,499.73
46		1.19%	$ -	$ -	Water	335000-Hydrants	335000	14,624.20	14,675.93	40,706.87	167,999.65	176,408.68
47		19.40%	$ -	$ -	Water	339100-Other P/E-Intangible	339100	135.39	135.39	406.18	1,624.71	1,624.71
48		10.72%	$ -	$ -	Water	339600-Other P/E-CPS	339600	7,073.42	7,073.42	8,211.12	68,117.23	83,764.27
49		5.00%	$ 103,460	$ 621.33	Water	340100-Office Furniture & Equip	340100	2,104.34	2,093.64	6,376.74	26,728.49	25,187.84
50		20.00%	$ 11,522	$ (327.13)	Water	340210-Comp & Periph Mainframe	340210	1,472.11	1,464.81	4,832.58	18,673.11	17,621.56

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Jun-14	Jul-14	Oct-Dec 2012	2013 Additions	2014 Additions	Forecast Aug 13-Jul 14 Expense
$ 1,060,674	$ 1,062,933	$ 2,933,443	$ 12,371,254	$ 12,772,459.28	$ 12,582,094.07
$ 89,025	$ 89,208	$ 253,272	$ 1,042,903	$ 1,069,550.63	$ 1,059,743.85
$ 971,649	$ 973,725	$ 2,680,171.31	$ 11,328,351.26	$ 11,702,908.65	$ 11,522,350.22

Line	Proposed Deprec. Rate	Annual Deprec. Rate	UPIS Not Deprec.	Monthly Deprec. Adjust	Utility	Account	Utility Plant Account	Jun-14	Jul-14	Oct-Dec 2012	2013 Additions	2014 Additions
51		20.00%	$ 414,948	$ 11,658.50	Water	340220-Comp & Periph Personal	340220	(4,983.49)	(5,118.39)	(7,261.21)	(41,185.76)	(60,611.26)
52		20.00%	$ 88,579	$ (1,285.29)	Water	340230-Comp & Periph Other	340230	12,021.89	12,006.56	36,939.68	146,378.73	144,170.73
53		0.00%	$ -	$ -	Water	340240-Comp & Periph Capital Lease	340240	0.00	0.00	0.00	0.00	0.00
54		20.00%	$ 3,459,484	$ 8,263.93	Water	340300-Computer Software	340300	(7,102.47)	(7,339.67)	(7,918.48)	(52,495.79)	(86,652.83)
55		20.00%	$ 400	$ 7,080.67	Water	340320-Comp Software Personal	340320	(7,029.32)	(7,029.32)	(21,087.96)	(84,351.84)	(84,351.84)
56		20.00%	$ -	$ -	Water	340325-Comp Software Customized	340325	11,670.30	11,670.30	35,010.91	140,043.62	140,043.62
57		20.00%	$ 527,874	$ 1,759.42	Water	340330-Comp Software Other	340330	2,194.04	2,194.04	6,582.11	26,328.46	26,328.46
58		6.67%	$ 4,285	$ 252.90	Water	340500-Other Office Equipment	340500	77.06	74.23	392.61	1,315.55	907.74
59		1.91%	$ -	$ -	Water	341100-Trans Equip Lt Duty Trks	341100	2,983.41	2,971.78	10,125.18	38,808.70	36,645.44
60		2.75%	$ -	$ -	Water	341200-Trans Equip Hvy Duty Trks	341200	4,319.66	4,347.93	12,084.26	49,954.25	53,321.93
61		10.00%	$ 96,396	$ -	Water	341300-Trans Equip Autos	341300	2,006.85	2,136.58	1,388.59	13,749.20	29,792.48
62		5.51%	$ -	$ -	Water	341400-Trans Equip Other	341400	2,645.76	2,639.77	8,278.78	32,575.92	31,713.20
63		4.00%	$ 2,268	$ 37.70	Water	342000-Stores Equipment	342000	79.21	79.08	244.93	968.18	949.74
64		5.00%	$ 167,786	$ 1,699.33	Water	343000-Tools,Shop,Garage Equip	343000	8,844.13	9,122.00	19,917.34	94,055.52	108,847.95
65		6.67%	$ 121,286	$ 2,098.00	Water	344000-Laboratory Equipment	344000	4,201.75	4,187.05	13,363.35	52,449.01	50,332.77
66		2.52%	$ -	$ -	Water	345000-Power Operated Equipment	345000	3,011.17	3,008.04	9,221.91	36,605.92	36,128.60
67		6.67%	$ 189,097	$ (7,397.33)	Water	346100-Comm Equip Non-Telephone	346100	16,279.05	16,254.00	49,745.30	198,805.07	195,198.32
68		6.67%	$ -	$ (12.57)	Water	346190-Remote Control & Instrument	346190	21,693.46	22,289.43	25,533.54	161,594.79	253,950.06
69		6.67%	$ -	$ (176.00)	Water	346200-Comm Equip Telephone	346200	1,753.17	1,753.17	5,259.51	21,038.04	21,038.04
70		5.00%	$ 87,357	$ (766.67)	Water	347000-Misc Equipment	347000	6,703.44	6,700.01	17,346.30	76,948.10	81,101.62
71		5.00%	$ -	$ 3,274.67	Water	348000-Other Tangible Property	348000	(1,685.80)	(1,685.80)	(8,092.95)	(23,574.20)	(20,321.53)
72		5.00%	$ -	$ -	Water	354200-WW Struct & Imp Collection	354200	0.00	0.00	0.00	0.00	0.00
73	10.00%	20.00%	$ -	$ -	Water	340315-Comp Software Specia	340315	98,746.63	98,746.63	233,228.18	1,240,897.67	1,177,225.73
74		0.00%	$ -	$ -	Water	339300-Other P/E-Treatment	339300	0.00	0.00	0.00	0.00	0.00
75							**Water**	**$ 1,060,674**	**$ 1,062,933**	**2,933,443.31**	**12,371,254.11**	**12,772,459.28**

Kentucky American Water
Case No. 2012-00520
Cost of Removal Expense by Month, September 2012 - December 2014
Automatically calculates: Prior Month UPIS Balance less UPIS not depreciating X (Annual Cost of Removal Rate/12)
Workpaper # W/P - 4-3
Excel Reference Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Actv COR

UPIS Balance

	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13
Water Cost of Removal Expense		$ 168,798	$ 169,129	$ 169,615	$ 170,314	$ 170,682	$ 171,334	$ 171,577	$ 172,804
Less CIAC Cost of Removal Credit		$ 41,395	$ 41,493	$ 41,591	$ 41,689	$ 41,759	$ 42,682	$ 42,752	$ 42,850
Net Cost of Removal Expense:		$ 127,403	$ 127,636	$ 128,024	$ 128,625	$ 128,923	$ 128,652	$ 128,824	$ 129,954

Annual Cost of Removal Rate	UPIS Not Depreciating	Utility	Account	Util. Plant Account	SAP G/L Account	NARUC Acct	UPIS Bal Sep-12 less UPIS Not Depreciating	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13
0.00%		Water	301000-Organization	301000	10130100	301.1	$ 37,450	0	0	0	0	0	0	0	0
0.00%		Water	302000-Franchises	302000	10130200	302.1	$ 70,261	0	0	0	0	0	0	0	0
0.00%		Water	303200-Land & Land Rights-Supply	303200	10130320	303.2	$ 1,077,363	0	0	0	0	0	0	0	0
0.00%		Water	303300-Land & Land Rights-Pumping	303300	10130330	303.2	$ 195,966	0	0	0	0	0	0	0	0
0.00%		Water	303400-Land & Land Rights-Treatment	303400	10130340	303.3	$ 800,183	0	0	0	0	0	0	0	0
0.00%		Water	303500-Land & Land Rights-T&D	303500	10130350	303.4	$ 7,473,931	0	0	0	0	0	0	0	0
0.15%	$ -	Water	304100-Struct & Imp-Supply	304100	10130410	304.2	$ 6,953,802	869	870	870	870	870	870	870	870
0.48%	$ -	Water	304200-Struct & Imp-Pumping	304200	10130420	304.2	$ 9,642,371	3,857	3,856	3,855	3,854	3,853	3,852	3,851	3,850
0.49%	$ -	Water	304300-Struct & Imp-Treatment	304300	10130430	304.3	$ 25,719,554	10,502	10,500	10,499	10,548	10,589	10,628	10,626	10,624
0.13%	$ -	Water	304400-Struct & Imp-T&D	304400	10130440	304.4	$ 915,117	99	99	99	99	99	99	99	99
0.14%	$ -	Water	304500-Struct & Imp-General	304500	10130450	304.5	$ 3,927,194	458	460	467	467	467	467	467	467
0.10%	$ -	Water	304600-Struct & Imp-Offices	304600	10130450	304.5	$ 5,749,699	479	479	479	479	479	479	479	479
0.00%	$ -	Water	304610-Struct & Imp-HVAC	304610	10130450	304.5	$ 10,570	0	0	0	0	0	0	0	0
0.00%	$ -	Water	304700-Struct & Imp-Store,Shop,Gar	304700	10130450	304.5	$ 1,789,335	0	0	0	0	0	0	0	0
0.45%	$ -	Water	304800-Struct & Imp-Misc	304800	10130450	304.5	$ 1,752,103	657	655	653	652	650	648	646	645
0.00%	$ -	Water	305000-Collect & Impound Reservoirs	305000	10130500	305.2	$ 992,394	0	0	0	0	0	0	0	0
0.00%	$ -	Water	306000-Lake, River & Other Intakes	306000	10130600	306.2	$ 7,162,528	0	0	0	0	0	0	0	0
0.20%	$ -	Water	309000-Supply Mains	309000	10130900	309.2	$ 27,882,438	4,647	4,647	4,647	4,647	4,647	4,647	4,647	4,647
0.00%	$ -	Water	310000-Power Generation Equip	310000	10131000	310.2	$ 3,392,145	0	0	0	0	0	0	0	0
0.38%	$ -	Water	311200-Pump Eqp Electric	311200	10131120	311.2	$ 9,650,869	3,056	3,055	3,058	3,081	3,100	3,118	3,117	3,585
0.38%	$ -	Water	311300-Pump Eqp Diesel	311300	10131130	311.2	$ 704,706	223	223	223	223	223	223	222	222
0.38%	$ -	Water	311400-Pump Eqp Hydraulic	311400	10131140	311.2	$ 7,728	2	2	2	2	2	2	2	2
0.00%	$ -	Water	311500-Pump Eqp Other	311500	10131150	311.2	$ -	0	0	0	0	0	0	0	0
0.41%	$ -	Water	311520-Pump Eqp-SOS & Pumping	311520	10131152	311.2	$ 14,815,585	5,062	5,061	5,059	5,058	5,056	5,055	5,053	5,052
0.41%	$ -	Water	311530-Pump Eqp Wtr Treatment	311530	10131153	311.3	$ -	0	0	0	0	0	0	0	0
0.41%	$ -	Water	311540-Pumping Equipment TD	311540	10131154	311.4	$ 109,092	37	37	36	35	35	34	34	33
0.43%	$ -	Water	320100-WT Equip Non-Media	320100	10132010	320.3	$ 53,685,967	19,237	19,227	19,216	19,216	19,215	19,213	19,202	19,191
0.00%	$ -	Water	320200-WT Equip Filter Media	320200	10132010	320.3	$ 508,588	0	0	0	0	0	0	0	0
0.00%	$ -	Water	330000-Dist Reservoirs & Standpipes	330000	10133000	330.4	$ 1,771,358	0	0	0	0	0	0	0	0
0.41%	$ -	Water	330100-Elevated Tanks & Standpipes	330100	10133000	330.4	$ 10,230,642	3,495	3,495	3,495	3,494	3,494	3,493	3,493	3,492
0.00%	$ -	Water	330200-Ground Level Tanks	330200	10133000	330.4	$ 2,677,265	0	0	0	0	0	0	0	0
0.00%	$ -	Water	330400-Clearwell	330400	10133000	330.4	$ 2,581,757	0	0	0	0	0	0	0	0
0.22%	$ -	Water	331001-TD Mains Not Classified	331001	10133100	331.4	$ 148,900,369	27,298	27,322	27,426	27,525	27,644	27,925	27,948	28,280
0.22%	$ -	Water	331100-TD Mains 4in & Less	331100	10133100	331.4	$ 5,575,212	1,022	1,022	1,022	1,022	1,022	1,022	1,022	1,022
0.22%	$ -	Water	331200-TD Mains 6in to 8in	331200	10133100	331.4	$ 20,849,197	3,822	3,822	3,822	3,822	3,822	3,822	3,822	3,822
0.22%	$ -	Water	331300-TD Mains 10in to 16in	331300	10133100	331.4	$ 9,097,048	1,668	1,668	1,668	1,668	1,668	1,668	1,668	1,668
0.22%	$ -	Water	331400-TD Mains 18in & Grtr	331400	10133100	331.4	$ 72,803,762	13,347	13,347	13,347	13,347	13,347	13,347	13,347	13,347
1.50%	$ -	Water	333000-Services	333000	10133300	333.4	$ 47,271,866	59,090	59,315	59,584	59,818	59,990	60,217	60,424	60,728
0.24%	$ -	Water	334100-Meters	334100	10133410	334.4	$ 11,080,862	2,216	2,368	2,483	2,811	2,816	2,883	2,902	3,019
0.25%	$ -	Water	334110-Meters Bronze Case	334110	10133410	334.4	$ 2,275,603	474	474	474	474	474	474	474	474
0.30%	$ -	Water	334120-Meters Plastic Case	334120	10133410	334.4	$ 448,304	112	109	106	102	99	96	93	90
0.26%	$ -	Water	334130-Meters Other	334130	10133410	334.4	$ 6,522,761	1,413	1,407	1,401	1,395	1,389	1,383	1,377	1,371
0.26%	$ -	Water	334131-Meter Reading Units	334131	10133410	334.4	$ 314,141	68	68	68	68	68	68	68	68
0.25%	$ -	Water	334200-Meter Installations	334200	10133420	334.4	$ 18,416,593	3,837	3,837	3,844	3,844	3,844	3,843	3,843	3,843
0.25%	$ -	Water	334300-Meter Vaults	334300	10133410	334.4	$ 504,160	105	105	105	105	105	105	105	105
0.30%	$ -	Water	335000-Hydrants	335000	10133500	335.4	$ 13,641,556	3,410	3,419	3,433	3,444	3,458	3,480	3,489	3,508
0.00%	$ -	Water	339100-Other P/E-Intangible	339100	10133910	339.1	$ 8,375	0	0	0	0	0	0	0	0
0.00%	$ -	Water	339600-Other P/E-CPS	339600	10133910	339.1	$ 306,385	0	0	0	0	0	0	0	0

Kentucky American Water
Case No. 2012-00520
Cost of Removal Expense by Month, September 2012 - December 2014

Automatically calculates: Prior Month UPIS Balance less UPIS not depreciating X (Annual Cost of Removal Rate/12)

Workpaper # W/P - 4-3
Excel Refere Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Actv COR

UPIS Balance

	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13
Water Cost of Removal Expense		$ 168,798	$ 169,129	$ 169,615	$ 170,314	$ 170,682	$ 171,334	$ 171,577	$ 172,804
Less CIAC Cost of Removal Credit		$ 41,395	$ 41,493	$ 41,591	$ 41,689	$ 41,759	$ 42,682	$ 42,752	$ 42,850
Net Cost of Removal Expense:		$ 127,403	$ 127,636	$ 128,024	$ 128,625	$ 128,923	$ 128,652	$ 128,824	$ 129,954

Annual Cost of Removal Rate	UPIS Not Depreciating	Utility	Account	Util. Plant Account	SAP G/L Account	NARUC Acct	UPIS Bal Sep-12 less UPIS Not Depreciating	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13
0.00%	$ 103,460	Water	340100-Office Furniture & Equip	340100	10134010	340.5	$ 574,449	0	0	0	0	0	0	0	0
0.00%	$ 11,522	Water	340210-Comp & Periph Mainframe	340210	10134010	340.5	$ 77,462	0	0	0	0	0	0	0	0
0.00%	$ 414,948	Water	340220-Comp & Periph Personal	340220	10134010	340.5	$ 562,380	0	0	0	0	0	0	0	0
0.00%	$ 88,579	Water	340230-Comp & Periph Other	340230	10134010	340.5	$ 662,596	0	0	0	0	0	0	0	0
0.00%	$ -	Water	340240-Comp & Periph Capital Lease	340240	10134010	340.5	$ -	0	0	0	0	0	0	0	0
0.00%	$ 3,459,484	Water	340300-Computer Software	340300	10134010	340.5	$ 346,435	0	0	0	0	0	0	0	0
0.00%	$ 400	Water	340320-Comp Software Personal	340320	10134010	340.5	$ 3,081	0	0	0	0	0	0	0	0
0.00%	$ -	Water	340325-Comp Software Customized	340325	10134010	340.5	$ 700,218	0	0	0	0	0	0	0	0
0.00%	$ 527,874	Water	340330-Comp Software Other	340330	10134010	340.5	$ 237,207	0	0	0	0	0	0	0	0
0.00%	$ 4,285	Water	340500-Other Office Equipment	340500	10134010	340.5	$ 69,553	0	0	0	0	0	0	0	0
-0.38%	$ -	Water	341100-Trans Equip Lt Duty Trks	341100	10134100	341.5	$ 2,119,633	(671)	(674)	(669)	(669)	(661)	(653)	(644)	(636)
-0.41%	$ -	Water	341200-Trans Equip Hvy Duty Trks	341200	10134100	341.5	$ 1,737,108	(594)	(603)	(605)	(611)	(609)	(607)	(605)	(603)
-1.50%	$ 96,396	Water	341300-Trans Equip Autos	341300	10134100	341.5	$ 31,569	(39)	(80)	(89)	(115)	(112)	(108)	(104)	(100)
0.00%	$ -	Water	341400-Trans Equip Other	341400	10134100	341.5	$ 602,305	0	0	0	0	0	0	0	0
0.00%	$ 2,268	Water	342000-Stores Equipment	342000	10134200	342.5	$ 35,841	0	0	0	0	0	0	0	0
0.00%	$ 167,786	Water	343000-Tools,Shop,Garage Equip	343000	10134300	343.5	$ 1,978,150	0	0	0	0	0	0	0	0
0.00%	$ 121,286	Water	344000-Laboratory Equipment	344000	10134400	344.5	$ 1,179,110	0	0	0	0	0	0	0	0
-0.38%	$ -	Water	345000-Power Operated Equipment	345000	10134500	345.5	$ 1,465,286	(464)	(464)	(463)	(463)	(462)	(462)	(461)	(461)
0.00%	$ 189,097	Water	346100-Comm Equip Non-Telephone	346100	10134600	346.5	$ 1,594,567	0	0	0	0	0	0	0	0
0.00%	$ -	Water	346190-Remote Control & Instrument	346190	10134600	346.5	$ 1,528,986	0	0	0	0	0	0	0	0
0.00%	$ -	Water	346200-Comm Equip Telephone	346200	10134600	346.5	$ 283,749	0	0	0	0	0	0	0	0
0.00%	$ 87,357	Water	347000-Misc Equipment	347000	10134700	347.5	$ 1,196,305	0	0	0	0	0	0	0	0
0.00%	$ -	Water	348000-Other Tangible Property	348000	10134800	348.5	$ 138,485	0	0	0	0	0	0	0	0
0.00%	$ -	Water	354200-WW Struct & Imp Collection	354200	10135420	354.2	$ -	0	0	0	0	0	0	0	0
0.00%	$ -	Water	340315-Comp Software Specia	340315	10134010	C3405	$ 4,601,216	0	0	0	0	0	0	0	0
0.00%	$ -	Water	339300-Other P/E-Treatment	339300	10133930	C3393	$ -	0	0	0	0	0	0	0	0
				Water Cost of Removal Expense				168,798	169,129	169,615	170,314	170,682	171,334	171,577	172,804

Kentucky American Water
Case No. 2012-00520
Cost of Removal Expense by Month, September 2012 - December 2014
Automatically calculates: Prior Month UPIS Balance less UPIS not depreciating
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	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
Water Cost of Removal Expense	$ 173,212	$ 173,688	$ 173,892	$ 174,334	$ 174,732	$ 175,111	$ 175,350	$ 178,887	$ 179,137	$ 179,429
Less CIAC Cost of Removal Credit	$ 42,945	$ 43,046	$ 43,122	$ 43,214	$ 43,306	$ 43,397	$ 43,556	$ 43,624	$ 43,694	$ 43,761
Net Cost of Removal Expense:	$ 130,267	$ 130,642	$ 130,770	$ 131,120	$ 131,426	$ 131,713	$ 131,794	$ 135,263	$ 135,443	$ 135,667

Annual Cost of Removal Rate	UPIS Not Depreciating	Utility	Account	Util. Plant Account	SAP G/L Account	NARUC Acct	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
0.00%		Water	301000-Organization	301000	10130100	301.1	0	0	0	0	0	0	0	0	0	0
0.00%		Water	302000-Franchises	302000	10130200	302.1	0	0	0	0	0	0	0	0	0	0
0.00%		Water	303200-Land & Land Rights-Supply	303200	10130320	303.2	0	0	0	0	0	0	0	0	0	0
0.00%		Water	303300-Land & Land Rights-Pumping	303300	10130330	303.2	0	0	0	0	0	0	0	0	0	0
0.00%		Water	303400-Land & Land Rights-Treatment	303400	10130340	303.3	0	0	0	0	0	0	0	0	0	0
0.00%	$ -	Water	303500-Land & Land Rights-T&D	303500	10130350	303.4	0	0	0	0	0	0	0	0	0	0
0.15%	$ -	Water	304100-Struct & Imp-Supply	304100	10130410	304.2	870	870	870	870	870	870	870	870	870	870
0.48%	$ -	Water	304200-Struct & Imp-Pumping	304200	10130420	304.2	3,849	3,848	3,847	3,846	3,845	3,844	3,843	3,842	3,841	3,840
0.49%	$ -	Water	304300-Struct & Imp-Treatment	304300	10130430	304.3	10,629	10,659	10,666	10,707	10,735	10,753	10,787	10,815	10,817	10,815
0.13%	$ -	Water	304400-Struct & Imp-T&D	304400	10130440	304.4	99	99	99	99	99	99	99	99	99	99
0.14%	$ -	Water	304500-Struct & Imp-General	304500	10130450	304.5	469	472	477	480	486	495	500	503	503	503
0.10%	$ -	Water	304600-Struct & Imp-Offices	304600	10130450	304.5	479	479	479	479	479	479	479	479	479	479
0.00%	$ -	Water	304610-Struct & Imp-HVAC	304610	10130450	304.5	0	0	0	0	0	0	0	0	0	0
0.00%	$ -	Water	304700-Struct & Imp-Store,Shop,Gar	304700	10130450	304.5	0	0	0	0	0	0	0	0	0	0
0.45%	$ -	Water	304800-Struct & Imp-Misc	304800	10130450	304.5	643	641	639	637	636	634	632	630	628	627
0.00%	$ -	Water	305000-Collect & Impound Reservoirs	305000	10130500	305.2	0	0	0	0	0	0	0	0	0	0
0.00%	$ -	Water	306000-Lake, River & Other Intakes	306000	10130600	306.2	0	0	0	0	0	0	0	0	0	0
0.20%	$ -	Water	309000-Supply Mains	309000	10130900	309.2	4,647	4,647	4,647	4,647	4,647	4,647	4,647	4,647	4,647	4,647
0.00%	$ -	Water	310000-Power Generation Equip	310000	10131000	310.2	0	0	0	0	0	0	0	0	0	0
0.38%	$ -	Water	311200-Pump Eqp Electric	311200	10131120	311.2	3,598	3,639	3,669	3,694	3,707	3,716	3,731	3,832	3,832	3,830
0.38%	$ -	Water	311300-Pump Eqp Diesel	311300	10131130	311.2	222	222	222	222	222	222	221	221	221	221
0.38%	$ -	Water	311400-Pump Eqp Hydraulic	311400	10131140	311.2	2	2	2	2	2	2	2	2	2	2
0.00%	$ -	Water	311500-Pump Eqp Other	311500	10131150	311.2	0	0	0	0	0	0	0	0	0	0
0.41%	$ -	Water	311520-Pump Eqp-SOS & Pumping	311520	10131152	311.2	5,050	5,049	5,047	5,046	5,044	5,043	5,041	5,040	5,038	5,037
0.41%	$ -	Water	311530-Pump Eqp Wtr Treatment	311530	10131153	311.3	0	0	0	0	0	0	0	0	0	0
0.41%	$ -	Water	311540-Pumping Equipment TD	311540	10131154	311.4	32	32	31	31	30	29	29	146	146	146
0.43%	$ -	Water	320100-WT Equip Non-Media	320100	10132010	320.3	19,182	19,178	19,169	19,168	19,164	19,157	19,154	19,150	19,140	19,129
0.00%	$ -	Water	320200-WT Equip Filter Media	320200	10132010	320.3	0	0	0	0	0	0	0	0	0	0
0.00%	$ -	Water	330000-Dist Reservoirs & Standpipes	330000	10133000	330.4	0	0	0	0	0	0	0	0	0	0
0.41%	$ -	Water	330100-Elevated Tanks & Standpipes	330100	10133000	330.4	3,492	3,492	3,491	3,491	3,490	3,490	3,489	4,671	4,673	4,674
0.00%	$ -	Water	330200-Ground Level Tanks	330200	10133000	330.4	0	0	0	0	0	0	0	0	0	0
0.00%	$ -	Water	330400-Clearwell	330400	10133000	330.4	0	0	0	0	0	0	0	0	0	0
0.22%	$ -	Water	331001-TD Mains Not Classified	331001	10133100	331.4	28,330	28,381	28,450	28,538	28,639	28,747	28,846	30,767	30,848	30,903
0.22%	$ -	Water	331100-TD Mains 4in & Less	331100	10133100	331.4	1,022	1,022	1,022	1,022	1,022	1,022	1,022	1,022	1,022	1,022
0.22%	$ -	Water	331200-TD Mains 6in to 8in	331200	10133100	331.4	3,822	3,822	3,822	3,822	3,822	3,822	3,822	3,822	3,822	3,822
0.22%	$ -	Water	331300-TD Mains 10in to 16in	331300	10133100	331.4	1,668	1,668	1,668	1,668	1,668	1,668	1,668	1,668	1,668	1,668
0.22%	$ -	Water	331400-TD Mains 18in & Grtr	331400	10133100	331.4	13,347	13,347	13,347	13,347	13,347	13,347	13,347	13,347	13,347	13,347
1.50%	$ -	Water	333000-Services	333000	10133300	333.4	60,962	61,195	61,435	61,680	61,893	62,103	62,271	62,442	62,603	62,782
0.24%	$ -	Water	334100-Meters	334100	10133410	334.4	3,155	3,265	3,325	3,350	3,373	3,382	3,390	3,395	3,398	3,460
0.25%	$ -	Water	334110-Meters Bronze Case	334110	10133410	334.4	474	474	473	473	473	473	473	473	473	473
0.30%	$ -	Water	334120-Meters Plastic Case	334120	10133410	334.4	86	83	80	77	74	70	67	64	61	58
0.26%	$ -	Water	334130-Meters Other	334130	10133410	334.4	1,366	1,360	1,354	1,348	1,342	1,336	1,330	1,324	1,318	1,312
0.26%	$ -	Water	334131-Meter Reading Units	334131	10133410	334.4	68	68	68	68	68	68	68	68	68	68
0.25%	$ -	Water	334200-Meter Installations	334200	10133420	334.4	3,843	3,843	3,843	3,843	3,843	3,842	3,842	3,842	3,842	3,842
0.25%	$ -	Water	334300-Meter Vaults	334300	10133410	334.4	105	105	105	105	105	105	105	105	105	105
0.30%	$ -	Water	335000-Hydrants	335000	10133500	335.4	3,520	3,532	3,548	3,565	3,583	3,606	3,620	3,633	3,645	3,655
0.00%	$ -	Water	339100-Other P/E-Intangible	339100	10133910	339.1	0	0	0	0	0	0	0	0	0	0
0.00%	$ -	Water	339600-Other P/E-CPS	339600	10133910	339.1	0	0	0	0	0	0	0	0	0	0

Kentucky American Water
Case No. 2012-00520
Cost of Removal Expense by Month, September 2012 - December 2014
Automatically calculates: Prior Month UPIS Balance less UPIS not depreciating X (Annual Cost of Removal Rate/12)
Workpaper # W/P - 4-3
Excel Refere Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Actv COR

	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
Water Cost of Removal Expense	$ 173,212	$ 173,688	$ 173,892	$ 174,334	$ 174,732	$ 175,111	$ 175,350	$ 178,887	$ 179,137	$ 179,429
Less CIAC Cost of Removal Credit	$ 42,945	$ 43,046	$ 43,122	$ 43,214	$ 43,306	$ 43,397	$ 43,556	$ 43,624	$ 43,694	$ 43,761
Net Cost of Removal Expense:	$ 130,267	$ 130,642	$ 130,770	$ 131,120	$ 131,426	$ 131,713	$ 131,794	$ 135,263	$ 135,443	$ 135,667

Annual Cost of Removal Rate	UPIS Not Depreciating	Utility	Account	Util. Plant Account	SAP G/L Account	NARUC Acct	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
0.00%	$ 103,460	Water	340100-Office Furniture & Equip	340100	10134010	340.5	0	0	0	0	0	0	0	0	0	0
0.00%	$ 11,522	Water	340210-Comp & Periph Mainframe	340210	10134010	340.5	0	0	0	0	0	0	0	0	0	0
0.00%	$ 414,948	Water	340220-Comp & Periph Personal	340220	10134010	340.5	0	0	0	0	0	0	0	0	0	0
0.00%	$ 88,579	Water	340230-Comp & Periph Other	340230	10134010	340.5	0	0	0	0	0	0	0	0	0	0
0.00%	$ -	Water	340240-Comp & Periph Capital Lease	340240	10134010	340.5	0	0	0	0	0	0	0	0	0	0
0.00%	$ 3,459,484	Water	340300-Computer Software	340300	10134010	340.5	0	0	0	0	0	0	0	0	0	0
0.00%	$ 400	Water	340320-Comp Software Personal	340320	10134010	340.5	0	0	0	0	0	0	0	0	0	0
0.00%	$ -	Water	340325-Comp Software Customized	340325	10134010	340.5	0	0	0	0	0	0	0	0	0	0
0.00%	$ 527,874	Water	340330-Comp Software Other	340330	10134010	340.5	0	0	0	0	0	0	0	0	0	0
0.00%	$ 4,285	Water	340500-Other Office Equipment	340500	10134010	340.5	0	0	0	0	0	0	0	0	0	0
-0.38%	$ -	Water	341100-Trans Equip Lt Duty Trks	341100	10134100	341.5	(634)	(626)	(652)	(644)	(636)	(628)	(637)	(629)	(621)	(613)
-0.41%	$ -	Water	341200-Trans Equip Hvy Duty Trks	341200	10134100	341.5	(607)	(605)	(640)	(639)	(637)	(635)	(650)	(649)	(647)	(645)
-1.50%	$ 96,396	Water	341300-Trans Equip Autos	341300	10134100	341.5	(119)	(115)	(252)	(248)	(244)	(241)	(304)	(300)	(296)	(293)
0.00%	$ -	Water	341400-Trans Equip Other	341400	10134100	341.5	0	0	0	0	0	0	0	0	0	0
0.00%	$ 2,268	Water	342000-Stores Equipment	342000	10134200	342.5	0	0	0	0	0	0	0	0	0	0
0.00%	$ 167,786	Water	343000-Tools,Shop,Garage Equip	343000	10134300	343.5	0	0	0	0	0	0	0	0	0	0
0.00%	$ 121,286	Water	344000-Laboratory Equipment	344000	10134400	344.5	0	0	0	0	0	0	0	0	0	0
-0.38%	$ -	Water	345000-Power Operated Equipment	345000	10134500	345.5	(460)	(460)	(459)	(459)	(458)	(458)	(457)	(457)	(456)	(456)
0.00%	$ 189,097	Water	346100-Comm Equip Non-Telephone	346100	10134600	346.5	0	0	0	0	0	0	0	0	0	0
0.00%	$ -	Water	346190-Remote Control & Instrument	346190	10134600	346.5	0	0	0	0	0	0	0	0	0	0
0.00%	$ -	Water	346200-Comm Equip Telephone	346200	10134600	346.5	0	0	0	0	0	0	0	0	0	0
0.00%	$ 87,357	Water	347000-Misc Equipment	347000	10134700	347.5	0	0	0	0	0	0	0	0	0	0
0.00%	$ -	Water	348000-Other Tangible Property	348000	10134800	348.5	0	0	0	0	0	0	0	0	0	0
0.00%	$ -	Water	354200-WW Struct & Imp Collection	354200	10135420	354.2	0	0	0	0	0	0	0	0	0	0
0.00%	$ -	Water	340315-Comp Software Specia	340315	10134010	C3405	0	0	0	0	0	0	0	0	0	0
0.00%	$ -	Water	339300-Other P/E-Treatment	339300	10133930	C3393	0	0	0	0	0	0	0	0	0	0
						Water Cost of Removal Expense	173,212	173,688	173,892	174,334	174,732	175,111	175,350	178,887	179,137	179,429

Kentucky American Water
Case No. 2012-00520
Cost of Removal Expense by Month, September 2012 - December 2014
Automatically calculates: Prior Month UPIS Balance less UPIS not depreciating
X (Annual Cost of Removal Rate/12)
Workpaper # W/P - 4-3
Excel Reference: Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Actv COR

	Apr-14	May-14	Jun-14	Jul-14	Oct-Dec 2012 Expense	2013 Expense	2014 Expense	Forecast Aug 13-Jul 14 Expense
Water Cost of Removal Expense	$ 179,683	$ 178,876	$ 179,290	$ 179,695	$ 507,541.86	$ 2,077,029.30	$ 2,160,740.41	$ 2,128,415
Less CIAC Cost of Removal Credit	$ 43,831	$ 43,929	$ 44,024	$ 44,125	$ 124,479.11	$ 514,319.20	$ 528,979.57	$ 523,584
Net Cost of Removal Expense:	$ 135,851	$ 134,947	$ 135,265	$ 135,570	$ 383,063	$ 1,562,710	$ 1,631,761	$ 1,604,831

Annual Cost of Removal Rate	UPIS Not Depreciating	Utility	Account	Util. Plant Account	SAP G/L Account	NARUC Acct	Apr-14	May-14	Jun-14	Jul-14	Oct-Dec 2012 Expense	2013 Expense	2014 Expense	Forecast Expense
0.00%		Water	301000-Organization	301000	10130100	301.1	0	0	0	0	0	0	0	$ -
0.00%		Water	302000-Franchises	302000	10130200	302.1	0	0	0	0	0	0	0	$ -
0.00%		Water	303200-Land & Land Rights-Supply	303200	10130320	303.2	0	0	0	0	0	0	0	$ -
0.00%		Water	303300-Land & Land Rights-Pumping	303300	10130330	303.2	0	0	0	0	0	0	0	$ -
0.00%		Water	303400-Land & Land Rights-Treatment	303400	10130340	303.3	0	0	0	0	0	0	0	$ -
0.00%		Water	303500-Land & Land Rights-T&D	303500	10130350	303.4	0	0	0	0	0	0	0	$ -
0.15%	$ -	Water	304100-Struct & Imp-Supply	304100	10130410	304.2	870	870	870	870	2,609	10,440	10,436	$ 10,438
0.48%	$ -	Water	304200-Struct & Imp-Pumping	304200	10130420	304.2	3,839	3,838	3,837	3,836	11,568	46,183	46,041	$ 46,100
0.49%	$ -	Water	304300-Struct & Imp-Treatment	304300	10130430	304.3	10,813	10,811	10,815	10,841	31,501	127,951	130,455	$ 129,375
0.13%	$ -	Water	304400-Struct & Imp-T&D	304400	10130440	304.4	99	97	97	97	297	1,190	1,173	$ 1,183
0.14%	$ -	Water	304500-Struct & Imp-General	304500	10130450	304.5	503	503	506	507	1,385	5,713	6,136	$ 5,969
0.10%	$ -	Water	304600-Struct & Imp-Offices	304600	10130450	304.5	479	479	479	479	1,437	5,747	5,743	$ 5,744
0.00%	$ -	Water	304610-Struct & Imp-HVAC	304610	10130450	304.5	0	0	0	0	0	0	0	$ -
0.00%	$ -	Water	304700-Struct & Imp-Store,Shop,Gar	304700	10130450	304.5	0	0	0	0	0	0	0	$ -
0.45%	$ -	Water	304800-Struct & Imp-Misc	304800	10130450	304.5	625	595	593	591	1,966	7,702	7,217	$ 7,467
0.00%	$ -	Water	305000-Collect & Impound Reservoirs	305000	10130500	305.2	0	0	0	0	0	0	0	$ -
0.00%	$ -	Water	306000-Lake, River & Other Intakes	306000	10130600	306.2	0	0	0	0	0	0	0	$ -
0.20%	$ -	Water	309000-Supply Mains	309000	10130900	309.2	4,647	4,647	4,647	4,647	13,941	55,765	55,764	$ 55,765
0.00%	$ -	Water	310000-Power Generation Equip	310000	10131000	310.2	0	0	0	0	0	0	0	$ -
0.38%	$ -	Water	311200-Pump Eqp Electric	311200	10131120	311.2	3,829	3,827	3,829	3,840	9,168	41,756	46,688	$ 45,337
0.38%	$ -	Water	311300-Pump Eqp Diesel	311300	10131130	311.2	221	221	221	221	669	2,666	2,648	$ 2,655
0.38%	$ -	Water	311400-Pump Eqp Hydraulic	311400	10131140	311.2	2	2	2	2	7	29	29	$ 29
0.00%	$ -	Water	311500-Pump Eqp Other	311500	10131150	311.2	0	0	0	0	0	0	0	$ -
0.41%	$ -	Water	311520-Pump Eqp-SOS & Pumping	311520	10131152	311.2	5,036	5,026	5,025	5,024	15,182	60,594	60,322	$ 60,448
0.41%	$ -	Water	311530-Pump Eqp Wtr Treatment	311530	10131153	311.3	0	0	0	0	0	0	0	$ -
0.41%	$ -	Water	311540-Pumping Equipment TD	311540	10131154	311.4	145	144	144	143	110	385	1,720	$ 1,164
0.43%	$ -	Water	320100-WT Equip Non-Media	320100	10132010	320.3	19,118	18,169	18,159	18,155	57,680	230,210	221,931	$ 226,833
0.00%	$ -	Water	320200-WT Equip Filter Media	320200	10132010	320.3	0	0	0	0	0	0	0	$ -
0.00%	$ -	Water	330000-Dist Reservoirs & Standpipes	330000	10133000	330.4	0	0	0	0	0	0	0	$ -
0.41%	$ -	Water	330100-Elevated Tanks & Standpipes	330100	10133000	330.4	4,673	4,476	4,476	4,475	10,485	41,901	54,487	$ 49,569
0.00%	$ -	Water	330200-Ground Level Tanks	330200	10133000	330.4	0	0	0	0	0	0	0	$ -
0.00%	$ -	Water	330400-Clearwell	330400	10133000	330.4	0	0	0	0	0	0	0	$ -
0.22%	$ -	Water	331001-TD Mains Not Classified	331001	10133100	331.4	30,928	30,962	31,009	31,062	82,046	339,252	374,327	$ 359,697
0.22%	$ -	Water	331100-TD Mains 4in & Less	331100	10133100	331.4	1,022	1,022	1,022	1,022	3,066	12,265	12,265	$ 12,265
0.22%	$ -	Water	331200-TD Mains 6in to 8in	331200	10133100	331.4	3,822	3,822	3,822	3,822	11,467	45,867	45,866	$ 45,867
0.22%	$ -	Water	331300-TD Mains 10in to 16in	331300	10133100	331.4	1,668	1,668	1,668	1,668	5,003	20,014	20,014	$ 20,014
0.22%	$ -	Water	331400-TD Mains 18in & Grtr	331400	10133100	331.4	13,347	13,347	13,347	13,347	40,042	160,168	160,167	$ 160,16[illegible]
1.50%	$ -	Water	333000-Services	333000	10133300	333.4	62,992	63,231	63,489	63,738	177,989	732,718	763,547	$ 750,658
0.24%	$ -	Water	334100-Meters	334100	10133410	334.4	3,483	3,581	3,710	3,802	7,067	37,670	44,389	$ 41,650
0.25%	$ -	Water	334110-Meters Bronze Case	334110	10133410	334.4	473	473	473	473	1,422	5,683	5,674	$ 5,678
0.30%	$ -	Water	334120-Meters Plastic Case	334120	10133410	334.4	54	51	48	45	327	1,018	555	$ 748
0.26%	$ -	Water	334130-Meters Other	334130	10133410	334.4	1,306	1,300	1,294	1,288	4,222	16,350	15,491	$ 15,849
0.26%	$ -	Water	334131-Meter Reading Units	334131	10133410	334.4	68	68	68	68	204	817	817	$ 817
0.25%	$ -	Water	334200-Meter Installations	334200	10133420	334.4	3,842	3,842	3,842	3,841	11,517	46,116	46,162	$ 46,105
0.25%	$ -	Water	334300-Meter Vaults	334300	10133410	334.4	105	105	105	105	315	1,260	1,361	$ 1,259
0.30%	$ -	Water	335000-Hydrants	335000	10133500	335.4	3,665	3,675	3,687	3,700	10,262	42,353	44,473	$ 43,583
0.00%	$ -	Water	339100-Other P/E-Intangible	339100	10133910	339.1	0	0	0	0	0	0	0	$ -
0.00%	$ -	Water	339600-Other P/E-CPS	339600	10133910	339.1	0	0	0	0	0	0	0	$ -

Kentucky American Water
Case No. 2012-00520
Cost of Removal Expense by Month, September 2012 - December 2014
Automatically calculates: Prior Month UPIS Balance less UPIS not depreciating X (Annual Cost of Removal Rate/12)
Workpaper # W/P - 4-3
Excel Reference Exhibits\Rate Base\[Rate Base KY Capital through 12_31_14.xlsx]Actv COR

	Apr-14	May-14	Jun-14	Jul-14	Oct-Dec 2012 Expense	2013 Expense	2014 Expense	Forecast Aug 13-Jul 14 Expense
Water Cost of Removal Expense	$ 179,683	$ 178,876	$ 179,290	$ 179,695	$ 507,541.86	$ 2,077,029.30	$ 2,160,740.41	$ 2,128,415
Less CIAC Cost of Removal Credit	$ 43,831	$ 43,929	$ 44,024	$ 44,125	$ 124,479.11	$ 514,319.20	$ 528,979.57	$ 523,584
Net Cost of Removal Expense:	$ 135,851	$ 134,947	$ 135,265	$ 135,570	$ 383,063	$ 1,562,710	$ 1,631,761	$ 1,604,831

Annual Cost of Removal Rate	UPIS Not Depreciating	Utility	Account	Util. Plant Account	SAP G/L Account	NARUC Acct	Apr-14	May-14	Jun-14	Jul-14	Oct-Dec 2012 Expense	2013 Expense	2014 Expense	Forecast Expense
0.00%	$ 103,460	Water	340100-Office Furniture & Equip	340100	10134010	340.5	0	0	0	0	0	0	0	$ -
0.00%	$ 11,522	Water	340210-Comp & Periph Mainframe	340210	10134010	340.5	0	0	0	0	0	0	0	$ -
0.00%	$ 414,948	Water	340220-Comp & Periph Personal	340220	10134010	340.5	0	0	0	0	0	0	0	$ -
0.00%	$ 88,579	Water	340230-Comp & Periph Other	340230	10134010	340.5	0	0	0	0	0	0	0	$ -
0.00%	$ -	Water	340240-Comp & Periph Capital Lease	340240	10134010	340.5	0	0	0	0	0	0	0	$ -
0.00%	$ 3,459,484	Water	340300-Computer Software	340300	10134010	340.5	0	0	0	0	0	0	0	$ -
0.00%	$ 400	Water	340320-Comp Software Personal	340320	10134010	340.5	0	0	0	0	0	0	0	$ -
0.00%	$ -	Water	340325-Comp Software Customized	340325	10134010	340.5	0	0	0	0	0	0	0	$ -
0.00%	$ 527,874	Water	340330-Comp Software Other	340330	10134010	340.5	0	0	0	0	0	0	0	$ -
0.00%	$ 4,285	Water	340500-Other Office Equipment	340500	10134010	340.5	0	0	0	0	0	0	0	$ -
-0.38%	$ -	Water	341100-Trans Equip Lt Duty Trks	341100	10134100	341.5	(605)	(597)	(594)	(591)	(2,014)	(7,721)	(7,291)	$ (7,447)
-0.41%	$ -	Water	341200-Trans Equip Hvy Duty Trks	341200	10134100	341.5	(643)	(641)	(644)	(648)	(1,802)	(7,448)	(7,950)	$ (7,716)
-1.50%	$ 96,396	Water	341300-Trans Equip Autos	341300	10134100	341.5	(289)	(285)	(301)	(320)	(208)	(2,062)	(4,469)	$ (3,374)
0.00%	$ -	Water	341400-Trans Equip Other	341400	10134100	341.5	0	0	0	0	0	0	0	$ -
0.00%	$ 2,268	Water	342000-Stores Equipment	342000	10134200	342.5	0	0	0	0	0	0	0	$ -
0.00%	$ 167,786	Water	343000-Tools,Shop,Garage Equip	343000	10134300	343.5	0	0	0	0	0	0	0	$ -
0.00%	$ 121,286	Water	344000-Laboratory Equipment	344000	10134400	344.5	0	0	0	0	0	0	0	$ -
-0.38%	$ -	Water	345000-Power Operated Equipment	345000	10134500	345.5	(456)	(455)	(454)	(454)	(1,391)	(5,520)	(5,448)	$ (5,479)
0.00%	$ 189,097	Water	346100-Comm Equip Non-Telephone	346100	10134600	346.5	0	0	0	0	0	0	0	$ -
0.00%	$ -	Water	346190-Remote Control & Instrument	346190	10134600	346.5	0	0	0	0	0	0	0	$ -
0.00%	$ -	Water	346200-Comm Equip Telephone	346200	10134600	346.5	0	0	0	0	0	0	0	$ -
0.00%	$ 87,357	Water	347000-Misc Equipment	347000	10134700	347.5	0	0	0	0	0	0	0	$ -
0.00%	$ -	Water	348000-Other Tangible Property	348000	10134800	348.5	0	0	0	0	0	0	0	$ -
0.00%	$ -	Water	354200-WW Struct & Imp Collection	354200	10135420	354.2	0	0	0	0	0	0	0	$ -
0.00%	$ -	Water	340315-Comp Software Specia	340315	10134010	C3405	0	0	0	0	0	0	0	$ -
0.00%	$ -	Water	339300-Other P/E-Treatment	339300	10133930	C3393	0	0	0	0	0	0	0	$ -
						Water Cost of Removal Expense	179,683	178,876	179,290	179,695	507,542	2,077,029	2,160,740	2,128,415

W/P - 1-8
Exhibits\Taxes\[KY Deferred Taxes 2012-2014.xlsx]Schedule

Kentucky American Water Company
Case No. 2012-00520
Pro Forma Adjustment of Deferred Income Taxes
For the 13 Month Average July 31, 2013 - July 31, 2014

Witness Responsible:
Type of Filing: __X__ Original _____ Updated _____ Revised

Line No.	Description	Base Year at 3/31/2013	Adjustments	Reference	Forecast Year at 7/31/2014
1	Deferred Taxes on UPIS	$53,417,420			
2	Deferred Taxes on Deferred Debits	616,164		W/P - 1-11	
3	Deferred Taxes on Deferred Maintenance	1,255,149		W/P - 1-10	
4	**Base Year for the 12 Months Ended 3/31/2013**	$ 55,288,733			$ 55,288,733
5					
7					
8	**Adjustments:**				
9	Adjustment due to change in account balance - UPIS		3,152,038		
10	Adjustment due to change in account balance - Deferred Debits		(645,770)	W/P - 1-11	
11	Adjustment due to change in account balance - Deferred Maintenance		(782,695)	W/P - 1-10	
12	**Total Adjustments:**		$ 1,723,573		1,723,573
13					
14					
15	**Forecasted Year at Present Rates**				$ 57,012,307
16					
17					
18					
19					
20					
21					
22					

W/P - 1-8
Exhibits\Taxes\[KY Deferred Taxes 2012-2014.xlsx]Summary

KENTUCKY-AMERICAN WATER COMPANY
DEFERRED INCOME TAXES
Case No. 2012-00520

Deferred Debits

	Base	Forecasted	Avg Forecast
Deferred Taxes			
SIT Liability	95,038	(6,279)	(4,567)
FIT Liability	521,126	(34,429)	(25,039)
Total	616,164	(40,708)	(29,606)

Deferred Maintenance

	Base	Forecasted	Avg Forecast
Deferred Taxes			
SIT Liability	193,596	97,900	72,872
FIT Liability	1,061,553	536,819	399,582
Total	1,255,149	634,719	472,454

Deferred Tax Info for UPIS

	Base	Forecasted	Avg Forecast
Deferred Taxes			
SIT & FIT Liability	57,695,166	62,686,089	60,661,849
Subtotal	57,695,166	62,686,089	60,661,849
Reg Assets/Liab	(4,277,745)	(3,920,470)	(4,092,391)
Total	53,417,420	58,765,619	56,569,458

Kentucky-American Water Company W/P - 1-8
Deferred Taxes and Regulatory Assets/Liabilities Exhibits\Taxes\[KY Deferred Taxes 2012-2014.xlsx]Deferred Taxes UPIS
Related to UPIS Investment
Case No. 2012-00520

	Change in Balances										
Month	Book Basis	Tax Basis Federal	**Net Change vs Book Federal**	Tax Basis State	**Net Change vs Book State**	Resulting SIT Deferred Expense	Resulting FIT Deferred Expense	**Accumulated Deferred SIT**	**Accumulated Deferred FIT**	Total Accumulated Deferred Taxes	**Regulatory Assets / Liability**
Balance 09/12								**$7,309,097**	**$48,124,320**	55,433,418	**(4,319,010)**
Oct-12	$558,747	($397,458)	**$956,205**	($488,070)	**$1,046,818**	$62,809	$312,689	**7,371,906**	**48,437,009**	55,808,916	**(4,310,759)**
Nov-12	1,006,954	(164,559)	**1,171,513**	(268,584)	**$1,275,538**	$76,532	383,243	**7,448,438**	**48,820,252**	56,268,691	**(4,305,909)**
Dec-12	2,623,679	371,703	**2,251,976**	$226,068	**$2,397,611**	$143,857	737,842	**7,592,295**	**49,558,094**	57,150,390	**(4,306,885)**
Jan-13	294,963	(76,752)	**371,715**	(231,372)	**$526,335**	$31,580	119,047	**7,623,875**	**49,677,141**	57,301,017	**(4,299,040)**
Feb-13	305,689	(406,576)	**712,265**	($561,099)	**$866,788**	$52,007	231,090	**7,675,882**	**49,908,231**	57,584,114	**(4,288,548)**
Mar-13	663,852	393,864	**269,988**	239,341	**$424,511**	$25,471	85,581	**7,701,353**	**49,993,812**	57,695,166	**(4,277,745)**
Apr-13	4,022,031	3,512,126	**509,905**	$3,357,602	**$664,428**	$39,866	164,514	**7,741,219**	**50,158,326**	57,899,546	**(4,262,543)**
May-13	6,402,559	5,456,756	**945,803**	5,302,283	**$1,100,276**	$66,017	307,925	**7,807,236**	**50,466,251**	58,273,488	**(4,237,325)**
Jun-13	965,787	334,433	**631,354**	$180,110	**$785,677**	$47,141	204,474	**7,854,377**	**50,670,725**	58,525,103	**(4,214,860)**
Jul-13	597,770	31,807	**565,962**	(122,395)	**$720,164**	$43,210	182,963	**7,897,587**	**50,853,688**	58,751,276	**(4,197,305)**
Aug-13	482,698	(175,154)	**657,853**	(406,357)	**$889,055**	$53,343	211,578	**7,950,930**	**51,065,266**	59,016,197	**(4,189,833)**
Sep-13	643,085	(12,207)	**655,291**	(243,881)	**$886,966**	$53,218	210,726	**8,004,148**	**51,275,992**	59,280,141	**(4,186,007)**
Oct-13	282,328	(430,130)	**712,458**	(662,422)	**$944,750**	$56,685	229,520	**8,060,833**	**51,505,512**	59,566,346	**(4,186,736)**
Nov-13	216,954	(501,828)	**718,782**	(735,133)	**$952,086**	$57,125	231,580	**8,117,958**	**51,737,092**	59,855,051	**(4,189,535)**
Dec-13	14,539,784	13,075,653	**1,464,130**	12,840,880	**$1,698,904**	$101,934	476,769	**8,219,892**	**52,213,861**	60,433,754	**(4,154,838)**
Jan-14	(269,795)	(967,074)	**697,278**	(1,193,549)	**$923,754**	$55,425	224,649	**8,275,317**	**52,438,510**	60,713,828	**(4,117,959)**
Feb-14	224,372	(562,554)	**786,926**	(789,029)	**$1,013,401**	$60,804	254,143	**8,336,121**	**52,692,653**	61,028,775	**(4,080,779)**
Mar-14	(65,334)	(735,888)	**670,555**	(962,364)	**$897,030**	$53,822	215,856	**8,389,943**	**52,908,509**	61,298,453	**(4,044,769)**
Apr-14	49,813	(784,649)	**834,462**	(1,011,125)	**$1,060,938**	$63,656	269,782	**8,453,599**	**53,178,291**	61,631,891	**(4,010,041)**
May-14	476,883	(441,175)	**918,057**	(667,603)	**$1,144,485**	$68,669	297,286	**8,522,268**	**53,475,577**	61,997,846	**(3,976,604)**
Jun-14	427,474	(440,707)	**868,181**	(667,017)	**$1,094,490**	$65,669	280,879	**8,587,937**	**53,756,456**	62,344,394	**(3,946,211)**
Jul-14	832,224	(23,495)	**855,720**	(249,640)	**$1,081,864**	$64,912	276,783	**8,652,849**	**54,033,239**	62,686,089	**(3,920,470)**
Aug-14	226,444	(612,436)	**838,879**	(838,403)	**$1,064,846**	$63,891	271,246	**8,716,740**	**54,304,485**	63,021,226	**(3,900,055)**
Sep-14	1,097,930	259,260	**838,671**	33,749	**$1,064,181**	$63,851	271,187	**8,780,591**	**54,575,672**	63,356,264	**(3,882,677)**
Oct-14	1,624,302	701,367	**922,935**	476,094	**$1,148,208**	$68,892	298,915	**8,849,483**	**54,874,587**	63,724,071	**(3,866,104)**
Nov-14	3,879,997	2,943,018	**936,979**	2,717,934	**$1,162,063**	$69,724	303,539	**8,919,207**	**55,178,126**	64,097,334	**(3,841,719)**
Dec-14	2,872,254	1,291,157	**1,581,097**	1,066,169	**$1,806,085**	$108,365	515,456	**9,027,572**	**55,693,582**	64,721,155	**(3,811,448)**
Forecasted Deferred Tax Expense UPIS						$755,262	$3,179,551				

	Accumulated Deferred SIT	Accumulated Deferred FIT	Total Accumulated Deferred Taxes	Regulatory Assets / Liability	**Total Def Taxes**
Balance Deferred Income Taxes - End of Base Period	**$7,701,353**	**$49,993,812**	$57,695,166	**($4,277,745)**	**$53,417,420**
Balance Deferred Income Taxes - End of Forecasted Period	**$8,652,849**	**$54,033,239**	$62,686,089	**($3,920,470)**	**$58,765,619**
Average Balance Deferred Income Taxes - Forecasted Period	**$8,266,876**	**$52,394,973**	$60,661,849	**($4,092,391)**	**$56,569,458**

Kentucky-American Water Company W/P - 1-8
Book Basis Property Exhibits\Taxes\[KY Deferred Taxes 2012-2014.xlsx]Book Basis
Case No. 2012-00520

Book Basis:

			Regulatory Assets						Regulatory Liabilities		
	Utility Plant in Service	Accumulated Reserve	Equity Grossup	Plant Flow Through	Other	Customer Advances	CIAC	ITC	Excess Deferred Taxes	Gross-up ITC	Total
Account	101000	108xxx	186030/035/055	186040	186045	252xxx	271xxx/272000	255xxx	256212/256220	256310/311/312	
Balance 09/12	**587,304,590**	**(109,885,531)**	**5,338,512**	**1,799,981**	**(362,762)**	**(13,188,685)**	**(50,576,863)**	**(815,026)**	**(1,995,469)**	**(461,252)**	**417,157,495**
Net Change	1,377,044	(657,673)	16,799	(44,592)	2,008	(135,000)	(24,439)	7,066	13,494	4,040	558,747
Oct-12	588,681,634	(110,543,204)	5,355,311	1,755,389	(360,754)	(13,323,685)	(50,601,301)	(807,960)	(1,981,975)	(457,212)	417,716,243
Net Change	1,707,168	(661,571)	20,200	(44,592)	2,008	(16,696)	(24,163)	7,066	13,494	4,040	1,006,954
Nov-12	590,388,802	(111,204,775)	5,375,511	1,710,797	(358,746)	(13,340,381)	(50,625,464)	(800,894)	(1,968,481)	(453,172)	418,723,197
Net Change	3,279,175	(664,650)	26,026	(44,592)	2,008	25,000	(23,887)	7,066	13,494	4,040	2,623,679
Dec-12	593,667,977	(111,869,426)	5,401,538	1,666,205	(356,738)	(13,315,381)	(50,649,352)	(793,828)	(1,954,987)	(449,132)	421,346,876
Net Change	1,032,876	(670,732)	18,843	(46,230)	2,008	(85,000)	18,598	7,066	13,494	4,040	294,963
Jan-13	594,700,853	(112,540,158)	5,420,381	1,619,975	(354,730)	(13,400,381)	(50,630,753)	(786,762)	(1,941,493)	(445,092)	421,641,839
Net Change	2,381,433	(672,604)	16,196	(46,230)	2,008	(110,000)	(1,289,714)	7,066	13,494	4,040	305,689
Feb-13	597,082,286	(113,212,762)	5,436,576	1,573,745	(352,722)	(13,510,381)	(51,920,467)	(779,696)	(1,927,999)	(441,052)	421,947,528
Net Change	1,357,219	(676,028)	15,885	(46,230)	2,008	(35,000)	21,398	7,066	13,494	4,040	663,852
Mar-13	598,439,504	(113,888,790)	5,452,461	1,527,515	(350,714)	(13,545,381)	(51,899,069)	(772,630)	(1,914,505)	(437,012)	422,611,380
Net Change	4,756,751	(682,969)	11,486	(46,230)	2,008	(23,000)	(20,614)	7,066	13,494	4,040	4,022,031
Apr-13	603,196,255	(114,571,758)	5,463,947	1,481,285	(348,706)	(13,568,381)	(51,919,684)	(765,564)	(1,901,011)	(432,972)	426,633,411
Net Change	7,157,117	(690,758)	1,471	(46,230)	2,008	(30,000)	(15,649)	7,066	13,494	4,040	6,402,559
May-13	610,353,372	(115,262,516)	5,465,418	1,435,055	(346,698)	(13,598,381)	(51,935,333)	(758,498)	(1,887,517)	(428,932)	433,035,970
Net Change	1,855,326	(789,378)	4,222	(46,230)	2,008	(60,000)	(24,762)	7,066	13,494	4,040	965,787
Jun-13	612,208,698	(116,051,894)	5,469,640	1,388,825	(344,690)	(13,658,381)	(51,960,094)	(751,432)	(1,874,023)	(424,892)	434,001,757
Net Change	1,445,743	(795,528)	9,134	(46,230)	2,008	(55,000)	13,042	7,066	13,494	4,040	597,770
Jul-13	613,654,441	(116,847,422)	5,478,774	1,342,595	(342,682)	(13,713,381)	(51,947,052)	(744,366)	(1,860,529)	(420,852)	434,599,526
Net Change	1,241,475	(708,177)	19,215	(46,230)	2,008	(40,000)	(10,192)	7,066	13,494	4,040	482,698
Aug-13	614,895,916	(117,555,599)	5,497,989	1,296,365	(340,674)	(13,753,381)	(51,957,244)	(737,300)	(1,847,035)	(416,812)	435,082,225
Net Change	1,415,228	(710,450)	22,862	(46,230)	2,008	(55,000)	(9,934)	7,066	13,494	4,040	643,085
Sep-13	616,311,144	(118,266,049)	5,520,851	1,250,135	(338,666)	(13,808,381)	(51,967,178)	(730,234)	(1,833,541)	(412,772)	435,725,309
Net Change	1,048,142	(713,934)	27,418	(46,230)	2,008	(50,000)	(9,675)	7,066	13,494	4,040	282,328
Oct-13	617,359,286	(118,979,984)	5,548,269	1,203,905	(336,658)	(13,858,381)	(51,976,853)	(723,168)	(1,820,047)	(408,732)	436,007,637
Net Change	1,095,211	(715,525)	29,487	(46,230)	2,008	(60,000)	(112,597)	7,066	13,494	4,040	216,954
Nov-13	618,454,497	(119,695,508)	5,577,755	1,157,675	(334,650)	(13,918,381)	(52,089,450)	(716,102)	(1,806,553)	(404,692)	436,224,590
Net Change	15,307,027	(717,163)	(8,008)	(46,230)	2,008	(51,000)	28,551	7,066	13,494	4,040	14,539,784
Dec-13	633,761,524	(120,412,672)	5,569,747	1,111,445	(332,642)	(13,969,381)	(52,060,900)	(709,036)	(1,793,059)	(400,652)	450,764,374
Net Change	557,094	(736,126)	(8,187)	(48,235)	2,008	(85,000)	24,050	7,066	13,494	4,040	(269,795)
Jan-14	634,318,618	(121,148,798)	5,561,560	1,063,210	(330,634)	(14,054,381)	(52,036,849)	(701,970)	(1,779,565)	(396,612)	450,494,579
Net Change	992,086	(736,539)	(8,487)	(48,235)	2,008	(30,000)	28,938	7,066	13,494	4,040	224,372
Feb-14	635,310,704	(121,885,336)	5,553,073	1,014,975	(328,626)	(14,084,381)	(52,007,911)	(694,904)	(1,766,071)	(392,572)	450,718,951
Net Change	693,239	(739,066)	(7,317)	(48,235)	2,008	(15,000)	24,438	7,066	13,494	4,040	(65,334)
Mar-14	636,003,943	(122,624,403)	5,545,756	966,740	(326,618)	(14,099,381)	(51,983,473)	(687,838)	(1,752,577)	(388,532)	450,653,617
Net Change	(2,472,138)	2,597,187	(6,035)	(48,235)	2,008	(30,000)	(17,574)	7,066	13,494	4,040	49,813
Apr-14	633,531,805	(120,027,216)	5,539,721	918,505	(324,610)	(14,129,381)	(52,001,047)	(680,772)	(1,739,083)	(384,492)	450,703,430
Net Change	1,283,102	(737,240)	(4,744)	(48,235)	2,008	(30,000)	(12,608)	7,066	13,494	4,040	476,883
May-14	634,814,907	(120,764,456)	5,534,977	870,270	(322,602)	(14,159,381)	(52,013,655)	(673,706)	(1,725,589)	(380,452)	451,180,313
Net Change	1,237,079	(739,557)	(1,700)	(48,235)	2,008	(25,000)	(21,721)	7,066	13,494	4,040	427,474
Jun-14	636,051,986	(121,504,013)	5,533,278	822,035	(320,594)	(14,184,381)	(52,035,377)	(666,640)	(1,712,095)	(376,412)	451,607,786
Net Change	1,631,450	(741,633)	2,951	(48,235)	2,008	(55,000)	16,083	7,066	13,494	4,040	832,224
Jul-14	637,683,436	(122,245,646)	5,536,229	773,800	(318,586)	(14,239,381)	(52,019,294)	(659,574)	(1,698,601)	(372,372)	452,440,011
Net Change	1,031,683	(744,739)	8,279	(48,235)	2,008	(40,000)	(7,152)	7,066	13,494	4,040	226,444
Aug-14	638,715,118	(122,990,385)	5,544,508	725,565	(316,578)	(14,279,381)	(52,026,446)	(652,508)	(1,685,107)	(368,332)	452,666,454
Net Change	1,895,794	(745,658)	11,315	(48,235)	2,008	(35,000)	(6,893)	7,066	13,494	4,040	1,097,930
Sep-14	640,610,912	(123,736,043)	5,555,822	677,330	(314,570)	(14,314,381)	(52,033,339)	(645,442)	(1,671,613)	(364,292)	453,764,385
Net Change	2,458,565	(748,121)	12,120	(48,235)	2,008	(70,000)	(6,635)	7,066	13,494	4,040	1,624,302
Oct-14	643,069,477	(124,484,164)	5,567,942	629,095	(312,562)	(14,384,381)	(52,039,974)	(638,376)	(1,658,119)	(360,252)	455,388,686
Net Change	4,817,961	(751,088)	4,308	(48,235)	2,008	(60,000)	(109,557)	7,066	13,494	4,040	3,879,997
Nov-14	647,887,438	(125,235,252)	5,572,250	580,860	(310,554)	(14,444,381)	(52,149,531)	(631,310)	(1,644,625)	(356,212)	459,268,683
Net Change	3,593,550	(756,202)	(1,578)	(48,235)	2,008	(11,000)	69,111	7,066	13,494	4,040	2,872,254
Dec-14	651,480,989	(125,991,454)	5,570,672	532,625	(308,546)	(14,455,381)	(52,080,419)	(624,244)	(1,631,131)	(352,172)	462,140,938

Kentucky-American Water Company W/P - 1-8

Inverted Data for Calculation of Tax Basis Property Exhibits\Taxes\[KY Deferred Taxes 2012-2014.xlsx]Book Basis

Month	Bk Basis	Retirements	Net Bk Basis	Bk Depr	Retirements	Bk Reserve	NT Customer Advances	NT CIAC	Amort CIAC	Net
Oct-12	1,609,136	232,092	1,377,044	(889,766)	232,092	(657,673)	(135,000)	(150,080)	125,641	(24,439)
Nov-12	1,939,260	232,092	1,707,168	(893,663)	232,092	(661,571)	(16,696)	(150,080)	125,917	(24,163)
Dec-12	3,511,267	232,092	3,279,175	(896,743)	232,092	(664,650)	25,000	(150,080)	126,193	(23,887)
Jan-13	1,264,968	232,092	1,032,876	(902,824)	232,092	(670,732)	(85,000)	(107,870)	126,468	18,598
Feb-13	2,613,525	232,092	2,381,433	(904,696)	232,092	(672,604)	(110,000)	(1,416,380)	126,666	(1,289,714)
Mar-13	1,589,311	232,092	1,357,219	(908,120)	232,092	(676,028)	(35,000)	(107,870)	129,268	21,398
Apr-13	4,988,843	232,092	4,756,751	(915,061)	232,092	(682,969)	(23,000)	(150,080)	129,466	(20,614)
May-13	7,389,209	232,092	7,157,117	(922,850)	232,092	(690,758)	(30,000)	(145,390)	129,741	(15,649)
Jun-13	2,087,418	232,092	1,855,326	(1,021,470)	232,092	(789,378)	(60,000)	(154,770)	130,008	(24,762)
Jul-13	1,677,835	232,092	1,445,743	(1,027,620)	232,092	(795,528)	(55,000)	(117,250)	130,292	13,042
Aug-13	1,473,567	232,092	1,241,475	(940,269)	232,092	(708,177)	(40,000)	(140,700)	130,508	(10,192)
Sep-13	1,647,321	232,092	1,415,228	(942,542)	232,092	(710,450)	(55,000)	(140,700)	130,766	(9,934)
Oct-13	1,280,234	232,092	1,048,142	(946,027)	232,092	(713,934)	(50,000)	(140,700)	131,025	(9,675)
Nov-13	1,327,303	232,092	1,095,211	(947,617)	232,092	(715,525)	(60,000)	(243,880)	131,283	(112,597)
Dec-13	15,539,119	232,092	15,307,027	(949,256)	232,092	(717,163)	(51,000)	(103,180)	131,731	28,551
Jan-14	789,186	232,092	557,094	(968,218)	232,092	(736,126)	(85,000)	(107,870)	131,920	24,050
Feb-14	1,224,178	232,092	992,086	(968,631)	232,092	(736,539)	(30,000)	(103,180)	132,118	28,938
Mar-14	925,331	232,092	693,239	(971,159)	232,092	(739,066)	(15,000)	(107,870)	132,308	24,438
Apr-14	1,098,975	3,571,113	(2,472,138)	(973,926)	3,571,113	2,597,187	(30,000)	(150,080)	132,506	(17,574)
May-14	1,515,194	232,092	1,283,102	(969,332)	232,092	(737,240)	(30,000)	(145,390)	132,782	(12,608)
Jun-14	1,469,171	232,092	1,237,079	(971,649)	232,092	(739,557)	(25,000)	(154,770)	133,049	(21,721)
Jul-14	1,863,542	232,092	1,631,450	(973,725)	232,092	(741,633)	(55,000)	(117,250)	133,333	16,083
Aug-14	1,263,775	232,092	1,031,683	(976,831)	232,092	(744,739)	(40,000)	(140,700)	133,548	(7,152)

Kentucky-American Water Company
Tax Basis Property
Case No. 2012-00520

W/P - 1-8
Exhibits\Taxes\[KY Deferred Taxes 2012-2014.xlsx]Tax Basis State

Tax Basis:

			Regulatory Assets						Regulatory Liabilities		
Account	Utility Plant in Service 101000	Accumulated Reserve 108xxx	Equity Grossup 185030/035/055	Plant Flow Through 185040	Other 185045	Customer Advances 252xxx	CIAC 271xxx/272000	ITC 255xxx	Excess Deferred Taxes 256212/256220	Gross-up ITC 256310/311/312	Total
Balance 09/12	**481,826,908**	**(214,428,459)**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**267,398,449**
Net Change	293,114	(781,184)									(488,070)
Oct-12	482,120,021	(215,209,643)	0	0	0	0	0	0	0	0	266,910,379
Net Change	539,080	(807,663)									(268,584)
Nov-12	482,659,101	(216,017,306)	0	0	0	0	0	0	0	0	266,641,795
Net Change	1,115,248	(889,180)									226,068
Dec-12	483,774,349	(216,906,487)	0	0	0	0	0	0	0	0	266,867,863
Net Change	620,356	(851,727)									(231,372)
Jan-13	484,394,705	(217,758,214)	0	0	0	0	0	0	0	0	266,636,491
Net Change	295,832	(856,931)									(561,099)
Feb-13	484,690,537	(218,615,145)	0	0	0	0	0	0	0	0	266,075,392
Net Change	1,099,109	(859,769)									239,341
Mar-13	485,789,646	(219,474,914)	0	0	0	0	0	0	0	0	266,314,732
Net Change	4,227,476	(869,873)									3,357,602
Apr-13	490,017,122	(220,344,787)	0	0	0	0	0	0	0	0	269,672,335
Net Change	6,415,491	(1,113,208)									5,302,283
May-13	496,432,612	(221,457,995)	0	0	0	0	0	0	0	0	274,974,617
Net Change	1,302,375	(1,122,265)									180,110
Jun-13	497,734,987	(222,580,260)	0	0	0	0	0	0	0	0	275,154,727
Net Change	1,020,440	(1,142,834)									(122,395)
Jul-13	498,755,427	(223,723,094)	0	0	0	0	0	0	0	0	275,032,332
Net Change	825,183	(1,231,540)									(406,357)
Aug-13	499,580,609	(224,954,634)	0	0	0	0	0	0	0	0	274,625,976
Net Change	1,003,139	(1,247,020)									(243,881)
Sep-13	500,583,748	(226,201,654)	0	0	0	0	0	0	0	0	274,382,094
Net Change	602,075	(1,264,497)									(662,422)
Oct-13	501,185,823	(227,466,151)	0	0	0	0	0	0	0	0	273,719,672
Net Change	561,640	(1,296,772)									(735,133)
Nov-13	501,747,463	(228,762,923)	0	0	0	0	0	0	0	0	272,984,540
Net Change	14,443,667	(1,602,787)									12,840,880
Dec-13	516,191,130	(230,365,710)	0	0	0	0	0	0	0	0	285,825,419
Net Change	212,480	(1,406,030)									(1,193,549)
Jan-14	516,403,610	(231,771,740)	0	0	0	0	0	0	0	0	284,631,870
Net Change	619,627	(1,408,656)									(789,029)
Feb-14	517,023,237	(233,180,396)	0	0	0	0	0	0	0	0	283,842,841
Net Change	456,165	(1,418,528)									(962,364)
Mar-14	517,479,402	(234,598,925)	0	0	0	0	0	0	0	0	282,880,477
Net Change	(2,930,193)	1,919,068									(1,011,125)
Apr-14	514,549,209	(232,679,857)	0	0	0	0	0	0	0	0	281,869,353
Net Change	755,794	(1,423,397)									(667,603)
May-14	515,305,004	(234,103,254)	0	0	0	0	0	0	0	0	281,201,750
Net Change	760,434	(1,427,451)									(667,017)
Jun-14	516,065,438	(235,530,704)	0	0	0	0	0	0	0	0	280,534,734
Net Change	1,192,764	(1,442,404)									(249,640)
Jul-14	517,258,202	(236,973,108)	0	0	0	0	0	0	0	0	280,285,093
Net Change	606,988	(1,445,391)									(838,403)
Aug-14	517,865,190	(238,418,499)	0	0	0	0	0	0	0	0	279,446,691
Net Change	1,486,515	(1,452,766)									33,749
Sep-14	519,351,704	(239,871,264)	0	0	0	0	0	0	0	0	279,480,440
Net Change	1,949,196	(1,473,102)									476,094
Oct-14	521,300,900	(241,344,366)	0	0	0	0	0	0	0	0	279,956,533
Net Change	4,234,525	(1,516,591)									2,717,934
Nov-14	525,535,425	(242,860,958)	0	0	0	0	0	0	0	0	282,674,467
Net Change	2,638,366	(1,572,197)									1,066,169
Dec-14	528,173,791	(244,433,155)	0	0	0	0	0	0	0	0	283,740,636

Kentucky-American Water Company
Inverted Data for Calculation of Tax Basis Property

Month	Tx Basis	Retirements	Net Tx Basis	Tx Depr	Retirements	Net Reserve
Oct-12	525,206	232,092	293,114	(1,013,276)	232,092	(781,184)
Nov-12	771,172	232,092	539,080	(1,039,756)	232,092	(807,663)
Dec-12	1,347,341	232,092	1,115,248	(1,121,273)	232,092	(889,180)
Jan-13	852,448	232,092	620,356	(1,083,819)	232,092	(851,727)
Feb-13	527,924	232,092	295,832	(1,089,023)	232,092	(856,931)
Mar-13	1,331,201	232,092	1,099,109	(1,091,861)	232,092	(859,769)
Apr-13	4,459,568	232,092	4,227,476	(1,101,965)	232,092	(869,873)
May-13	6,647,583	232,092	6,415,491	(1,345,300)	232,092	(1,113,208)
Jun-13	1,534,467	232,092	1,302,375	(1,354,357)	232,092	(1,122,265)
Jul-13	1,252,532	232,092	1,020,440	(1,374,926)	232,092	(1,142,834)
Aug-13	1,057,275	232,092	825,183	(1,463,632)	232,092	(1,231,540)
Sep-13	1,235,231	232,092	1,003,139	(1,479,112)	232,092	(1,247,020)
Oct-13	834,167	232,092	602,075	(1,496,589)	232,092	(1,264,497)
Nov-13	793,732	232,092	561,640	(1,528,864)	232,092	(1,296,772)
Dec-13	14,675,759	232,092	14,443,667	(1,834,879)	232,092	(1,602,787)
Jan-14	444,573	232,092	212,480	(1,638,122)	232,092	(1,406,030)
Feb-14	851,719	232,092	619,627	(1,640,748)	232,092	(1,408,656)
Mar-14	688,257	232,092	456,165	(1,650,621)	232,092	(1,418,528)
Apr-14	640,920	3,571,113	(2,930,193)	(1,652,045)	3,571,113	1,919,068
May-14	987,886	232,092	755,794	(1,655,489)	232,092	(1,423,397)
Jun-14	992,526	232,092	760,434	(1,659,543)	232,092	(1,427,451)
Jul-14	1,424,856	232,092	1,192,764	(1,674,496)	232,092	(1,442,404)
Aug-14	839,080	232,092	606,988	(1,677,483)	232,092	(1,445,391)
Sep-14	1,718,607	232,092	1,486,515	(1,684,858)	232,092	(1,452,766)
Oct-14	2,181,288	232,092	1,949,196	(1,705,194)	232,092	(1,473,102)
Nov-14	4,466,617	232,092	4,234,525	(1,748,683)	232,092	(1,516,591)
Dec-14	2,870,458	232,092	2,638,366	(1,804,289)	232,092	(1,572,197)
	55,952,391	9,605,507	46,346,884	(39,610,204)	9,605,507	(30,004,696)

Kentucky-American Water Company W/P - 1-8
Tax Basis Property Exhibits\Taxes\[KY Deferred Taxes 2012-2014.xlsx]Tax Basis Federal
Case No. 2012-00520

Tax Basis:

			Regulatory Assets						Regulatory Liabilities		
	Utility Plant in Service	Accumulated Reserve	Equity Grossup	Plant Flow Through	Other	Customer Advances	CIAC	ITC	Excess Deferred Taxes	Gross-up ITC	Total
Account	101000	108xxx	185030/035/055	185040	185045	252xxx	271xxx/272000	255xxx	256212/256220	256310/311/312	
Balance 09/12	**459,752,366**	**(208,381,355)**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**251,371,011**
Net Change	293,114	(690,571)									(397,458)
Oct-12	460,045,480	(209,071,926)	0	0	0	0	0	0	0	0	250,973,553
Net Change	539,080	(703,639)									(164,559)
Nov-12	460,584,559	(209,775,565)	0	0	0	0	0	0	0	0	250,808,994
Net Change	1,115,248	(743,546)									371,703
Dec-12	461,699,808	(210,519,111)	0	0	0	0	0	0	0	0	251,180,697
Net Change	620,356	(697,107)									(76,752)
Jan-13	462,320,163	(211,216,218)	0	0	0	0	0	0	0	0	251,103,945
Net Change	295,832	(702,408)									(406,576)
Feb-13	462,615,995	(211,918,626)	0	0	0	0	0	0	0	0	250,697,369
Net Change	1,099,109	(705,245)									393,864
Mar-13	463,715,104	(212,623,871)	0	0	0	0	0	0	0	0	251,091,234
Net Change	4,227,476	(715,350)									3,512,126
Apr-13	467,942,580	(213,339,221)	0	0	0	0	0	0	0	0	254,603,359
Net Change	6,415,491	(958,735)									5,456,756
May-13	474,358,070	(214,297,955)	0	0	0	0	0	0	0	0	260,060,115
Net Change	1,302,375	(967,941)									334,433
Jun-13	475,660,445	(215,265,897)	0	0	0	0	0	0	0	0	260,394,548
Net Change	1,020,440	(988,632)									31,807
Jul-13	476,680,885	(216,254,529)	0	0	0	0	0	0	0	0	260,426,356
Net Change	825,183	(1,000,337)									(175,154)
Aug-13	477,506,068	(217,254,866)	0	0	0	0	0	0	0	0	260,251,201
Net Change	1,003,139	(1,015,346)									(12,207)
Sep-13	478,509,207	(218,270,212)	0	0	0	0	0	0	0	0	260,238,995
Net Change	602,075	(1,032,205)									(430,130)
Oct-13	479,111,281	(219,302,417)	0	0	0	0	0	0	0	0	259,808,865
Net Change	561,640	(1,063,468)									(501,828)
Nov-13	479,672,921	(220,365,885)	0	0	0	0	0	0	0	0	259,307,036
Net Change	14,443,667	(1,368,014)									13,075,653
Dec-13	494,116,588	(221,733,898)	0	0	0	0	0	0	0	0	272,382,690
Net Change	212,480	(1,179,554)									(967,074)
Jan-14	494,329,069	(222,913,453)	0	0	0	0	0	0	0	0	271,415,616
Net Change	619,627	(1,182,180)									(562,554)
Feb-14	494,948,695	(224,095,633)	0	0	0	0	0	0	0	0	270,853,062
Net Change	456,165	(1,192,053)									(735,888)
Mar-14	495,404,860	(225,287,686)	0	0	0	0	0	0	0	0	270,117,174
Net Change	(2,930,193)	2,145,544									(784,649)
Apr-14	492,474,668	(223,142,142)	0	0	0	0	0	0	0	0	269,332,525
Net Change	755,794	(1,196,969)									(441,175)
May-14	493,230,462	(224,339,112)	0	0	0	0	0	0	0	0	268,891,350
Net Change	760,434	(1,201,142)									(440,707)
Jun-14	493,990,896	(225,540,253)	0	0	0	0	0	0	0	0	268,450,643
Net Change	1,192,764	(1,216,259)									(23,495)
Jul-14	495,183,660	(226,756,513)	0	0	0	0	0	0	0	0	268,427,147
Net Change	606,988	(1,219,424)									(612,436)
Aug-14	495,790,648	(227,975,936)	0	0	0	0	0	0	0	0	267,814,712
Net Change	1,486,515	(1,227,255)									259,260
Sep-14	497,277,162	(229,203,191)	0	0	0	0	0	0	0	0	268,073,971
Net Change	1,949,196	(1,247,828)									701,367
Oct-14	499,226,358	(230,451,020)	0	0	0	0	0	0	0	0	268,775,338
Net Change	4,234,525	(1,291,507)									2,943,018
Nov-14	503,460,883	(231,742,527)	0	0	0	0	0	0	0	0	271,718,357
Net Change	2,638,366	(1,347,209)									1,291,157
Dec-14	506,099,250	(233,089,736)	0	0	0	0	0	0	0	0	273,009,514

Kentucky-American Water Company
Inverted Data for Calculation of Tax Basis Property

Month	Tx Basis	Retirements	Net Tx Basis	Tx Depr	Retirements	Net Reserve
Oct-12	525,206	232,092	293,114	(922,663)	232,092	(690,571)
Nov-12	771,172	232,092	539,080	(935,731)	232,092	(703,639)
Dec-12	1,347,341	232,092	1,115,248	(975,638)	232,092	(743,546)
Jan-13	852,448	232,092	620,356	(929,200)	232,092	(697,107)
Feb-13	527,924	232,092	295,832	(934,500)	232,092	(702,408)
Mar-13	1,331,201	232,092	1,099,109	(937,337)	232,092	(705,245)
Apr-13	4,459,568	232,092	4,227,476	(947,442)	232,092	(715,350)
May-13	6,647,583	232,092	6,415,491	(1,190,827)	232,092	(958,735)
Jun-13	1,534,467	232,092	1,302,375	(1,200,034)	232,092	(967,941)
Jul-13	1,252,532	232,092	1,020,440	(1,220,724)	232,092	(988,632)
Aug-13	1,057,275	232,092	825,183	(1,232,429)	232,092	(1,000,337)
Sep-13	1,235,231	232,092	1,003,139	(1,247,438)	232,092	(1,015,346)
Oct-13	834,167	232,092	602,075	(1,264,297)	232,092	(1,032,205)
Nov-13	793,732	232,092	561,640	(1,295,560)	232,092	(1,063,468)
Dec-13	14,675,759	232,092	14,443,667	(1,600,106)	232,092	(1,368,014)
Jan-14	444,573	232,092	212,480	(1,411,646)	232,092	(1,179,554)
Feb-14	851,719	232,092	619,627	(1,414,273)	232,092	(1,182,180)
Mar-14	688,257	232,092	456,165	(1,424,145)	232,092	(1,192,053)
Apr-14	640,920	3,571,113	(2,930,193)	(1,425,569)	3,571,113	2,145,544
May-14	987,886	232,092	755,794	(1,429,061)	232,092	(1,196,969)
Jun-14	992,526	232,092	760,434	(1,433,234)	232,092	(1,201,142)
Jul-14	1,424,856	232,092	1,192,764	(1,448,351)	232,092	(1,216,259)
Aug-14	839,080	232,092	606,988	(1,451,516)	232,092	(1,219,424)
Sep-14	1,718,607	232,092	1,486,515	(1,459,347)	232,092	(1,227,255)

Kentucky-American Water Company			W/P - 1-8
Equity Gross-up Detail			
Case No. 2012-00520			
			Exhibits\Taxes\[KY Deferred Taxes 2012-2014.xlsx]Equity Grossup
Month	Grossup	Amort	Net
Oct-12	27,989	(11,190)	16,799
Nov-12	31,390	(11,190)	20,200
Dec-12	37,216	(11,190)	26,026
Jan-13	30,033	(11,190)	18,843
Feb-13	27,386	(11,190)	16,196
Mar-13	27,075	(11,190)	15,885
Apr-13	22,676	(11,190)	11,486
May-13	12,661	(11,190)	1,471
Jun-13	15,412	(11,190)	4,222
Jul-13	20,324	(11,190)	9,134
Aug-13	30,405	(11,190)	19,215
Sep-13	34,052	(11,190)	22,862
Oct-13	38,608	(11,190)	27,418
Nov-13	40,677	(11,190)	29,487
Dec-13	3,182	(11,190)	(8,008)
Jan-14	3,003	(11,190)	(8,187)
Feb-14	2,703	(11,190)	(8,487)
Mar-14	3,873	(11,190)	(7,317)
Apr-14	5,155	(11,190)	(6,035)
May-14	6,446	(11,190)	(4,744)
Jun-14	9,490	(11,190)	(1,700)
Jul-14	14,141	(11,190)	2,951
Aug-14	19,469	(11,190)	8,279
Sep-14	22,505	(11,190)	11,315
Oct-14	23,310	(11,190)	12,120
Nov-14	15,498	(11,190)	4,308
Dec-14	9,612	(11,190)	(1,578)

Kentucky-American Water Company W/P - 1-8

Amortization of Regulatory Assets and Liabilities Exhibits\Taxes\[KY Deferred Taxes 2012-2014.xlsx]Amort Reg Assets Liab

Case No. 2012-00520

	Amortization of Regulatory Assets and Liabilities					Additional		
	Equity	Plant Flow		Excess	ITC	Equity		
Month	Gross-up	Through	Other	Def Taxes	Gross-up	Gross-up	Total	Balance
								4,319,010
Oct-12	(11,190)	(44,592)	2,008	13,494	4,040	27,989	(8,251)	4,310,759
Nov-12	(11,190)	(44,592)	2,008	13,494	4,040	31,390	(4,850)	4,305,909
Dec-12	(11,190)	(44,592)	2,008	13,494	4,040	37,216	976	4,306,885
Jan-13	(11,190)	(46,230)	2,008	13,494	4,040	30,033	(7,845)	4,299,040
Feb-13	(11,190)	(46,230)	2,008	13,494	4,040	27,386	(10,492)	4,288,548
Mar-13	(11,190)	(46,230)	2,008	13,494	4,040	27,075	(10,803)	4,277,745
Apr-13	(11,190)	(46,230)	2,008	13,494	4,040	22,676	(15,202)	4,262,543
May-13	(11,190)	(46,230)	2,008	13,494	4,040	12,661	(25,217)	4,237,325
Jun-13	(11,190)	(46,230)	2,008	13,494	4,040	15,412	(22,466)	4,214,860
Jul-13	(11,190)	(46,230)	2,008	13,494	4,040	20,324	(17,554)	4,197,305
Aug-13	(11,190)	(46,230)	2,008	13,494	4,040	30,405	(7,473)	4,189,833
Sep-13	(11,190)	(46,230)	2,008	13,494	4,040	34,052	(3,826)	4,186,007
Oct-13	(11,190)	(46,230)	2,008	13,494	4,040	38,608	730	4,186,736
Nov-13	(11,190)	(46,230)	2,008	13,494	4,040	40,677	2,799	4,189,535
Dec-13	(11,190)	(46,230)	2,008	13,494	4,040	3,182	(34,696)	4,154,838
Jan-14	(11,190)	(48,235)	2,008	13,494	4,040	3,003	(36,880)	4,117,959
Feb-14	(11,190)	(48,235)	2,008	13,494	4,040	2,703	(37,180)	4,080,779
Mar-14	(11,190)	(48,235)	2,008	13,494	4,040	3,873	(36,010)	4,044,769
Apr-14	(11,190)	(48,235)	2,008	13,494	4,040	5,155	(34,728)	4,010,041
May-14	(11,190)	(48,235)	2,008	13,494	4,040	6,446	(33,437)	3,976,604
Jun-14	(11,190)	(48,235)	2,008	13,494	4,040	9,490	(30,393)	3,946,211
Jul-14	(11,190)	(48,235)	2,008	13,494	4,040	14,141	(25,742)	3,920,470
Aug-14	(11,190)	(48,235)	2,008	13,494	4,040	19,469	(20,414)	3,900,055
Sep-14	(11,190)	(48,235)	2,008	13,494	4,040	22,505	(17,378)	3,882,677
Oct-14	(11,190)	(48,235)	2,008	13,494	4,040	23,310	(16,573)	3,866,104
Nov-14	(11,190)	(48,235)	2,008	13,494	4,040	15,498	(24,385)	3,841,719
Dec-14	(11,190)	(48,235)	2,008	13,494	4,040	9,612	(30,271)	3,811,448

Kentucky-American Water Company					W/P - 1-8
Deferred Taxes Related to Reg Assets and Liabilities					
Case No. 2012-00520					
		Exhibits\Taxes\[KY Deferred Taxes 2012-2014.xlsx]Def Taxes Reg Asset Liab			
		Deferred	Deferred		
Month		SIT	FIT		
Oct-12		$1,322	$23,728		
Nov-12		1,322	23,728		
Dec-12		1,322	23,728		
Jan-13		1,575	25,112		
Feb-13		1,575	25,113		
Mar-13		1,575	25,113		
Apr-13		1,575	25,113		
May-13		1,575	25,113		
Jun-13		1,575	25,113		
Jul-13		1,575	25,113		
Aug-13		1,575	25,113		
Sep-13		1,575	25,113		
Oct-13		1,575	25,113		
Nov-13		1,575	25,113		
Dec-13		1,575	25,113		
Jan-14		1,884	26,809		
Feb-14		1,884	26,809		
Mar-14		1,884	26,809		
Apr-14		1,884	26,809		
May-14		1,884	26,809		
Jun-14		1,884	26,809		
Jul-14		1,884	26,809		
Forecasted Amount		$21,063	$313,228	expense to tax calc on schedule E	

1	**KENTUCKY-AMERICAN WATER COMPANY**		**Lookup**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	W/P - 1-8
2	**3/15/2013**															Exhibits\Taxes\[KY Deferred Taxes 2012-2014.xlsx]Amort RAL 2012
3	**2012 STATE & FEDERAL INCOME TAX**															
4	**REGULATORY ASSET AMORTIZATION**			2012	2012	2012	2012	2012	2012	2012	2012	2012	2012	2012	2012	
5				JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
6	Federal Income Tax rate		35.00%													
7	State Income Tax Rate		6.00%													
8	Combined Income Tax Rate		38.90%													
9																
10	Net Income		168-62	0	0	0	0	0	0	0	0	0	0	0	0	0
11	State Income Taxes		168-30	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Federal Income Taxes		168-31	0	0	0	0	0	0	0	0	0	0	0	0	0
13	State Income Taxes		168-50	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Federal Income Taxes		168-51	0	0	0	0	0	0	0	0	0	0	0	0	0
15																
16	Net Income Before Taxes			0	0	0	0	0	0	0	0	0	0	0	0	0
17																
18	Book depreciation		168-27													0
19	Tax basis depreciation															0
20																
21	**Change in Regulatory Assets/Liabilities:**															
22																
23	Reg Asset-State	(a)		0	0	0	0	0	0	0	0	0	0	0	0	0
24																
25	Reg Asset-Flow Through Depreciation	(b)	186040	(44,592)	(44,592)	(44,592)	(44,592)	(44,592)	(44,592)	(44,592)	(44,592)	(44,592)	(44,592)	(44,592)	(44,592)	(535,104)
26	Reg Asset-Other Flow Through Items	(b)	186040	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Reg Asset-Other	(b)	186045	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	24,096
28	Reg Asset-Tax Rate Change	(b)	186045	0	0	0	0	0	0	0	0	0	0	0	0	0
29																
30	Reg Liab-Excess Deferred Tax-Depreciation	(c)	256212	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	140,808
31	Reg Liab-Excess Deferred Tax-AFUDC	(c)	256212	0	0	0	0	0	0	0	0	0	0	0	0	0
32	Reg Liab-Excess Deferred Tax-Other	(c)	256212	0	0	0	0	0	0	0	0	0	0	0	0	0
33	Reg Liab-Deficit Deferred Tax	(c)	256220	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(27,564)
34	Reg Liab-Tax Rate Change	(c)	256232	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	48,684
35																
36	Reg Liab-Unamortized ITC (3%)	(d)	256310	432	432	432	432	432	432	432	432	432	432	432	432	5,184
37	Reg Liab-Unamortized ITC (4%)	(d)	256311	356	356	356	355	356	356	356	356	356	356	356	356	4,271
38	Reg Liab-Unamortized ITC (10%)	(d)	256312	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	39,024
39	Reg Liab-Unamortized ITC (6%)	(d)		0	0	0	0	0	0	0	0	0	0	0	0	0
40																
41	Deferred ITC (3%)	(e)	255.11	638	638	638	638	638	638	638	638	638	638	638	638	7,656
42	Deferred ITC (4%)	(e)	255.12	525	525	525	525	525	525	525	525	525	525	525	525	6,300
43	Deferred ITC (10%)	(e)	255.13	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	70,836
44	Deferred ITC (6%)	(e)	255.14	0	0	0	0	0	0	0	0	0	0	0	0	0
45																
46	**Net Change in Reg Assets/Liabs & ITC**			(17,984)	(17,984)	(17,984)	(17,985)	(17,984)	(17,984)	(17,984)	(17,984)	(17,984)	(17,984)	(17,984)	(17,984)	(215,809)
47																
48	**Distribution of Net Change:**															
49																
50	**Deferred SIT**	(a)		0	0	0	0	0	0	0	0	0	0	0	0	0
51		(b)		6,568	6,568	6,568	6,568	6,568	6,568	6,568	6,568	6,568	6,568	6,568	6,568	78,816
52		(c)		(4,623)	(4,623)	(4,623)	(4,623)	(4,623)	(4,623)	(4,623)	(4,623)	(4,623)	(4,624)	(4,624)	(4,624)	(55,479)
53		(d)		(624)	(624)	(624)	(624)	(624)	(624)	(624)	(623)	(623)	(622)	(622)	(622)	(7,480)
54																
55			690730	1,321	1,321	1,321	1,321	1,321	1,321	1,321	1,322	1,322	1,322	1,322	1,322	15,857
56																
57	**Deferred FIT**	(b)		36,016	36,016	36,016	36,016	36,016	36,016	36,016	36,016	36,016	36,016	36,016	36,016	432,192
58		(c)		(8,871)	(8,871)	(8,871)	(8,871)	(8,871)	(8,871)	(8,871)	(8,871)	(8,871)	(8,870)	(8,870)	(8,870)	(106,449)
59		(d)		(3,416)	(3,416)	(3,416)	(3,415)	(3,416)	(3,416)	(3,416)	(3,417)	(3,417)	(3,418)	(3,418)	(3,418)	(40,999)
60																
61			690630	23,729	23,729	23,729	23,730	23,729	23,729	23,729	23,728	23,728	23,728	23,728	23,728	284,744
62																
63	**Amortize ITC**	(e)		(7,066)	(7,066)	(7,066)	(7,066)	(7,066)	(7,066)	(7,066)	(7,066)	(7,066)	(7,066)	(7,066)	(7,066)	(84,792)
64																
65				17,984	17,984	17,984	17,985	17,984	17,984	17,984	17,984	17,984	17,984	17,984	17,984	215,809
66																
67																
68	**Net Balance Sheet Changes**	Cr.	Dr.	(17,984)	(17,984)	(17,984)	(17,985)	(17,984)	(17,984)	(17,984)	(17,984)	(17,984)	(17,984)	(17,984)	(17,984)	(215,809)
69	**SIT on Net Balance Sheet Changes**	253350	690750	(1,079)	(1,079)	(1,079)	(1,079)	(1,079)	(1,079)	(1,079)	(1,079)	(1,079)	(1,079)	(1,079)	(1,079)	(12,948)
70																
71				(16,905)	(16,905)	(16,905)	(16,906)	(16,905)	(16,905)	(16,905)	(16,905)	(16,905)	(16,905)	(16,905)	(16,905)	(202,861)
72	**FIT on Net Balance Sheet Changes**	253310	690650	(5,917)	(5,917)	(5,917)	(5,917)	(5,917)	(5,917)	(5,917)	(5,917)	(5,917)	(5,917)	(5,917)	(5,917)	(71,004)

1	**KENTUCKY-AMERICAN WATER COMPANY**		**Lookup**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	W/P - 1-8
2	**3/15/2013**											Exhibits\Taxes\[KY Deferred Taxes 2012-2014.xlsx]Amort RAL 2012				
3	**2012 STATE & FEDERAL INCOME TAX**															
4	**REGULATORY ASSET AMORTIZATION**			2012	2012	2012	2012	2012	2012	2012	2012	2012	2012	2012	2012	
5				JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
	Kentucky-American Water Company															
	Suumary of Changes in Regulatory Assets/Liabilities															
				JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
	Reg Asset-Flow Through Depreciation	(b)	186040	(44,592)	(44,592)	(44,592)	(44,592)	(44,592)	(44,592)	(44,592)	(44,592)	(44,592)	(44,592)	(44,592)	(44,592)	(535,104)
	Reg Asset-Other	(b)	186045	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	24,096
	Reg Liab-Excess Deferred Tax-Depreciation	(c)	256212	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	140,808
	Reg Liab-Deficit Deferred Tax	(c)	256220	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(27,564)
	Inclusion For Rate Base			9,437	9,437	9,437	9,437	9,437	9,437	9,437	9,437	9,437	9,437	9,437	9,437	113,244
	Reg Liab-Tax Rate Change	(c)	256232	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	48,684
				13,494	13,494	13,494	13,494	13,494	13,494	13,494	13,494	13,494	13,494	13,494	13,494	
	Reg Liab-Unamortized ITC (3%)	(d)	256310	432	432	432	432	432	432	432	432	432	432	432	432	5,184
	Reg Liab-Unamortized ITC (4%)	(d)	256311	356	356	356	355	356	356	356	356	356	356	356	356	4,271
	Reg Liab-Unamortized ITC (10%)	(d)	256312	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	39,024
				4,040	4,040	4,040	4,039	4,040	4,040	4,040	4,040	4,040	4,040	4,040	4,040	48,479
	Inclusion For Revenue Recognition			25,050	25,050	25,050	25,051	25,050	25,050	25,050	25,050	25,050	25,050	25,050	25,050	300,601
	Deferred ITC (3%)	(e)	255101	638	638	638	638	638	638	638	638	638	638	638	638	7,656
	Deferred ITC (4%)	(e)	255102	525	525	525	525	525	525	525	525	525	525	525	525	6,300
	Deferred ITC (10%)	(e)	255103	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	70,836
				7,066	7,066	7,066	7,066	7,066	7,066	7,066	7,066	7,066	7,066	7,066	7,066	84,792

1	KENTUCKY-AMERICAN WATER COMPANY		Lookup	1	2	3	4	5	6	7	8	9	10	11	12	W/P - 1-8
2	3/15/2013											Exhibits\Taxes\[KY Deferred Taxes 2012-2014.xlsx]Amort RAL 2013				
3	2109 STATE & FEDERAL INCOME TAX BUDGET															
4	REGULATORY ASSET AMORTIZATION			2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	
5				JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
6	Federal Income Tax rate		35.00%													
7	State Income Tax Rate		6.00%													
8	Combined Income Tax Rate		38.90%													
9																
10	Net Income		168-62	0	0	0	0	0	0	0	0	0	0	0	0	0
11	State Income Taxes		168-30	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Federal Income Taxes		168-31	0	0	0	0	0	0	0	0	0	0	0	0	0
13	State Income Taxes		168-50	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Federal Income Taxes		168-51	0	0	0	0	0	0	0	0	0	0	0	0	0
15																
16	Net Income Before Taxes			0	0	0	0	0	0	0	0	0	0	0	0	0
17																
18	Book depreciation		168-27													0
19	Tax basis depreciation															0
20																
21	**Change in Regulatory Assets/Liabilities:**															
22																
23	Reg Asset-State	(a)		0	0	0	0	0	0	0	0	0	0	0	0	0
24																
25	Reg Asset-Flow Through Depreciation	(b)	186040	(46,230)	(46,230)	(46,230)	(46,230)	(46,230)	(46,230)	(46,230)	(46,230)	(46,230)	(46,230)	(46,230)	(46,230)	(554,760)
26	Reg Asset-Other Flow Through Items	(b)	186040	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Reg Asset-Other	(b)	186045	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	24,096
28	Reg Asset-Tax Rate Change	(b)	186045	0	0	0	0	0	0	0	0	0	0	0	0	0
29																
30	Reg Liab-Excess Deferred Tax-Depreciation	(c)	256212	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	140,808
31	Reg Liab-Excess Deferred Tax-AFUDC	(c)	256212	0	0	0	0	0	0	0	0	0	0	0	0	0
32	Reg Liab-Excess Deferred Tax-Other	(c)	256212	0	0	0	0	0	0	0	0	0	0	0	0	0
33	Reg Liab-Deficit Deferred Tax	(c)	256220	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(27,564)
34	Reg Liab-Tax Rate Change	(c)	256232	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	48,684
35																
36	Reg Liab-Unamortized ITC (3%)	(d)	256310	432	432	432	432	432	432	432	432	432	432	432	432	5,184
37	Reg Liab-Unamortized ITC (4%)	(d)	256311	356	356	356	356	356	356	356	356	356	356	356	356	4,272
38	Reg Liab-Unamortized ITC (10%)	(d)	256312	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	39,024
39	Reg Liab-Unamortized ITC (6%)	(d)		0	0	0	0	0	0	0	0	0	0	0	0	0
40																
41	Deferred ITC (3%)	(e)	255.11	638	638	638	638	638	638	638	638	638	638	638	638	7,656
42	Deferred ITC (4%)	(e)	255.12	525	525	525	525	525	525	525	525	525	525	525	525	6,300
43	Deferred ITC (10%)	(e)	255.13	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	70,836
44	Deferred ITC (6%)	(e)	255.14	0	0	0	0	0	0	0	0	0	0	0	0	0
45																
46	**Net Change in Reg Assets/Liabs & ITC**			(19,622)	(19,622)	(19,622)	(19,622)	(19,622)	(19,622)	(19,622)	(19,622)	(19,622)	(19,622)	(19,622)	(19,622)	(235,464)
47																
48	**Distribution of Net Change:**															
49																
50	**Deferred SIT**	(a)		0	0	0	0	0	0	0	0	0	0	0	0	0
51		(b)		6,821	6,821	6,821	6,821	6,821	6,821	6,821	6,821	6,821	6,822	6,822	6,822	81,855
52		(c)		(4,623)	(4,623)	(4,623)	(4,623)	(4,623)	(4,623)	(4,623)	(4,623)	(4,623)	(4,623)	(4,623)	(4,623)	(55,476)
53		(d)		(623)	(623)	(623)	(623)	(623)	(623)	(623)	(623)	(623)	(624)	(624)	(624)	(7,479)
54																
55			690730	1,575	1,575	1,575	1,575	1,575	1,575	1,575	1,575	1,575	1,575	1,575	1,575	18,900
56																
57	**Deferred FIT**	(b)		37,401	37,401	37,401	37,401	37,401	37,401	37,401	37,401	37,401	37,400	37,400	37,400	448,809
58		(c)		(8,871)	(8,871)	(8,871)	(8,871)	(8,871)	(8,871)	(8,871)	(8,871)	(8,871)	(8,871)	(8,871)	(8,871)	(106,452)
59		(d)		(3,418)	(3,417)	(3,417)	(3,417)	(3,417)	(3,417)	(3,417)	(3,417)	(3,417)	(3,416)	(3,416)	(3,416)	(41,002)
60																
61			690630	25,112	25,113	25,113	25,113	25,113	25,113	25,113	25,113	25,113	25,113	25,113	25,113	301,355
62																
63	**Amortize ITC**	(e)		(7,066)	(7,066)	(7,066)	(7,066)	(7,066)	(7,066)	(7,066)	(7,066)	(7,066)	(7,066)	(7,066)	(7,066)	(84,792)
64																
65				19,621	19,622	19,622	19,622	19,622	19,622	19,622	19,622	19,622	19,622	19,622	19,622	235,463
66																
67																
68	**Net Balance Sheet Changes**	Cr.	Dr.	(19,622)	(19,622)	(19,622)	(19,622)	(19,622)	(19,622)	(19,622)	(19,622)	(19,622)	(19,622)	(19,622)	(19,622)	(235,464)
69	**SIT on Net Balance Sheet Changes**	253350	690750	(1,177)	(1,177)	(1,177)	(1,177)	(1,177)	(1,177)	(1,177)	(1,177)	(1,176)	(1,176)	(1,176)	(1,176)	(14,120)
70																
71				(18,445)	(18,445)	(18,445)	(18,445)	(18,445)	(18,445)	(18,445)	(18,445)	(18,446)	(18,446)	(18,446)	(18,446)	(221,344)
72	**FIT on Net Balance Sheet Changes**	253310	690650	(6,456)	(6,456)	(6,456)	(6,457)	(6,456)	(6,456)	(6,456)	(6,456)	(6,456)	(6,456)	(6,456)	(6,456)	(77,473)

1	**KENTUCKY-AMERICAN WATER COMPANY**		**Lookup**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	W/P - 1-8
2	**3/15/2013**											Exhibits\Taxes\[KY Deferred Taxes 2012-2014.xlsx]Amort RAL 2013				
3	**2109 STATE & FEDERAL INCOME TAX BUDGET**															
4	**REGULATORY ASSET AMORTIZATION**			2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	
5				JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
	Kentucky-American Water Company															
	Suumary of Changes in Regulatory Assets/Liabilities															
				JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
	Reg Asset-Flow Through Depreciation	(b)	185040	(46,230)	(46,230)	(46,230)	(46,230)	(46,230)	(46,230)	(46,230)	(46,230)	(46,230)	(46,230)	(46,230)	(46,230)	(554,760)
	Reg Asset-Other	(b)	185045	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	24,096
	Reg Liab-Excess Deferred Tax-Depreciation	(c)	256212	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	140,808
	Reg Liab-Deficit Deferred Tax	(c)	256220	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(27,564)
	Inclusion For Rate Base			9,437	9,437	9,437	9,437	9,437	9,437	9,437	9,437	9,437	9,437	9,437	9,437	113,244
	Reg Liab-Tax Rate Change	(c)	256232	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	48,684
				13,494	13,494	13,494	13,494	13,494	13,494	13,494	13,494	13,494	13,494	13,494	13,494	
	Reg Liab-Unamortized ITC (3%)	(d)	256310	432	432	432	432	432	432	432	432	432	432	432	432	5,184
	Reg Liab-Unamortized ITC (4%)	(d)	256311	356	356	356	356	356	356	356	356	356	356	356	356	4,272
	Reg Liab-Unamortized ITC (10%)	(d)	256312	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	39,024
				4,040	4,040	4,040	4,040	4,040	4,040	4,040	4,040	4,040	4,040	4,040	4,040	48,480
	Inclusion For Revenue Recognition			26,688	26,688	26,688	26,688	26,688	26,688	26,688	26,688	26,688	26,688	26,688	26,688	320,256
	Deferred ITC (3%)	(e)	255101	638	638	638	638	638	638	638	638	638	638	638	638	7,656
	Deferred ITC (4%)	(e)	255102	525	525	525	525	525	525	525	525	525	525	525	525	6,300
	Deferred ITC (10%)	(e)	255103	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	70,836
				7,066	7,066	7,066	7,066	7,066	7,066	7,066	7,066	7,066	7,066	7,066	7,066	84,792

1	KENTUCKY-AMERICAN WATER COMPANY		Lookup	1	2	3	4	5	6	7	8	9	10	11	12	W/P - 1-8
2	3/15/2013											Exhibits\Taxes\[KY Deferred Taxes 2012-2014.xlsx]Amort RAL 2014				
3	20111STATE & FEDERAL INCOME TAX BUDGET															
4	REGULATORY ASSET AMORTIZATION			2014	2014	2014	2014	2014	2014	2014	2014	2014	2014	2014	2014	
5				JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
6	Federal Income Tax rate		35.00%													
7	State Income Tax Rate		6.00%													
8	Combined Income Tax Rate		38.90%													
9																
10	Net Income		168-62	0	0	0	0	0	0	0	0	0	0	0	0	0
11	State Income Taxes		168-30	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Federal Income Taxes		168-31	0	0	0	0	0	0	0	0	0	0	0	0	0
13	State Income Taxes		168-50	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Federal Income Taxes		168-51	0	0	0	0	0	0	0	0	0	0	0	0	0
15																
16	Net Income Before Taxes			0	0	0	0	0	0	0	0	0	0	0	0	0
17	------------------------------			----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
18	Book depreciation		168-27													0
19	Tax basis depreciation															0
20	------------------------------			----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
21	Change in Regulatory Assets/Liabilities:															
22																
23	Reg Asset-State	(a)		0	0	0	0	0	0	0	0	0	0	0	0	0
24																
25	Reg Asset-Flow Through Depreciation	(b)	186040	(48,235)	(48,235)	(48,235)	(48,235)	(48,235)	(48,235)	(48,235)	(48,235)	(48,235)	(48,235)	(48,235)	(48,235)	(578,820)
26	Reg Asset-Other Flow Through Items	(b)	186040	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Reg Asset-Other	(b)	186045	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	24,096
28	Reg Asset-Tax Rate Change	(b)	186045	0	0	0	0	0	0	0	0	0	0	0	0	0
29																
30	Reg Liab-Excess Deferred Tax-Depreciation	(c)	256212	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	140,808
31	Reg Liab-Excess Deferred Tax-AFUDC	(c)	256212	0	0	0	0	0	0	0	0	0	0	0	0	0
32	Reg Liab-Excess Deferred Tax-Other	(c)	256212	0	0	0	0	0	0	0	0	0	0	0	0	0
33	Reg Liab-Deficit Deferred Tax	(c)	256220	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(27,564)
34	Reg Liab-Tax Rate Change	(c)	256232	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	48,684
35																
36	Reg Liab-Unamortized ITC (3%)	(d)	256310	432	432	432	432	432	432	432	432	432	432	432	432	5,184
37	Reg Liab-Unamortized ITC (4%)	(d)	256311	356	356	356	356	356	356	356	356	356	356	356	356	4,272
38	Reg Liab-Unamortized ITC (10%)	(d)	256312	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	39,024
39	Reg Liab-Unamortized ITC (6%)	(d)		0	0	0	0	0	0	0	0	0	0	0	0	0
40																
41	Deferred ITC (3%)	(e)	255.11	638	638	638	638	638	638	638	638	638	638	638	638	7,656
42	Deferred ITC (4%)	(e)	255.12	525	525	525	525	525	525	525	525	525	525	525	525	6,300
43	Deferred ITC (10%)	(e)	255.13	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	70,836
44	Deferred ITC (6%)	(e)	255.14	0	0	0	0	0	0	0	0	0	0	0	0	0
45	------------------------------															
46	Net Change in Reg Assets/Liabs & ITC			(21,627)	(21,627)	(21,627)	(21,627)	(21,627)	(21,627)	(21,627)	(21,627)	(21,627)	(21,627)	(21,627)	(21,627)	(259,524)
47	------------------------------															
48	Distribution of Net Change:															
49																
50	Deferred SIT	(a)		0	0	0	0	0	0	0	0	0	0	0	0	0
51		(b)		7,130	7,130	7,130	7,130	7,130	7,130	7,130	7,130	7,130	7,130	7,130	7,130	85,560
52		(c)		(4,623)	(4,623)	(4,623)	(4,623)	(4,623)	(4,623)	(4,623)	(4,623)	(4,623)	(4,623)	(4,623)	(4,623)	(55,476)
53		(d)		(623)	(623)	(623)	(623)	(623)	(623)	(623)	(623)	(623)	(623)	(623)	(623)	(7,476)
54																
55			690730	1,884	1,884	1,884	1,884	1,884	1,884	1,884	1,884	1,884	1,884	1,884	1,884	22,608
56																
57	Deferred FIT	(b)		39,097	39,097	39,097	39,097	39,097	39,097	39,097	39,097	39,097	39,097	39,097	39,097	469,164
58		(c)		(8,871)	(8,871)	(8,871)	(8,871)	(8,871)	(8,871)	(8,871)	(8,871)	(8,871)	(8,871)	(8,871)	(8,871)	(106,452)
59		(d)		(3,417)	(3,417)	(3,417)	(3,417)	(3,417)	(3,417)	(3,417)	(3,417)	(3,417)	(3,417)	(3,417)	(3,417)	(41,004)
60																
61			690630	26,809	26,809	26,809	26,809	26,809	26,809	26,809	26,809	26,809	26,809	26,809	26,809	321,708
62																
63	Amortize ITC	(e)		(7,066)	(7,066)	(7,066)	(7,066)	(7,066)	(7,066)	(7,066)	(7,066)	(7,066)	(7,066)	(7,066)	(7,066)	(84,792)
64																
65				21,627	21,627	21,627	21,627	21,627	21,627	21,627	21,627	21,627	21,627	21,627	21,627	259,524
66																
67																
68	Net Balance Sheet Changes	Cr.	Dr.	(21,627)	(21,627)	(21,627)	(21,627)	(21,627)	(21,627)	(21,627)	(21,627)	(21,627)	(21,627)	(21,627)	(21,627)	(259,524)
69	SIT on Net Balance Sheet Changes	253350	690750	(1,298)	(1,298)	(1,298)	(1,298)	(1,298)	(1,298)	(1,298)	(1,298)	(1,298)	(1,298)	(1,298)	(1,298)	(15,576)
70																
71				(20,329)	(20,329)	(20,329)	(20,329)	(20,329)	(20,329)	(20,329)	(20,329)	(20,329)	(20,329)	(20,329)	(20,329)	(243,948)
72	FIT on Net Balance Sheet Changes	253310	690650	(7,115)	(7,115)	(7,115)	(7,115)	(7,115)	(7,115)	(7,115)	(7,115)	(7,115)	(7,115)	(7,115)	(7,115)	(85,380)

			Lookup	1	2	3	4	5	6	7	8	9	10	11	12	W/P - 1-8
1	**KENTUCKY-AMERICAN WATER COMPANY**															
2	**3/15/2013**												Exhibits\Taxes\[KY Deferred Taxes 2012-2014.xlsx]Amort RAL 2014			
3	**20111STATE & FEDERAL INCOME TAX BUDGET**															
4	**REGULATORY ASSET AMORTIZATION**			2014	2014	2014	2014	2014	2014	2014	2014	2014	2014	2014	2014	
5				JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
	Kentucky-American Water Company															
	Suumary of Changes in Regulatory Assets/Liabilities															
				JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
	Reg Asset-Flow Through Depreciation	(b)	185040	(48,235)	(48,235)	(48,235)	(48,235)	(48,235)	(48,235)	(48,235)	(48,235)	(48,235)	(48,235)	(48,235)	(48,235)	(578,820)
	Reg Asset-Other	(b)	185045	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	2,008	24,096
	Reg Liab-Excess Deferred Tax-Depreciation	(c)	256212	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	11,734	140,808
	Reg Liab-Deficit Deferred Tax	(c)	256220	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(2,297)	(27,564)
	Inclusion For Rate Base			9,437	9,437	9,437	9,437	9,437	9,437	9,437	9,437	9,437	9,437	9,437	9,437	113,244
	Reg Liab-Tax Rate Change	(c)	256232	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	4,057	48,684
				13,494	13,494	13,494	13,494	13,494	13,494	13,494	13,494	13,494	13,494	13,494	13,494	
	Reg Liab-Unamortized ITC (3%)	(d)	256310	432	432	432	432	432	432	432	432	432	432	432	432	5,184
	Reg Liab-Unamortized ITC (4%)	(d)	256311	356	356	356	356	356	356	356	356	356	356	356	356	4,272
	Reg Liab-Unamortized ITC (10%)	(d)	256312	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	3,252	39,024
				4,040	4,040	4,040	4,040	4,040	4,040	4,040	4,040	4,040	4,040	4,040	4,040	48,480
	Inclusion For Revenue Recognition			28,693	28,693	28,693	28,693	28,693	28,693	28,693	28,693	28,693	28,693	28,693	28,693	344,316
	Deferred ITC (3%)	(e)	255101	638	638	638	638	638	638	638	638	638	638	638	638	7,656
	Deferred ITC (4%)	(e)	255102	525	525	525	525	525	525	525	525	525	525	525	525	6,300
	Deferred ITC (10%)	(e)	255103	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	5,903	70,836
				7,066	7,066	7,066	7,066	7,066	7,066	7,066	7,066	7,066	7,066	7,066	7,066	84,792

KENTUCKY-AMERICAN WATER COMPANY W/P - 1-8
TAX BASIS WATER PROPERTY - DEPRECIATION EXPENSE - FEDERAL Years 2 & 3 Exhibits\Taxes\[KY Tax Depreciation 2012-2014.xlsx]Yrs 2 and 3 FED
CASE NO. XXX

	2012 UPIS Additions		2013 UPIS Additions	
	2013 2nd Year	2014 3rd Year	2014 2nd Year	2015 3rd Year
TWENTY YEAR PROPERTY				
WATER PROPERTY				
UPIS Additions	2,705,214	2,705,214	26,555,193	26,555,193
Depreciation Rate	4.000%	4.000%	4.000%	4.000%
Tax Dep Expense	108,209	108,209	1,062,208	1,062,208
SEVEN YEAR PROPERTY				
OFFICE FURN. & FIX.				
UPIS Additions	131,066	131,066	0	0
Depreciation Rate	24.490%	17.490%	24.490%	17.490%
Tax Dep Expense	32,098	22,923	0	0
FIVE YEAR PROPERTY				
LIGHT TRUCKS				
CARS				
HEAVY TRUCKS				
OFFICE EQUIPMENT				
COMPUTER EQUIPMENT				
UPIS Additions	195,855	195,855	541,008	541,008
Depreciation Rate	32.000%	19.200%	32.000%	19.200%
Tax Dep Expense	62,674	37,604	173,123	103,874
THREE YEAR PROPERTY				
Software				
UPIS Additions	2,127,591	2,127,591	6,720,044	6,720,044
Depreciation Rate	33.330%	33.330%	33.330%	33.330%
Tax Dep Expense	709,126	709,126	2,239,791	2,239,791
REAL PROPERTY				
BUILDINGS				
UPIS Additions	280,473	280,473	1,023,222	1,023,222
Depreciation Rate	2.564%	2.564%	2.564%	2.564%
Tax Dep Expense	7,191	7,191	26,235	26,235
Annual Depreciation	919,298	885,053	3,501,357	3,432,108
Monthly Depreciation	76,608	73,754	291,780	286,009

KENTUCKY-AMERICAN WATER COMPANY
TAX BASIS WATER PROPERTY - DEPRECIATION EXPENSE - STATE
CASE NO. XXX
For the year 2012-2014

Exhibits\Taxes\[KY Tax Depreciation 2012-2014.xlsx

TWENTY-FIVE YEAR PROPERTY		Oct-2012	Nov-2012	Dec-2012	Jan-2013	Feb-2013	Mar-2013	Apr-2013	May-2013	Jun-2013	Jul-2013	Aug-2013	Sep-2013	Oct-2013
WATER PROPERTY	0	600,262	1,337,525	2,321,965	672,281	277,117	1,325,614	4,453,980	796,764	1,327,113	725,377	802,653	991,374	596,582
N.D.B. (LINE-8 @100%)	0	600,262	1,337,525	2,321,965	672,281	277,117	1,325,614	4,453,980	796,764	1,327,113	725,377	802,653	991,374	596,582
ACCUMULATED	0	600,262	1,937,787	4,259,752	4,932,033	5,209,150	6,534,764	10,988,745	11,785,509	13,112,621	13,837,998	14,640,651	15,632,026	16,228,608
REGULAR DEPRECIATION	0	12,005	26,751	46,439	13,446	5,542	26,512	89,080	15,935	26,542	14,508	16,053	19,827	11,932
ACCUM DEPRECIATION	0	12,005	38,756	85,195	98,641	104,183	130,695	219,775	235,710	262,252	276,760	292,813	312,640	324,572
SEVEN YEAR PROPERTY														
OFFICE FURN. & FIX.	0	131,066	0	0	0	0	0	0	0	0	0	0	0	0
N.D.B. (LINES 17-19 @100%)	0	131,066	0	0	0	0	0	0	0	0	0	0	0	0
ACCUMULATED	0	131,066	131,066	131,066	131,066	131,066	131,066	131,066	131,066	131,066	131,066	131,066	131,066	131,066
DEPRECIATION	0	18,729	0	0	0	0	0	0	0	0	0	0	0	0
ACCUM DEPRECIATION	0	18,729	18,729	18,729	18,729	18,729	18,729	18,729	18,729	18,729	18,729	18,729	18,729	18,729
FIVE YEAR PROPERTY														
LIGHT TRUCKS	0	34,171	10,121	23,321	0	0	0	0	17,333	0	109,200	0	0	0
CARS	0	35,256	10,428	24,028	0	0	0	0	17,859	0	112,509	0	0	0
HEAVY TRUCKS	0	34,377	10,121	23,321	0	0	0	0	17,333	0	109,200	0	0	0
OFFICE EQUIPMENT		93,467	0	0	0	0	0	0	0	0	0	0	0	0
COMPUTER EQUIPMENT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N.D.B. (LINES 17-19 @100%)	0	197,272	30,670	70,670	0	0	0	0	52,525	0	330,908	0	0	0
ACCUMULATED	0	197,272	227,941	298,611	298,611	298,611	298,611	298,611	351,136	351,136	682,044	682,044	682,044	682,044
DEPRECIATION	0	39,454	6,134	14,134	0	0	0	0	10,505	0	66,182	0	0	0
ACCUM DEPRECIATION	0	39,454	45,588	59,722	59,722	59,722	59,722	59,722	70,227	70,227	136,409	136,409	136,409	136,409
THREE YEAR PROPERTY														
SOFTWARE	0	74,399	57,033	56,937	73,664	151,610	5,587	5,587	5,760,686	109,646	127,963	123,648	117,797	113,965
N.D.B. (LINES 17-19 @100%)	0	74,399	57,033	56,937	73,664	151,610	5,587	5,587	5,760,686	109,646	127,963	123,648	117,797	113,965
ACCUMULATED	0	74,399	131,432	188,370	262,034	413,644	419,232	424,819	6,185,505	6,295,151	6,423,114	6,546,762	6,664,559	6,778,524
DEPRECIATION	0	24,797	19,009	18,977	24,552	50,532	1,862	1,862	1,920,037	36,545	42,650	41,212	39,262	37,985
ACCUM DEPRECIATION	0	24,797	43,806	62,783	87,335	137,867	139,729	141,591	2,061,628	2,098,173	2,140,823	2,182,035	2,221,297	2,259,282
REAL PROPERTY														
BUILDINGS	0	23,707	58,557	122,555	106,502	99,196	0	0	37,608	97,708	68,283	130,974	126,060	123,620
ACCUMULATED	0	23,707	82,264	204,819	311,321	410,518	410,518	410,518	448,126	545,834	614,117	745,091	871,151	994,771
DEPRECIATION	0	482	1,065	1,967	1,481	1,168	0	0	201	314	73	3,223	2,833	2,513
ACCUM DEPRECIATION	0	482	1,547	3,514	4,995	6,163	6,163	6,163	6,364	6,678	6,751	9,974	12,807	15,320
TOTAL ACCUM. DEPR.	0	95,467	148,426	229,943	269,422	326,664	355,038	445,980	2,392,658	2,456,059	2,579,472	2,639,960	2,701,882	2,754,312
LESS: PROV. YEAR TO DATE	0	0	31,822	90,124	0	22,452	50,107	80,601	121,198	405,131	698,120	1,011,679	1,337,335	1,678,472
SUBTOTAL	0	95,467	116,604	139,819	269,422	304,212	304,931	365,379	2,271,460	2,050,928	1,881,352	1,628,281	1,364,547	1,075,840
REMAINING PERIODS	5	3	2	1	12	11	10	9	8	7	6	5	4	3
MONTHLY PROV.	0	31,822	58,302	139,819	22,452	27,656	30,493	40,598	283,932	292,990	313,559	325,656	341,137	358,613
ON CURRENT ADDITIONS														
DEPRECIATION ON PROPERTY @														
2011&Prior UPIS Projected	0	981,454	981,454	981,454	908,751	908,751	908,751	908,751	908,751	908,751	908,751	908,751	908,751	908,751
Current Year Regular Depreciation	0	31,822	58,302	139,819	22,452	27,656	30,493	40,598	283,932	292,990	313,559	325,656	341,137	358,613
Current Year Bonus Depreciation	0	0	0	0	0	0	0	0	0	0	0	76,608	76,608	76,608
Year 2 & 3 Depreciation					152,617	152,617	152,617	152,617	152,617	152,617	152,617	152,617	152,617	152,617
TOTAL DEPRECIATION	0	1,013,276	1,039,756	1,121,273	1,083,819	1,089,023	1,091,861	1,101,965	1,345,300	1,354,357	1,374,926	1,463,632	1,479,112	1,496,589
ACCUMULATED	0	1,013,276	2,053,032	3,174,304	4,258,124	5,347,147	6,439,008	7,540,973	8,886,273	10,240,630	11,615,556	1,463,632	2,942,744	1,496,589
Accum Depr on 2008-09 Additions	0	31,822	90,124	229,943	252,395	280,050	310,544	351,141	635,074	928,063	1,241,622	1,567,278	1,908,415	2,267,028
Numeric Month	8	10	11	12	1	2	3	4	5	6	7	8	9	10

KENTUCKY-AMERICAN WATER COMPAW/P - 1-8
TAX BASIS WATER PROPERTY - DEPRECIATION]Tax Depr STATE
CASE NO. XXX
For the year 2012-2014

W/P - 1-8
Exhibits\Taxes\[KY Tax Depreciation 2012-2014.xlsx]Tax Depr STATE

TWENTY-FIVE YEAR PROPERTY	Nov-2013	Dec-2013	Jan-2014	Feb-2014	Mar-2014	Apr-2014	May-2014	Jun-2014	Jul-2014	Aug-2014	Sep-2014	Oct-2014	Nov-2014	Dec-2014	
WATER PROPERTY	435,368	14,150,969	396,947	813,641	417,081	640,920	905,947	860,163	982,824	746,636	1,475,024	1,936,884	4,348,961	2,780,318	47,120,292
N.D.B. (LINE-8 @100%)	435,368	14,150,969	396,947	813,641	417,081	640,920	905,947	860,163	982,824	746,636	1,475,024	1,936,884	4,348,961	2,780,318	47,120,292
ACCUMULATED	16,663,976	30,814,945	31,211,892	32,025,533	32,442,614	33,083,534	33,989,481	34,849,645	35,832,469	36,579,104	38,054,128	39,991,013	44,339,974	47,120,292	
REGULAR DEPRECIATION	8,707	283,019	7,939	16,273	8,342	12,818	18,119	17,203	19,656	14,933	29,500	38,738	86,979	55,606	
ACCUM DEPRECIATION	333,279	616,298	624,237	640,510	648,852	661,670	679,789	696,992	716,648	731,581	761,081	799,819	886,798	942,404	
SEVEN YEAR PROPERTY															
OFFICE FURN. & FIX.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	131,066
N.D.B. (LINES 17-19 @100%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	131,066
ACCUMULATED	131,066	131,066	131,066	131,066	131,066	131,066	131,066	131,066	131,066	131,066	131,066	131,066	131,066	131,066	
DEPRECIATION	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ACCUM DEPRECIATION	18,729	18,729	18,729	18,729	18,729	18,729	18,729	18,729	18,729	18,729	18,729	18,729	18,729	18,729	
FIVE YEAR PROPERTY															
LIGHT TRUCKS	52,000	0	0	0	0	0	15,253	18,027	115,440	0	0	36,746	0	0	431,612
CARS	53,576	0	0	0	0	0	15,715	18,573	118,938	0	0	37,860	0	0	444,741
HEAVY TRUCKS	52,000	0	0	0	0	0	15,253	18,027	115,440	0	0	36,746	0	0	431,817
OFFICE EQUIPMENT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	93,467
COMPUTER EQUIPMENT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N.D.B. (LINES 17-19 @100%)	157,575	0	0	0	0	0	46,222	54,626	349,817	0	0	111,353	0	0	1,401,637
ACCUMULATED	839,619	839,619	839,619	839,619	839,619	839,619	885,841	940,467	1,290,284	1,290,284	1,290,284	1,401,637	1,401,637	1,401,637	
DEPRECIATION	31,515	0	0	0	0	0	9,244	10,925	69,963	0	0	22,271	0	0	
ACCUM DEPRECIATION	167,924	167,924	167,924	167,924	167,924	167,924	177,168	188,093	258,056	258,056	258,056	280,327	280,327	280,327	
THREE YEAR PROPERTY															
SOFTWARE	65,618	64,273	38,834	37,851	271,176	0	0	0	0	0	0	0	0	0	7,256,274
N.D.B. (LINES 17-19 @100%)	65,618	64,273	38,834	37,851	271,176	0	0	0	0	0	0	0	0	0	7,256,274
ACCUMULATED	6,844,141	6,908,414	6,947,248	6,985,098	7,256,274	7,256,274	7,256,274	7,256,274	7,256,274	7,256,274	7,256,274	7,256,274	7,256,274	7,256,274	
DEPRECIATION	21,870	21,422	12,943	12,616	90,383	0	0	0	0	0	0	0	0	0	
ACCUM DEPRECIATION	2,281,152	2,302,574	2,315,517	2,328,133	2,418,516	2,418,516	2,418,516	2,418,516	2,418,516	2,418,516	2,418,516	2,418,516	2,418,516	2,418,516	
REAL PROPERTY															
BUILDINGS	135,171	98,099	8,403	0	0	0	35,717	77,737	92,215	92,444	243,583	133,050	117,656	90,141	2,118,987
ACCUMULATED	1,129,942	1,228,041	1,236,444	1,236,444	1,236,444	1,236,444	1,272,161	1,349,898	1,442,113	1,534,557	1,778,140	1,911,190	2,028,846	2,118,987	
DEPRECIATION	2,459	1,574	117	0	0	0	191	250	99	0	0	0	0	0	
ACCUM DEPRECIATION	17,779	19,353	19,470	19,470	19,470	19,470	19,661	19,911	20,010	20,010	20,010	20,010	20,010	20,010	
TOTAL ACCUM. DEPR.	2,818,863	3,124,878	3,145,877	3,174,766	3,273,491	3,286,309	3,313,863	3,342,241	3,431,959	3,446,892	3,476,392	3,537,401	3,624,380	3,679,986	
LESS: PROV. YEAR TO DATE	2,037,085	2,427,974	0	262,156	526,939	801,594	1,077,674	1,357,197	1,640,775	1,939,306	2,240,823	2,549,715	2,878,944	3,251,662	
SUBTOTAL	781,778	696,904	3,145,877	2,912,610	2,746,552	2,484,715	2,236,189	1,985,044	1,791,184	1,507,586	1,235,569	987,686	745,436	428,324	
REMAINING PERIODS	2	1	12	11	10	9	8	7	6	5	4	3	2	1	
MONTHLY PROV.	390,889	696,904	262,156	264,783	274,655	276,079	279,524	283,578	298,531	301,517	308,892	329,229	372,718	428,324	7,034,807
ON CURRENT ADDITIONS															
														Total Tax Basis Additions	58,028,256
DEPRECIATION ON PROPERTY @															
2011&Prior UPIS Projected	908,751	908,751	860,667	860,667	860,667	860,667	860,667	860,667	860,667	860,667	860,667	860,667	860,667	860,667	24,177,377
Current Year Regular Depreciation	390,889	696,904	262,156	264,783	274,655	276,079	279,524	283,578	298,531	301,517	308,892	329,229	372,718	428,324	7,034,807
Current Year Bonus Depreciation	76,608	76,608	76,608	76,608	76,608	76,608	76,608	76,608	76,608	76,608	76,608	76,608	76,608	76,608	1,302,336
Year 2 & 3 Depreciation	152,617	152,617	438,690	438,690	438,690	438,690	438,690	438,690	438,690	438,690	438,690	438,690	438,690	438,690	7,095,684
TOTAL DEPRECIATION	1,528,864	1,834,879	1,638,122	1,640,748	1,650,621	1,652,045	1,655,489	1,659,543	1,674,496	1,677,483	1,684,858	1,705,194	1,748,683	1,804,289	39,610,204
ACCUMULATED	3,025,453	4,860,333	6,498,455	8,139,203	9,789,823	11,441,868	13,097,357	14,756,900	16,431,396	18,108,879	19,793,736	21,498,930	23,247,614	25,051,903	
Accum Depr on 2008-09 Additions	2,657,917	3,354,821	3,616,977	3,881,760	4,156,415	4,432,495	4,712,018	4,995,596	5,294,127	5,595,644	5,904,536	6,233,765	6,606,483	7,034,807	
Numeric Month	11	12	1	2	3	4	5	6	7	8	9	10	11	12	

KENTUCKY-AMERICAN WATER COMPA
TAX BASIS WATER PROPERTY - DEPRECIATION
CASE NO. XXX
For the year 2012-2014

TWENTY-FIVE YEAR PROPERTY	
WATER PROPERTY	2,129,876
N.D.B. (LINE-8 @100%)	
ACCUMULATED	
REGULAR DEPRECIATION	
ACCUM DEPRECIATION	
SEVEN YEAR PROPERTY	
OFFICE FURN. & FIX.	65,533
N.D.B. (LINES 17-19 @100%)	
ACCUMULATED	
DEPRECIATION	
ACCUM DEPRECIATION	
FIVE YEAR PROPERTY	
LIGHT TRUCKS	
CARS	
HEAVY TRUCKS	
OFFICE EQUIPMENT	
COMPUTER EQUIPMENT	
N.D.B. (LINES 17-19 @100%)	149,305
ACCUMULATED	
DEPRECIATION	
ACCUM DEPRECIATION	
THREE YEAR PROPERTY	
SOFTWARE	94,185
N.D.B. (LINES 17-19 @100%)	
ACCUMULATED	
DEPRECIATION	
ACCUM DEPRECIATION	
REAL PROPERTY	
BUILDINGS	0
ACCUMULATED	
DEPRECIATION	
ACCUM DEPRECIATION	
TOTAL ACCUM. DEPR.	
LESS: PROV. YEAR TO DATE	
SUBTOTAL	
REMAINING PERIODS	
MONTHLY PROV.	
ON CURRENT ADDITIONS	
DEPRECIATION ON PROPERTY @	
2011&Prior UPIS Projected	
Current Year Regular Depreciation	
Current Year Bonus Depreciation	
Year 2 & 3 Depreciation	
TOTAL DEPRECIATION	
ACCUMULATED	

Accum Depr on 2008-09 Additions
Numeric Month

KENTUCKY-AMERICAN WATER COMPANY W/P - 1-8
TAX BASIS WATER PROPERTY - DEPRECIATION EXPENSE - STATE Years 2 & 3 Exhibits\Taxes\[KY Tax Depreciation 2012-2014.xlsx]Yrs 2 and 3 STATE
CASE NO. XXX

	2012 UPIS Additions		2013 UPIS Additions	
	2013 2nd Year	2014 3rd Year	2014 2nd Year	2015 3rd Year
TWENTY YEAR PROPERTY				
WATER PROPERTY				
UPIS Additions	5,410,428	5,410,428	26,555,193	26,555,193
Depreciation Rate	4.000%	4.000%	4.000%	4.000%
Tax Dep Expense	216,417	216,417	1,062,208	1,062,208
SEVEN YEAR PROPERTY				
OFFICE FURN. & FIX.				
UPIS Additions	262,132	262,132	0	0
Depreciation Rate	24.490%	17.490%	24.490%	17.490%
Tax Dep Expense	64,196	45,847	0	0
FIVE YEAR PROPERTY				
LIGHT TRUCKS				
CARS				
HEAVY TRUCKS				
OFFICE EQUIPMENT				
COMPUTER EQUIPMENT				
UPIS Additions	391,711	391,711	541,008	541,008
Depreciation Rate	32.000%	19.200%	32.000%	19.200%
Tax Dep Expense	125,347	75,208	173,123	103,874
THREE YEAR PROPERTY				
Software				
UPIS Additions	4,255,182	4,255,182	6,720,044	6,720,044
Depreciation Rate	33.330%	33.330%	33.330%	33.330%
Tax Dep Expense	1,418,252	1,418,252	2,239,791	2,239,791
REAL PROPERTY				
BUILDINGS				
UPIS Additions	280,473	280,473	1,023,222	1,023,222
Depreciation Rate	2.564%	2.564%	2.564%	2.564%
Tax Dep Expense	7,191	7,191	26,235	26,235
Annual Depreciation	1,831,403	1,762,915	3,501,357	3,432,108
Monthly Depreciation	152,617	146,910	291,780	286,009

COMPANY: KENTUCKY-AMERICAN WATER COMPANY
Tax Depreciation Rates
Half Year Convention
CASE NO. XXX

W/P - 1-8
Exhibits\Taxes\[KY Tax Depreciation 2012-2014.xlsx]Depr Rates

Year 1	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
25 Yr Water Property	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
7 Year Property	14.29%	14.29%	14.29%	14.29%	14.29%	14.29%	14.29%	14.29%	14.29%	14.29%	14.29%	14.29%
5 Year Property	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
3 Year Property	33.33%	33.33%	33.33%	33.33%	33.33%	33.33%	33.33%	33.33%	33.33%	33.33%	33.33%	33.33%
Real Property	2.461%	2.247%	2.033%	1.819%	1.605%	1.391%	1.177%	0.963%	0.749%	0.535%	0.321%	0.107%

Year 2												
25 Yr Water Property	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
7 Year Property	24.49%	24.49%	24.49%	24.49%	24.49%	24.49%	24.49%	24.49%	24.49%	24.49%	24.49%	24.49%
5 Year Property	32.00%	32.00%	32.00%	32.00%	32.00%	32.00%	32.00%	32.00%	32.00%	32.00%	32.00%	32.00%
3 Year Property	33.33%	33.33%	33.33%	33.33%	33.33%	33.33%	33.33%	33.33%	33.33%	33.33%	33.33%	33.33%
Real Property	2.564%	2.564%	2.564%	2.564%	2.564%	2.564%	2.564%	2.564%	2.564%	2.564%	2.564%	2.564%

Year 3												
25 Yr Water Property	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
7 Year Property	17.49%	17.49%	17.49%	17.49%	17.49%	17.49%	17.49%	17.49%	17.49%	17.49%	17.49%	17.49%
5 Year Property	19.20%	19.20%	19.20%	19.20%	19.20%	19.20%	19.20%	19.20%	19.20%	19.20%	19.20%	19.20%
3 Year Property	33.33%	33.33%	33.33%	33.33%	33.33%	33.33%	33.33%	33.33%	33.33%	33.33%	33.33%	33.33%
Real Property	2.564%	2.564%	2.564%	2.564%	2.564%	2.564%	2.564%	2.564%	2.564%	2.564%	2.564%	2.564%

Kentucky-American Water Company											W/P - 1-8
UPIS Additions per Construction File		82,671,099					Exhibits\Taxes\[KY Tax Depreciation 2012-2014.xlsx]Plant Add				
CASE NO. XXX											
		Sep-2012	Oct-2012	Nov-2012	Dec-2012	Jan-2013	Feb-2013	Mar-2013	Apr-2013	May-2013	Jun-2013
10130100	301000-Organization	0	0	0	0	0	0	0	0	0	0
10130200	302000-Franchises	0	0	0	0	0	0	0	0	0	0
10130320	303200-Land & Land Rights-Supply	0	0	0	0	0	0	0	0	0	0
10130330	303300-Land & Land Rights-Pumping	0	0	0	0	0	0	0	0	0	0
10130340	303400-Land & Land Rights-Treatment	0	0	0	0	0	0	0	0	0	0
10130350	303500-Land & Land Rights-T&D	154,790	0	0	0	0	0	0	0	0	0
10130410	304100-Struct & Imp-Supply	7,489	7,489	0	0	0	0	0	0	0	0
10130420	304200-Struct & Imp-Pumping	0	0	0	0	0	0	0	0	0	0
10130430	304300-Struct & Imp-Treatment	0	0	0	124,502	106,502	99,196	0	0	16,598	76,698
10130440	304400-Struct & Imp-T&D	0	0	0	0	0	0	0	0	0	0
10130450	304500-Struct & Imp-General	68,165	16,218	58,557	(1,948)	0	0	0	0	21,010	21,010
10130450	304600-Struct & Imp-Offices	0	0	0	0	0	0	0	0	0	0
10130450	304610-Struct & Imp-HVAC	0	0	0	0	0	0	0	0	0	0
10130450	304700-Struct & Imp-Store,Shop,Gar	0	0	0	0	0	0	0	0	0	0
10130450	304800-Struct & Imp-Misc	0	0	0	0	0	0	0	0	0	0
10130500	305000-Collect & Impound Reservoirs	0	0	0	0	0	0	0	0	0	0
10130600	306000-Lake, River & Other Intakes	1,494	0	1,494	46,688	39,938	37,199	0	0	6,224	28,762
10130900	309000-Supply Mains	0	0	0	0	0	0	0	0	0	0
10131000	310000-Power Generation Equip	0	0	0	0	0	0	0	0	0	0
10131120	311000-Pump Eqp	0	0	0	0	0	0	0	0	0	0
10131120	311200-Pump Eqp Electric	100,324	0	14,743	77,814	66,564	61,998	0	1,483,891	45,374	135,436
10131130	311300-Pump Eqp Diesel	0	0	0	0	0	0	0	0	0	0
10131140	311400-Pump Eqp Hydraulic	0	0	0	0	0	0	0	0	0	0
10131150	311500-Pump Eqp Other	0	0	0	0	0	0	0	0	0	0
10131152	311520-Pump Eqp-SOS & Pumping	0	0	0	0	0	0	0	0	0	0
10131153	311530-Pump Eqp Wtr Treatment	0	0	0	0	0	0	0	0	0	0
10131154	311540-Pumping Equipment TD	0	0	0	0	0	0	0	0	0	0
10132010	320100-WT Equip Non-Media	0	0	0	31,126	26,626	24,799	0	0	4,150	19,175
10132010	320200-WT Equip Filter Media	0	0	0	0	0	0	0	0	0	0
10133000	330000-Dist Reservoirs & Standpipes	0	0	0	0	0	0	0	0	0	0
10133000	330100-Elevated Tanks & Standpipes	0	0	0	0	0	0	0	0	0	0
10133000	330200-Ground Level Tanks	756,930	0	203,702	540,273	26,626	24,799	0	0	4,150	19,175
10133000	330400-Clearwell	0	0	0	0	0	0	0	0	0	0
10133100	331001-TD Mains Not Classified	2,052,113	139,032	571,304	549,608	656,897	1,544,225	133,417	1,819,309	279,552	288,259
10133100	331100-TD Mains 4in & Less	0	0	0	0	0	0	0	0	0	0
10133100	331200-TD Mains 6in to 8in	0	0	0	0	0	0	0	0	0	0
10133100	331300-TD Mains 10in to 16in	0	0	0	0	0	0	0	0	0	0
10133100	331400-TD Mains 18in & Grtr	0	0	0	0	0	0	0	0	0	0
10133300	333000-Services	57,646	198,130	233,537	205,541	155,672	199,556	183,586	261,152	205,716	204,529
10133410	334100-Meters	180,877	792,689	609,927	1,676,442	56,749	370,260	129,961	621,405	712,292	585,594
10133410	334110-Meters Bronze Case	0	0	0	0	0	0	0	0	0	0
10133410	334120-Meters Plastic Case	0	0	0	0	0	0	0	0	0	0
10133410	334130-Meters Other	0	0	0	0	0	0	0	0	0	0
10133410	334131-Meter Reading Units	0	0	0	0	0	0	0	0	0	0
10133420	334200-Meter Installations	34,660	648	34,012	0	0	0	0	0	0	0
10133410	334300-Meter Vaults	0	0	0	0	0	0	0	0	0	0
10133500	335000-Hydrants	62,151	34,193	57,994	44,485	55,730	89,378	35,280	76,671	48,342	52,421
10133910	339100-Other P/E-Intangible	0	0	0	0	0	0	0	0	0	0
10133910	339600-Other P/E-CPS	400,277	0	0	0	0	0	400,277	16,474	16,474	16,474
10134010	340100-Office Furniture & Equip	131,066	131,066	0	0	0	0	0	0	0	0
10134010	340210-Comp & Periph Mainframe	0	0	0	0	0	0	0	0	0	0
10134010	340220-Comp & Periph Personal	0	0	0	0	0	0	0	0	0	0
10134010	340230-Comp & Periph Other	0	0	0	0	0	0	0	0	0	0
10134010	340240-Comp & Periph Capital Lease	0	0	0	0	0	0	0	0	0	0
10134010	340300-Computer Software	7,894	7,894	0	0	0	0	0	0	0	0
10134010	340320-Comp Software Personal	0	0	0	0	0	0	0	0	0	0
10134010	340325-Comp Software Customized	0	0	0	0	0	0	0	0	0	0
10134010	340330-Comp Software Other	0	0	0	0	0	0	0	0	0	0
10134010	340500-Other Office Equipment	0	0	0	0	0	0	0	0	0	0
10134100	341100-Trans Equip Lt Duty Trks	(206)	34,171	10,121	23,321	0	0	0	0	17,333	0
10134100	341200-Trans Equip Hvy Duty Trks	0	34,377	10,121	23,321	0	0	0	0	17,333	0

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CASE NO. XXX												
			Sep-2012	**Oct-2012**	**Nov-2012**	**Dec-2012**	**Jan-2013**	**Feb-2013**	**Mar-2013**	**Apr-2013**	**May-2013**	**Jun-2013**
10134100	341300-Trans Equip Autos		(162)	35,256	10,428	24,028	0	0	0	0	17,859	0
10134100	341400-Trans Equip Other		0	0	0	0	0	0	0	0	0	0
10134200	342000-Stores Equipment		0	0	0	0	0	0	0	0	0	0
10134300	343000-Tools,Shop,Garage Equip		0	5,669	59,128	89,128	0	10,505	13,657	47,273	115,556	10,505
10134400	344000-Laboratory Equipment		7,157	0	7,157	0	0	0	0	0	0	0
10134500	345000-Power Operated Equipment		0	0	0	0	0	0	0	0	0	0
10134600	346100-Comm Equip Non-Telephone		93,467	93,467	0	0	0	0	0	0	0	0
10134600	346190-Remote Control & Instrument		460,868	0	0	0	0	0	459,726	241,534	87,654	491,828
10134600	346200-Comm Equip Telephone		0	0	0	0	0	0	0	0	0	0
10134700	347000-Misc Equipment		19,749	12,332	0	0	0	0	0	207,176	5,000	12,500
10134800	348000-Other Tangible Property		227,819	0	0	0	0	0	227,819	2,907	2,907	2,907
10135420	354200-WW Struct & Imp Collection		0	0	0	0	0	0	0	0	0	0
10134010	340315-Comp Software Specia		4,058,919	66,505	57,033	56,937	73,664	151,610	5,587	5,587	5,760,686	109,646
10133930	339300-Other P/E-Treatment		5,705	0	0	0	0	0	0	205,464	5,000	12,500
	TOTAL UTILITY PLANT IN SERV	0	8,889,193	1,609,136	1,939,260	3,511,267	1,264,968	2,613,525	1,589,311	4,988,843	7,389,209	2,087,418
Kentucky-American Water Company		Total Tax Additions 2012		5,594,990			Total Additions 2013		35,201,886			
Segregation of Tax Basis Property		Total Land		154,790	5,440,200		Total Land		362,419	34,839,467		
CASE NO. XXX												
			Sep-2012	**Oct-2012**	**Nov-2012**	**Dec-2012**	**Jan-2013**	**Feb-2013**	**Mar-2013**	**Apr-2013**	**May-2013**	**Jun-2013**
	WATER PROPERTY		$575,338	$300,131	$668,763	$1,160,982	$672,281	$277,117	$1,325,614	$4,453,980	$796,764	$1,327,113
	OFFICE FURN. & FIX.		65,533	65,533	0	0	0	0	0	0	0	0
	SOFTWARE		2,033,406	37,200	28,517	28,469	73,664	151,610	5,587	5,587	5,760,686	109,646
	LIGHT TRUCKS		(103)	17,086	5,060	11,660	0	0	0	0	17,333	0
	CARS		(81)	17,628	5,214	12,014	0	0	0	0	17,859	0
	HEAVY TRUCKS		0	17,188	5,060	11,660	0	0	0	0	17,333	0
	OFFICE EQUIPMENT		46,734	46,734	0	0	0	0	0	0	0	0
	COMPUTER EQUIPMENT		0	0	0	0	0	0	0	0	0	0
	BUILDINGS		75,654	23,707	58,557	122,555	106,502	99,196	0	0	37,608	97,708
	Land		154,790	0	0	0	0	0	0	0	0	0
	Total Tax Basis Property		2,951,272	525,206	771,172	1,347,341	852,448	527,924	1,331,201	4,459,568	6,647,583	1,534,467
	Check Total before Temporary Diff		5,937,921	1,083,930	1,168,088	2,163,926	412,520	2,085,601	258,109	529,275	741,626	552,951
	Book AFUDC		442,219	0	799	33,035	9,651	16,666	42,136	196,225	514,385	14,162
	Tax AFUDC		33,423	0	799	26,709	582	1,005	31,258	91,226	284,663	854
	Net Non-taxable Cust Adv/CIAC		2,761,885	285,080	166,776	125,080	192,870	1,526,380	142,870	173,080	175,390	214,770
	Repairs		46,413	297,351	288,698	807,735	210,581	543,560	104,362	251,196	336,515	324,873
	Bonus Depreciation		2,720,828	501,499	712,614	1,224,786	-					
	Total Net Temporary Differences		5,937,921	1,083,930	1,168,088	2,163,926	412,520	1,542,041	153,748	278,079	405,112	228,078
	Check Total		0	0	0	0	(0)	543,560	104,362	251,196	336,515	324,873

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10130100	301000-Organization	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10130200	302000-Franchises	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10130320	303200-Land & Land Rights-Su	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10130330	303300-Land & Land Rights-Pu	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10130340	303400-Land & Land Rights-Tr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10130350	303500-Land & Land Rights-Ta	0	0	0	0	0	362,419	388	228	0	0	0	0	0	0	0	0	0	0
10130410	304100-Struct & Imp-Supply	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10130420	304200-Struct & Imp-Pumping	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10130430	304300-Struct & Imp-Treatme	21,010	104,711	73,535	50,085	87,898	71,838	8,403	0	0	0	14,707	67,232	60,700	81,939	170,048	59,515	86,141	58,626
10130440	304400-Struct & Imp-T&D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10130450	304500-Struct & Imp-General	47,273	26,263	52,525	73,535	47,273	26,261	0	0	0	0	21,010	10,505	31,515	10,505	73,535	73,535	31,515	31,515
10130450	304600-Struct & Imp-Offices	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10130450	304610-Struct & Imp-HVAC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10130450	304700-Struct & Imp-Store,Sh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10130450	304800-Struct & Imp-Misc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10130500	305000-Collect & Impound Re	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10130600	306000-Lake, River & Other In	7,879	39,267	27,576	18,782	32,962	26,939	3,151	0	0	0	5,515	25,212	22,763	30,727	28,129	22,318	32,303	21,985
10130900	309000-Supply Mains	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10131000	310000-Power Generation Eq	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10131120	311000-Pump Eqp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10131120	311200-Pump Eqp Electric	100,631	82,945	45,960	31,303	54,936	321,736	5,770	304	0	0	9,192	42,020	37,938	51,212	543,463	51,197	53,838	36,641
10131130	311300-Pump Eqp Diesel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10131140	311400-Pump Eqp Hydraulic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10131150	311500-Pump Eqp Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10131152	311520-Pump Eqp-SOS & Pum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10131153	311530-Pump Eqp Wtr Treatm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10131154	311540-Pumping Equipment T	0	0	0	0	0	346,047	647	379	0	0	0	0	0	0	0	0	0	0
10132010	320100-WT Equip Non-Media	5,253	26,178	18,384	12,521	21,975	17,960	2,101	0	0	0	3,677	16,808	15,175	20,485	208,828	14,879	21,535	14,657
10132010	320200-WT Equip Filter Media	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10133000	330000-Dist Reservoirs & Stan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10133000	330100-Elevated Tanks & Stan	0	0	0	0	0	3,460,471	6,474	3,795	0	0	0	0	0	0	0	0	0	0
10133000	330200-Ground Level Tanks	5,253	26,178	18,384	12,521	21,975	17,960	2,101	0	0	0	3,677	16,808	15,175	20,485	18,753	14,879	21,535	14,657
10133000	330400-Clearwell	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10133100	331001-TD Mains Not Classifie	380,210	488,929	561,646	595,678	548,405	10,488,322	448,342	307,425	144,457	197,463	264,785	294,077	403,837	524,355	569,537	1,863,490	4,427,313	3,037,054
10133100	331100-TD Mains 4in & Less	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10133100	331200-TD Mains 6in to 8in	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10133100	331300-TD Mains 10in to 16in	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10133100	331400-TD Mains 18in & Grtr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10133300	333000-Services	209,909	214,144	188,128	186,577	152,321	154,809	147,007	161,031	186,118	209,676	224,058	217,269	234,932	217,188	185,161	195,940	148,081	408,756
10133410	334100-Meters	335,719	159,450	149,229	80,784	76,161	59,033	50,250	341,366	153,255	522,878	678,672	497,423	389,833	171,139	122,558	90,440	72,979	58,972
10133410	334110-Meters Bronze Case	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10133410	334120-Meters Plastic Case	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10133410	334130-Meters Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10133410	334131-Meter Reading Units	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10133420	334200-Meter Installations	0	0	0	0	0	0	0	0	0	0	0	0	56,564	5,936	0	0	0	0
10133410	334300-Meter Vaults	0	0	0	0	0	0	0	0	0	0	0	0	90,502	9,498	0	0	0	0
10133500	335000-Hydrants	63,075	69,307	72,499	93,978	55,478	51,841	49,325	39,562	42,095	40,729	47,167	52,870	65,500	73,032	76,516	131,248	154,812	116,518
10133910	339100-Other P/E-Intangible	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10133910	339600-Other P/E-CPS	0	0	0	0	0	0	0	8,929	8,929	8,929	8,929	0	0	0	0	0	0	0
10134010	340100-Office Furniture & Eq	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10134010	340210-Comp & Periph Mainf	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10134010	340220-Comp & Periph Perso	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10134010	340230-Comp & Periph Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10134010	340240-Comp & Periph Capita	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10134010	340300-Computer Software	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10134010	340320-Comp Software Perso	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10134010	340325-Comp Software Custo	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10134010	340330-Comp Software Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10134010	340500-Other Office Equipme	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10134100	341100-Trans Equip Lt Duty Tr	109,200	0	0	0	52,000	0	0	0	0	0	15,253	18,027	115,440	0	0	36,746	0	0
10134100	341200-Trans Equip Hvy Duty	109,200	0	0	0	52,000	0	0	0	0	0	15,253	18,027	115,440	0	0	36,746	0	0

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		Jul-2013	Aug-2013	Sep-2013	Oct-2013	Nov-2013	Dec-2013	Jan-2014	Feb-2014	Mar-2014	Apr-2014	May-2014	Jun-2014	Jul-2014	Aug-2014	Sep-2014	Oct-2014	Nov-2014	Dec-2014
10134100	341300-Trans Equip Autos	112,509	0	0	0	53,576	0	0	0	0	0	15,715	18,573	118,938	0	0	37,860	0	0
10134100	341400-Trans Equip Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10134200	342000-Stores Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10134300	343000-Tools,Shop,Garage Eq	5,253	105,048	0	0	0	0	0	0	10,505	10,505	78,788	67,100	89,292	47,273	0	40,106	0	0
10134400	344000-Laboratory Equipmen	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10134500	345000-Power Operated Equi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10134600	346100-Comm Equip Non-Tel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10134600	346190-Remote Control & Ins	12,500	2,500	321,658	10,505	4,727	69,209	26,392	321,734	107,219	107,219	107,219	107,220	0	0	43,787	17,758	0	26,263
10134600	346200-Comm Equip Telepho	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10134700	347000-Misc Equipment	12,500	2,500	0	0	0	0	0	0	0	0	0	0	0	0	43,787	2,000	0	0
10134800	348000-Other Tangible Prope	0	0	0	0	0	0	0	1,576	1,576	1,576	1,576	0	0	0	0	0	0	0
10135420	354200-WW Struct & Imp Col	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10134010	340315-Comp Software Speci	127,963	123,648	117,797	113,965	65,618	64,273	38,834	37,851	271,176	0	0	0	0	0	0	0	0	0
10133930	339300-Other P/E-Treatment	12,500	2,500	0	0	0	0	0	0	0	0	0	0	0	0	43,787	2,000	0	0
	TOTAL UTILITY PLANT IN SERV	1,677,835	1,473,567	1,647,321	1,280,234	1,327,303	15,539,119	789,186	1,224,178	925,331	1,098,975	1,515,194	1,469,171	1,863,542	1,263,775	2,127,886	2,690,657	5,050,053	3,825,643

Kentucky-American Water Company
Segregation of Tax Basis Property
CASE NO. XXX

Total Additions 2013 18,106,787
Total Land 616 18,106,171

	Jul-2013	Aug-2013	Sep-2013	Oct-2013	Nov-2013	Dec-2013	Jan-2014	Feb-2014	Mar-2014	Apr-2014	May-2014	Jun-2014	Jul-2014	Aug-2014	Sep-2014	Oct-2014	Nov-2014	Dec-2014
WATER PROPERTY	$725,377	$802,653	$991,374	$596,582	$435,368	$14,150,969	$396,947	$813,641	$417,081	$640,920	$905,947	$860,163	$982,824	$746,636	$1,475,024	$1,936,884	$4,348,961	$2,780,318
OFFICE FURN. & FIX.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOFTWARE	127,963	123,648	117,797	113,965	65,618	64,273	38,834	37,851	271,176	0	0	0	0	0	0	0	0	0
LIGHT TRUCKS	109,200	0	0	0	52,000	0	0	0	0	0	15,253	18,027	115,440	0	0	36,746	0	0
CARS	112,509	0	0	0	53,576	0	0	0	0	0	15,715	18,573	118,938	0	0	37,860	0	0
HEAVY TRUCKS	109,200	0	0	0	52,000	0	0	0	0	0	15,253	18,027	115,440	0	0	36,746	0	0
OFFICE EQUIPMENT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COMPUTER EQUIPMENT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BUILDINGS	68,283	130,974	126,060	123,620	135,171	98,099	8,403	0	0	0	35,717	77,737	92,215	92,444	243,583	133,050	117,656	90,141
Land	0	0	0	0	0	362,419	388	228	0	0	0	0	0	0	0	0	0	0
Total Tax Basis Property	1,252,532	1,057,275	1,235,231	834,167	793,732	14,675,759	444,573	851,719	688,257	640,920	987,886	992,526	1,424,856	839,080	1,718,607	2,181,288	4,466,617	2,870,458
Check Total before Temporary D	425,304	416,292	412,090	446,067	533,571	863,360	344,614	372,459	237,074	458,055	527,308	476,645	438,686	424,695	409,279	509,369	583,436	955,184
Book AFUDC	15,117	16,776	13,789	13,675	13,511	579,932	7,534	7,385	4,356	4,610	6,271	8,625	12,081	9,620	23,751	37,227	88,129	79,774
Tax AFUDC	911	1,011	831	799	787	60,043	437	420	248	262	357	491	687	547	1,352	2,118	5,015	4,540
Net Non-taxable Cust Adv/CIA	172,250	180,700	195,700	190,700	303,880	154,180	192,870	133,180	122,870	180,080	175,390	179,770	172,250	180,700	175,700	210,700	303,880	76,660
Repairs	238,848	219,828	203,432	242,491	216,967	189,291	144,647	232,315	110,096	273,627	346,004	288,740	255,042	234,923	211,180	263,561	196,442	803,290
Bonus Depreciation																		
Total Net Temporary Differen	186,456	196,464	208,657	203,576	316,604	674,068	199,967	140,144	126,979	184,428	181,304	187,905	183,644	189,772	198,100	245,809	386,994	151,894
Check Total	238,848	219,828	203,432	242,491	216,967	189,291	144,647	232,315	110,096	273,627	346,004	288,740	255,042	234,923	211,180	263,561	196,442	803,290

KENTUCKY-AMERICAN WATER COMPANY
TAX BASIS WATER PROPERTY - DEPRECIATION EXPENSE - FEDERAL
CASE NO. XXX
For the year 2012-2014

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Exhibits\Taxes\[KY Tax Depreciation 2012-2014.xlsx]Tax Depr FED

TWENTY-FIVE YEAR PROPERTY		Oct-2012	Nov-2012	Dec-2012	Jan-2013	Feb-2013	Mar-2013	Apr-2013	May-2013	Jun-2013	Jul-2013	Aug-2013	Sep-2013	Oct-2013	Nov-2013	Dec-2013	Jan-2014
WATER PROPERTY	0	300,131	668,763	1,160,982	672,281	277,117	1,325,614	4,453,980	796,764	1,327,113	725,377	802,653	991,374	596,582	435,368	14,150,969	396,947
N.D.B. (LINE-8 @100%)	0	300,131	668,763	1,160,982	672,281	277,117	1,325,614	4,453,980	796,764	1,327,113	725,377	802,653	991,374	596,582	435,368	14,150,969	396,947
ACCUMULATED	0	300,131	968,894	2,129,876	2,802,157	3,079,274	4,404,888	8,858,869	9,655,633	10,982,745	11,708,122	12,510,775	13,502,150	14,098,732	14,534,100	28,685,069	29,082,016
REGULAR DEPRECIATION	0	6,003	13,375	23,220	13,446	5,542	26,512	89,080	15,935	26,542	14,508	16,053	19,827	11,932	8,707	283,019	7,939
ACCUM DEPRECIATION	0	6,003	19,378	42,598	56,044	61,586	88,098	177,178	193,113	219,655	234,163	250,216	270,043	281,975	290,682	573,701	581,640
SEVEN YEAR PROPERTY																	
OFFICE FURN. & FIX.	0	65,533	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N.D.B. (LINES 17-19 @100%)	0	65,533	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACCUMULATED	0	65,533	65,533	65,533	65,533	65,533	65,533	65,533	65,533	65,533	65,533	65,533	65,533	65,533	65,533	65,533	65,533
DEPRECIATION	0	9,365	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACCUM DEPRECIATION	0	9,365	9,365	9,365	9,365	9,365	9,365	9,365	9,365	9,365	9,365	9,365	9,365	9,365	9,365	9,365	9,365
FIVE YEAR PROPERTY																	
LIGHT TRUCKS	0	17,086	5,060	11,660	0	0	0	0	17,333	0	109,200	0	0	0	52,000	0	0
CARS	0	17,628	5,214	12,014	0	0	0	0	17,859	0	112,509	0	0	0	53,576	0	0
HEAVY TRUCKS	0	17,188	5,060	11,660	0	0	0	0	17,333	0	109,200	0	0	0	52,000	0	0
OFFICE EQUIPMENT	0	46,734	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COMPUTER EQUIPMENT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N.D.B. (LINES 17-19 @100%)	0	98,636	15,335	35,335	0	0	0	0	52,525	0	330,908	0	0	0	157,575	0	0
ACCUMULATED	0	98,636	113,971	149,305	149,305	149,305	149,305	149,305	201,830	201,830	532,738	532,738	532,738	532,738	690,313	690,313	690,313
DEPRECIATION	0	19,727	3,067	7,067	0	0	0	0	10,505	0	66,182	0	0	0	31,515	0	0
ACCUM DEPRECIATION	0	19,727	22,794	29,861	29,861	29,861	29,861	29,861	40,366	40,366	106,548	106,548	106,548	106,548	138,063	138,063	138,063
THREE YEAR PROPERTY																	
SOFTWARE	0	37,200	28,517	28,469	73,664	151,610	5,587	5,587	5,760,686	109,646	127,963	123,648	117,797	113,965	65,618	64,273	38,834
N.D.B. (LINES 17-19 @100%)	0	37,200	28,517	28,469	73,664	151,610	5,587	5,587	5,760,686	109,646	127,963	123,648	117,797	113,965	65,618	64,273	38,834
ACCUMULATED	0	37,200	65,716	94,185	167,849	319,459	325,047	330,634	6,091,320	6,200,966	6,328,930	6,452,577	6,570,374	6,684,339	6,749,957	6,814,229	6,853,063
DEPRECIATION	0	12,399	9,505	9,489	24,552	50,532	1,862	1,862	1,920,037	36,545	42,650	41,212	39,262	37,985	21,870	21,422	12,943
ACCUM DEPRECIATION	0	12,399	21,904	31,393	55,945	106,477	108,339	110,201	2,030,238	2,066,783	2,109,433	2,150,645	2,189,907	2,227,892	2,249,762	2,271,184	2,284,127
REAL PROPERTY																	
BUILDINGS	0	23,707	58,557	122,555	106,502	99,196	0	0	37,608	97,708	68,283	130,974	126,060	123,620	135,171	98,099	8,403
ACCUMULATED	0	23,707	82,264	204,819	311,321	410,518	410,518	410,518	448,126	545,834	614,117	745,091	871,151	994,771	1,129,942	1,228,041	1,236,444
DEPRECIATION	0	127	188	131	2,621	2,229	0	0	604	1,359	804	1,261	944	661	434	105	207
ACCUM DEPRECIATION	0	127	315	446	3,067	5,296	5,296	5,296	5,900	7,259	8,063	9,324	10,268	10,929	11,363	11,468	11,675
TOTAL ACCUM. DEPR.	0	47,621	73,756	113,663	154,282	212,585	240,959	331,901	2,278,982	2,343,428	2,467,572	2,526,098	2,586,131	2,636,709	2,699,235	3,003,781	3,024,870
LESS: PROV. YEAR TO DATE	0	0	15,874	44,815	0	12,857	31,014	52,008	83,108	357,592	641,283	945,664	1,261,751	1,592,846	1,940,800	2,320,018	0
SUBTOTAL	0	47,621	57,882	68,848	154,282	199,728	209,945	279,893	2,195,874	1,985,836	1,826,289	1,580,434	1,324,380	1,043,863	758,435	683,763	3,024,870
REMAINING PERIODS	5	3	2	1	12	11	10	9	8	7	6	5	4	3	2	1	12
MONTHLY PROV. ON CURRENT ADDITIONS	0	15,874	28,941	68,848	12,857	18,157	20,995	31,099	274,484	283,691	304,382	316,087	331,095	347,954	379,217	683,763	252,073
DEPRECIATION ON PROPERTY @																	
2011&Prior UPIS Projected	0	906,790	906,790	906,790	839,735	839,735	839,735	839,735	839,735	839,735	839,735	839,735	839,735	839,735	839,735	839,735	794,040
Current Year Regular Depreciation	0	15,874	28,941	68,848	12,857	18,157	20,995	31,099	274,484	283,691	304,382	316,087	331,095	347,954	379,217	683,763	252,073
Current Year Bonus Depreciation		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Year 2 & 3 Depreciation	0	0	0	0	76,608	76,608	76,608	76,608	76,608	76,608	76,608	76,608	76,608	76,608	76,608	76,608	365,534
TOTAL DEPRECIATION	0	922,663	935,731	975,638	929,200	934,500	937,337	947,442	1,190,827	1,200,034	1,220,724	1,232,429	1,247,438	1,264,297	1,295,560	1,600,106	1,411,646
ACCUMULATED	0	922,663	1,858,394	2,834,032	3,763,232	4,697,732	5,635,069	6,582,511	7,773,337	8,973,371	10,194,095	11,426,525	12,673,962	13,938,259	15,233,819	16,833,925	18,245,572
Accum Depr on 2008-09 Additions	0	15,874	44,815	113,663	126,520	144,677	165,671	196,771	471,255	754,946	1,059,327	1,375,414	1,706,509	2,054,463	2,433,681	3,117,444	3,369,517
Numeric Month	8	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1

KENTUCKY-AMERICAN WATER COM
TAX BASIS WATER PROPERTY - DEPRECIATIC
CASE NO. XXX
For the year 2012-2014

W/P - 1-8
Exhibits\Taxes\[KY Tax Depreciation 2012-2014.xlsx]Tax Depr FED

TWENTY-FIVE YEAR PROPERTY	Feb-2014	Mar-2014	Apr-2014	May-2014	Jun-2014	Jul-2014	Aug-2014	Sep-2014	Oct-2014	Nov-2014	Dec-2014	
WATER PROPERTY	813,641	417,081	640,920	905,947	860,163	982,824	746,636	1,475,024	1,936,884	4,348,961	2,780,318	44,990,416
N.D.B. (LINE-8 @100%)	813,641	417,081	640,920	905,947	860,163	982,824	746,636	1,475,024	1,936,884	4,348,961	2,780,318	44,990,416
ACCUMULATED	29,895,657	30,312,738	30,953,658	31,859,605	32,719,769	33,702,593	34,449,228	35,924,252	37,861,137	42,210,098	44,990,416	
REGULAR DEPRECIATION	16,273	8,342	12,818	18,119	17,203	19,656	14,933	29,500	38,738	86,979	55,606	
ACCUM DEPRECIATION	597,913	606,255	619,073	637,192	654,395	674,051	688,984	718,484	757,222	844,201	899,807	
SEVEN YEAR PROPERTY												
OFFICE FURN. & FIX.	0	0	0	0	0	0	0	0	0	0	0	65,533
N.D.B. (LINES 17-19 @100%)	0	0	0	0	0	0	0	0	0	0	0	65,533
ACCUMULATED	65,533	65,533	65,533	65,533	65,533	65,533	65,533	65,533	65,533	65,533	65,533	
DEPRECIATION	0	0	0	0	0	0	0	0	0	0	0	
ACCUM DEPRECIATION	9,365	9,365	9,365	9,365	9,365	9,365	9,365	9,365	9,365	9,365	9,365	
FIVE YEAR PROPERTY												
LIGHT TRUCKS	0	0	0	15,253	18,027	115,440	0	0	36,746	0	0	397,805
CARS	0	0	0	15,715	18,573	118,938	0	0	37,860	0	0	409,885
HEAVY TRUCKS	0	0	0	15,253	18,027	115,440	0	0	36,746	0	0	397,908
OFFICE EQUIPMENT	0	0	0	0	0	0	0	0	0	0	0	46,734
COMPUTER EQUIPMENT	0	0	0	0	0	0	0	0	0	0	0	0
N.D.B. (LINES 17-19 @100%)	0	0	0	46,222	54,626	349,817	0	0	111,353	0	0	1,252,331
ACCUMULATED	690,313	690,313	690,313	736,535	791,161	1,140,978	1,140,978	1,140,978	1,252,331	1,252,331	1,252,331	
DEPRECIATION	0	0	0	9,244	10,925	69,963	0	0	22,271	0	0	
ACCUM DEPRECIATION	138,063	138,063	138,063	147,307	158,232	228,195	228,195	228,195	250,466	250,466	250,466	
THREE YEAR PROPERTY												
SOFTWARE	37,851	271,176	0	0	0	0	0	0	0	0	0	7,162,089
N.D.B. (LINES 17-19 @100%)	37,851	271,176	0	0	0	0	0	0	0	0	0	7,162,089
ACCUMULATED	6,890,913	7,162,089	7,162,089	7,162,089	7,162,089	7,162,089	7,162,089	7,162,089	7,162,089	7,162,089	7,162,089	
DEPRECIATION	12,616	90,383	0	0	0	0	0	0	0	0	0	
ACCUM DEPRECIATION	2,296,743	2,387,126	2,387,126	2,387,126	2,387,126	2,387,126	2,387,126	2,387,126	2,387,126	2,387,126	2,387,126	
REAL PROPERTY												
BUILDINGS	0	0	0	35,717	77,737	92,215	92,444	243,583	133,050	117,656	90,141	2,118,987
ACCUMULATED	1,236,444	1,236,444	1,236,444	1,272,161	1,349,898	1,442,113	1,534,557	1,778,140	1,911,190	2,028,846	2,118,987	
DEPRECIATION	0	0	0	573	1,081	1,085	890	1,824	712	378	96	
ACCUM DEPRECIATION	11,675	11,675	11,675	12,248	13,329	14,414	15,304	17,128	17,840	18,218	18,314	
TOTAL ACCUM. DEPR.	3,053,759	3,152,484	3,165,302	3,193,238	3,222,447	3,313,151	3,328,974	3,360,298	3,422,019	3,509,376	3,565,078	
LESS: PROV. YEAR TO DATE	252,073	506,771	771,343	1,037,338	1,306,826	1,580,486	1,869,263	2,161,205	2,460,979	2,781,325	3,145,351	
SUBTOTAL	2,801,687	2,645,713	2,393,959	2,155,900	1,915,621	1,732,665	1,459,711	1,199,093	961,040	728,051	419,727	
REMAINING PERIODS	11	10	9	8	7	6	5	4	3	2	1	
MONTHLY PROV.	254,699	264,571	265,995	269,487	273,660	288,778	291,942	299,773	320,347	364,025	419,727	6,682,522
ON CURRENT ADDITIONS												
											Total Tax Basis Additions	55,589,357
DEPRECIATION ON PROPERTY @												
2011&Prior UPIS Projected	794,040	794,040	794,040	794,040	794,040	794,040	794,040	794,040	794,040	794,040	794,040	22,325,662
Current Year Regular Depreciation	254,699	264,571	265,995	269,487	273,660	288,778	291,942	299,773	320,347	364,025	419,727	6,682,522
Current Year Bonus Depreciation	0	0	0	0	0	0	0	0	0	0		0
Year 2 & 3 Depreciation	365,534	365,534	365,534	365,534	365,534	365,534	365,534	365,534	365,534	365,534	365,534	5,305,704
TOTAL DEPRECIATION	1,414,273	1,424,145	1,425,569	1,429,061	1,433,234	1,448,351	1,451,516	1,459,347	1,479,921	1,523,599	1,579,301	34,313,888
ACCUMULATED	19,659,844	21,083,989	22,509,558	23,938,620	25,371,853	26,820,205	28,271,721	29,731,068	31,210,988	32,734,587	34,313,888	
Accum Depr on 2008-09 Additions	3,624,215	3,888,787	4,154,782	4,424,270	4,697,930	4,986,707	5,278,649	5,578,423	5,898,769	6,262,795	6,682,522	
Numeric Month	2	3	4	5	6	7	8	9	10	11	12	

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness:

11. Provide separate rate base, capital structure, income statement, and revenue requirement for the Central and Northern Divisions. Provide all workpapers, state all assumptions, and show all calculations used to derive this Response.

Response:

This data request is the subject of the Company's pending March 12, 2013 Motion for Relief and/or Clarification.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Keith Cartier

12. Refer to Kentucky-American's Response to Lexington-Fayette Urban County Government's ("LFUCG") First Request for Information, Item 17.

    a. State the number of instances during the period from January 1, 1990 to December 31, 2012 that LFUCG has requested that a public fire hydrant be inspected outside of the normal annual inspections that Kentucky-American performs.

    b. State the number of instances during the period from January 1, 1990 to December 31, 2012 that Lexington Fire Department has requested that a public fire hydrant be inspected outside of the normal annual inspections that Kentucky-American performs.

    c. State the number of reported instances during the period from January 1, 1990 to December 31, 2012 that a public fire hydrant has been inspected during a normal annual inspection and then failed to operate within normal parameters.

Response:

a. KAW is not aware of any instances of LFUCG requesting for a hydrant to be inspected outside the normal hydrant inspection.

b. KAW is not aware of any instances of the Lexington Fire Department requesting for a hydrant to be inspected outside the normal hydrant inspection.

c. KAW is not aware of any instances.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Keith Cartier

13. Refer to Kentucky-American's Response to LFUCG's First Request for Information, Item 21

a. Describe how Kentucky-American would become aware that a private fire hydrant is "no longer operable."

b. Describe how Kentucky-American would become aware that an owner of a private fire hydrant has taken the hydrant out of service.

c. Describe how Kentucky-American would become aware a private fire hydrant has failed to operate.

Response:

a. The property owner would be subject to notifying the respective fire department, state fire marshal, build code enforcement and property insurance provider. They are not required to notify KAW if a private hydrant is no longer operable.

b. The property owner would be subject to notifying the respective fire department, state fire marshal, build code enforcement and property insurance provider. They are not required to notify KAW if a private hydrant is taken out of service.

c. The property owner would be subject to notifying the respective fire department, state fire marshal, build code enforcement and property insurance provider. They are not required to notify KAW if a private hydrant failed to operate.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness:

14. Assume the Commission determines that a unified rate approach should be abandoned and that rates for each division within Kentucky-American's operations must be based on that division's cost of service.

    a. Provide a revised Cost of Service Study that establishes rates for the Northern Division and Central Division, separately, based upon the cost of serving each division. This study should include:

        (1) A breakdown of costs assigned to the Northern Division.

        (2) A breakdown of costs assigned to the Central Division.

        (3) A billing analysis for each division with sufficient customer detail as to allow for verification of the rates.

    b. List and describe the capital costs that are currently assigned to both divisions jointly that would require separate assignment if separate rates are established for each division.

Response:

This data request is the subject of the Company's pending March 12, 2013 Motion for Relief and/or Clarification.

KENTUCKY-AMERICAN WATER COMPANY
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COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Linda C. Bridwell

15. State whether Kentucky-American agrees with the following statement: "The most appropriate rate mechanism for recovery of the costs associated with the Northern Division Connection Project is a surcharge on Northern Division customers." Explain.

Response:

No, KAW does not agree.

With the encouragement and approval from the Commission and agreement from intervenors, KAW began using a single tariff rate structure in 2007, and KAW continues to believe a singe tariff structure is efficient and consistent with sound ratemaking policy. One of the benefits of a single tariff structure is for all customers to share equally in the cost to operate the entire utility. This helps to smooth out the effects of investments and expenses that may fluctuate by location at different times. Different parts of the system require different components for service, and different timing for implementation. Without a single tariff structure, KAW, the Commission, and other interested parties would have constant questions such as: when and at what level is a surcharge appropriate; should the cost of a tank be recovered through a surcharge only on customers that live within a certain distance from the tank; and should a main replacement in downtown Lexington be recovered through a surcharge for customers along that street?

KAW does not find it reasonable to impose a location-specific surcharge for the Northern Division Connection Project. KAW believes that this would be particularly unreasonable given recent history. During the 2008 and 2010 rate cases, when recovery was sought for KRS II and the associated 42" pipeline and booster station designed to transmit water to the Central Division, there was no mention of a surcharge being used for its recovery. The impact of the 2008 case was an estimated $3.60 / month per residential customer. The impact of the 2010 case was an estimated $7.18 / month per residential customer. Northern Division customers have been sharing these costs. In the current proceeding, by contrast, the impact of the Northern Division Connection project is expected to be approximately $0.28 / month. Given that Northern Division customers have been paying approximately $10.78 / month for the last several years for the KRS II project, it seems particularly ill-timed to now impose a surcharge to prevent the Central Division customers from bearing a $0.28 / month cost for a project benefiting the Northern Division. It would be extremely difficult for a surcharge to recognize and credit the shared single tariff recovery of those KRS II expenses for recent years.

Finally, the recovery of the cost of assets is achieved slowly over the expected service life of the assets. Unlike a traditional debt repayment similar to a home mortgage, KAW does not "pay off" the construction costs, but slowly recovers through depreciation the prorated annual portion of the cost of construction, while paying debt service and return on equity. A shorter period for a surcharge unfairly puts the weight of recovery on customers much sooner than normal utility ratemaking processes would allow.

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Witness: Linda C. Bridwell

16. Assume that the Commission determines that a surcharge on Northern Division customers is the most appropriate rate mechanism for recovery of the costs associated with the Northern Division Connection Project. Describe how Kentucky-American would calculate the level of such surcharge. This description should include the time period over which the surcharge should be collected, the costs to be included in the surcharge, and any credits that Northern District customers should receive for benefits that Central Division customers derived from the use of facilities that were available to the Central Division only prior to construction of the Northern Division Connection Project. Provide all work papers, state all assumptions, and show all calculations used to derive the response.

Response:

There are many different components and variables that could arguably go into calculating a surcharge, making it extremely difficult to address the presumptions of this request. The first challenge is primarily whether or not a surcharge is the most appropriate rate mechanism for recovery of the costs associated with the Northern Division Connection project, which Kentucky American does not agree and for which no reasoning has been put forth yet in this case. Please refer to the response to Item 15 of this same Request for Information. If the Commission determines that a surcharge is the most appropriate rate mechanism for recovery of the costs associated with the Northern Division Connection, KAW would expect that the Commission would also provide some guidance with regard to how the surcharge would be determined based on that reasoning that has currently not been articulated.

Surcharges are generally developed for short terms, with recovery on what are considered extraordinary, single or infrequent expenditures such as disaster response expenses that are not expected to be ongoing. They are also sometimes called surcharges when they are used for recovery on investments between rate cases that are then incorporated into the next rate case but trued-up on a routine basis. Surcharges are frequently applied for a year or less, however, depending on the nature of the items included in a surcharge. In this case, a single year recovery may not be economically feasible. In this situation, it may be appropriate to identify a surcharge period of three to five years.

Once the time period has been established, the next challenge would be to determine the items that would be appropriate to incorporated into the surcharge. As discussed in the response to Item 15 of this same Request for Information, the recovery of the entire investment of capital over the surcharge period would be not in line with normal ratemaking principles, as the service life of the assets extends up to seventy years. One method may be to include the recovery of the capital investment costs, either in their entirety, or on a revenue requirement period as associated with the surcharge period. With the tax effects of rate base, the revenue requirement for the capital investment will change over the life of the surcharge if it is greater than one year. It would be more appropriate to average the annual projected revenue requirement for the capital investment portion over the surcharge period.

Using the investment only creates an inequity, because in this situation the expenditure of capital is eliminating a significant operating expense. It would be more appropriate to include all of the operating and maintenance expenses and the savings associated with the investment overall in the cost of the surcharge. Again, since this will change each year, it may be more appropriate to average the annual projected revenue requirement over the surcharge period. This changing revenue requirement was demonstrated in response to the Hearing Date Request Item 12 in Case No. 2012-00096.

If it is deemed appropriate that the Northern Division customers be charged a surcharge for the Northern Division Connection Project costs and benefits, they should be credited with the expenditures for supply that simply do not benefit them at all. During this surcharge period, they should receive a credit as part of the surcharge for the cost of the 42" transmission main from KRS II to Newtown Pike, the Woodlake Booster and storage tank. Additionally, the full revenue requirement of the operations of KRS I and Richmond Road station including the Jacobson Reservoir should be credited.

Additionally, there should be careful consideration for the appropriate method, if any, of crediting the Northern Division customers for the prior years' investment in KRS II, the 42" transmission main, and the Woodlake Booster and storage tank for which they derived no benefit. However, this could arguably be considered retroactive ratemaking and be inappropriate in the overall surcharge calculation.

Because of the significant amount of guidance required for developing a surcharge as presumed in this Request for Information, Kentucky American has not made an attempt to calculate any of these potential items at this time, and thus no workpapers, assumptions or calculations have been prepared in this response.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Gary M. VerDouw

17. a. Given that Kentucky-American finances construction with short-term debt that is subsequently converted to long-term debt and equity, explain why Kentucky-American should earn a return on the Distribution System Improvement Charge ("DSIC") investment that compensates it for the weighted cost-of-capital.

b. Explain why, if Kentucky-American is allowed to use the weighted cost-of-capital to calculate the return on the DISC investment, Kentucky-American would not be overcompensated in the short-term.

Response:

a. The Company uses short term debt to finance various aspects of its operations on a short term basis including capital construction, which it converts to long-term debt and equity at various times, often at multiple times within a year. The capital program is typically funded by capital committed well in advance of the expenditure; therefore, while short term debt may help with immediate liquidity, the long term funding is sourced from the Company's long term debt and equity. The overall weighted cost of capital set in a base rate case takes this timing into account by including long-term debt, short-term debt and equity; therefore it is the appropriate factor to use for the purpose of setting DSIC rates.

b. The proposed DSIC Rider is a regulatory rate mechanism designed to provide a partial solution to the need for ongoing and accelerated replacement of qualified aging distribution system infrastructure beyond the time periods recognized in base rates. The proposed DSIC will not completely eliminate all the factors that contribute to regulatory lag and its negative impact on the ability of the Company to earn the authorized return on and return of invested capital. As such, the Company does not agree that it will be overcompensated.

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COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: **Keith Cartier**

18. At page 14 of his direct testimony, Lance Williams states: "The areas where the system has exceeded its useful life have restricted flow, as well as increased potential for main breaks." State for each year from 2003 through 2012 the number of main breaks that Kentucky-American experienced on water mains that were six inches in diameter or smaller and 75 years old or older, the cost to repair the break, and the estimated water loss.

Response:

Year	Count	Total Repair Cost	Total Gallons Lost
2003	19	11,957	
2004	17	14,954	1,561,680
2005	32	29,569	148,381,910
2006	10	7,170	306,960
2007	31	25,442	10,579,659
2008	28	21,635	2,636,250
2009	39	24,160	3,996,620
2010	24	27,806	4,631,773
2011	13	13,170	821,550
2012	11	10,842	2,145,220

Water loss data is not available for 2003.

KENTUCKY-AMERICAN WATER COMPANY
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Witness: Gary M. VerDouw

19. List each American Water subsidiary that currently uses a tariff rider similar to Kentucky-American's proposed DSIC and state the frequency of its general rate adjustment proceedings for the 10 years prior to implementing the tariff rider and the frequency of general rate adjustment proceedings since adopting the tariff rider.

Response:

Please see the attached schedule.

Response to Commission's Third Request for Information
Item 19

Company	Docket No.	Filing Date	Days	Years
Pennsylvania American	R-860397	4/30/1986		
	R-870825	10/2/1987	520.00	1.4
	R-891208	1/27/1989	483.00	1.3
	R-901652	3/16/1990	413.00	1.1
	R-911909	7/19/1991	490.00	1.3
	R-922428	7/24/1992	371.00	1.0
	R-932670	10/28/1993	461.00	1.3
	R-943231	10/28/1994	365.00	1.0
	DSIC Authorized in 1996 with first DSIC Effective 1/1/1997			
	R-973944	4/4/1997	889.00	2.4
	R-994638	4/30/1999	756.00	2.1
	R-00016339	4/27/2001	728.00	2.0
	R-00038304	4/30/2003	733.00	2.0
	R-00072229	4/27/2007	1,458.00	4.0
	R-2009-2097323	4/24/2009	728.00	2.0
	R-2011-2232243	4/29/2011	735.00	2.0
Missouri American	WR 93-204	12/23/1992		
	WR 94-166	11/24/1993	336.00	0.9
	WR 95-145	10/28/1994	338.00	0.9
	WR 96-263	2/9/1996	469.00	1.3
	WR 97-382	3/14/1997	399.00	1.1
	WR 2000-281	10/15/1999	945.00	2.6
	WR 2001-0844	6/21/2001	615.00	1.7
	WR-2003-0500	5/19/2003	697.00	1.9
	ISRS (DSIC) Authorized 2003 with first ISRS rates Effective 12/31/2003			
	WR-2007-0216	12/15/2006	1,306.00	3.6
	WR-2008-0311	3/31/2008	472.00	1.3
	WR-2010-0131	10/30/2009	578.00	1.6
	WR-2011-0337	6/30/2011	608.00	1.7
Indiana American	Cause No. 40103	12/14/1994		
	Cause No. 40703	12/6/1996	723.00	2.0
	Cause No. 41320	10/28/1998	691.00	1.9
	Cause No. 42049 (1)	6/29/2001	975.00	2.7 (1)
	DSIC Authorized in 2000 with first DSIC Effective 3/2003			
	Cause No. 42520	9/30/2003	823.00	2.3
	Cause No. 43187	12/1/2006	1,158.00	3.2
	Cause No. 43680	4/30/2009	881.00	2.4
	Cause No. 44022	5/2/2011	732.00	2.0

Illinois American	Docket 95-0076	2/1/1995			
	Docket 97-0102	1/31/1997	730.00	2.0	
	Docket 00-0340	4/17/2000	1,172.00	3.2	
	Docket 02-0690	9/20/2002	886.00	2.4	
	QIP (DSIC) Authorized 2/1/2005 with first QIP rates Effective 1/1/2006				
	Docket 07-0507	8/31/2007	1,806.00	4.9	
	Docket 09-0319	5/29/2009	637.00	1.7	
	Docket 11-0767	10/27/2011	881.00	2.4	
Long Island Water Corp.					
	Case 93-W-xxxx (2)	4/30/1993			(2)
	Case 98-W-0475 (3)	3/30/1998	1,795.00	4.9	(3)
	Case 04-W-0577 (2)	5/3/2004	2,226.00	6.1	(2)
	DSIC Authorized Case 3/21/2005 with first DSIC rates Effective 12/1/2006				
	Case 07-W-0508 (2)	5/1/2007	1,093.00	3.0	(2)
	Case 11-W-2011 (2)	4/29/2011	1,459.00	4.0	(2)
New Jersey American	WR03070511	7/10/2003			
	WR06030257	3/31/2006	995.00	2.7	
	WR08010020	1/14/2008	654.00	1.8	
	WR10040260	4/9/2010	816.00	2.2	
	WR11070460	7/29/2011	476.00	1.3	
	DSIC Authorized 6/4/2012 with first DSIC rates to Effective no sooner than 6/1/2013				
	No DSIC filings made to date				

Notes:

(1) Authorized two-year step rate increase plan.

(2) Authorized three-year step rate increase plan.

(3) Authorized three-year step rate increase plan which was subsequently modified in part and extended through 3/31/2005.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Keith Cartier / Linda C. Bridwell

20. Refer to Kentucky-American's Response to Commission Staff's Second Request for Information, Item 50. Provide all work papers, show all calculations and state all assumptions used to derive the estimated construction/replacement cost of $190 per linear foot.

Response:

The $190 per linear foot estimated construction/replacement cost was based on an average cost per foot of $187.93 from 2012 Item B replacement projects. Please refer to the attached schedule.

However, as also demonstrated on the attached schedule, when larger projects are included, the economies of scale can bring the average price down. With the inclusion of the replacement project on US 25 which was completed as an Investment Project, the 2012 average cost per foot drops to $125. Item B pricing over the last three years has averaged $153 per foot, while total replacement projects over the last three years have averaged $171 per foot.

This demonstrates the opportunities for cost savings through increased main replacement projects on a per foot basis that may be realized with the approval of the DSIC mechanism.

Response to PSC DR 3 NUM 20
Attachment

WBS Number	Project Description	Completion Date	Total Project Cost	Pipe Size	Footage	$ Charged (instead of %)	% of Total Charged	$ Per Foot
R12-02B1.12-P-0001	SPARKS RD REPLACEMENT	09/04/12	$ 132,504.15	8" DI	1,215	$ 131,179.11	99%	$ 107.97
R12-02B1.12-P-0008	PERRY ST REPLACEMENT PROJECT	10/17/12	$ 35,271.78	3" PVC	359	$ 35,271.78	100%	$ 98.25
R12-02B1.12-P-0009	MAIN RELO FOR 516 LORENZO PL	12/06/12	$ 11,133.31	8" DI	86	$ 11,133.31	100%	$ 129.46
R12-02B1.11-P-0007	REP TRANSYLVANIA PARK PROJECT	05/09/12	$ 429,804.63	12" DI	6	$ 42,980.46	10%	$ 7,163.41
R12-02B1.11-P-0007	REP TRANSYLVANIA PARK PROJECT	05/09/12	$ 429,804.63	8" DI	1,522	$ 171,921.85	40%	$ 112.96
R12-02B1.11-P-0007	REP TRANSYLVANIA PARK PROJECT	05/09/12	$ 429,804.63	6" DI	44	$ 214,902.32	50%	$ 4,884.14
2012 Total Item B Only				**Total**	**3,232**	**$ 607,388.83**		**$ 187.93**
I12-020009-01	RELO US 25 MAIN KTC 7-122.50	09/27/12	$ 1,462,496.51	6" DI	714	$ 146,249.65	10%	$ 204.83
I12-020009-01	RELO US 25 MAIN KTC 7-122.50	09/27/12	$ 1,462,496.51	24" DI	3,546	$ 877,497.91	60%	$ 247.46
I12-020009-02	RELO US 25 MAIN KTC 7-122.50	09/27/12	$ 1,386,612.51	3" PVC	1,275	$ 69,330.63	5%	$ 54.38
I12-020009-02	RELO US 25 MAIN KTC 7-122.50	09/27/12	$ 1,386,612.51	6" DI	170	$ 41,598.38	3%	$ 244.70
I12-020009-02	RELO US 25 MAIN KTC 7-122.50	09/27/12	$ 1,386,612.51	8" DI	781	$ 69,330.63	5%	$ 88.77
I12-020009-02	RELO US 25 MAIN KTC 7-122.50	09/27/12	$ 1,386,612.51	12" DI	11,242	$ 748,770.76	54%	$ 66.60
I12-020009-02	RELO US 25 MAIN KTC 7-122.50	09/27/12	$ 1,386,612.51	16" DI	1,004	$ 180,259.63	13%	$ 179.54
2012 Total Replacement				**Total**	**21,964**	**$ 2,740,426.39**		**$ 124.77**
R12-02B1.11-P-0001	RICHMOND RD (NEAR McCALLS MILL RD)	07/29/11	$ 60,830.25	4" DI	580	$ 54,747.23	90%	$ 94.39
R12-02B1.11-P-0004	PENMOKEN PARK REPLACEMENT	09/01/11	$ 437,589.56	4" DI	508	$ 87,517.91	20%	$ 172.28
R12-02B1.11-P-0004	PENMOKEN PARK REPLACEMENT	09/01/11	$ 437,589.56	8" DI	1,881	$ 175,035.82	40%	$ 93.05
R12-02B1.11-P-0009	REP BELLAIRE AVE	10/17/11	$ 270,112.08	6" DI	10	$ 8,103.36	3%	$ 810.34
R12-02B1.11-P-0009	REP BELLAIRE AVE	10/17/11	$ 270,112.08	4" DI	158	$ 10,804.48	4%	$ 68.38
R12-02B1.11-P-0009	REP BELLAIRE AVE	10/17/11	$ 270,112.08	8" DI	1,285	$ 216,089.66	80%	$ 168.16
R12-02B1.11-P-0010	VENICE PARK REPLACEMENT	11/04/11	$ 317,896.50	4" DI	150	$ 20,094.00		$ 133.96
R12-02B1.11-P-0010	VENICE PARK REPLACEMENT	11/04/11	$ 317,896.50	8" DI	700	$ 134,388.00		$ 191.98
R12-02B1.11-P-0011	FLORIDA ST MAIN REPLACEMENT	12/31/11	$ 332,618.52	4" DI	44	$ 13,304.74	4%	$ 302.38
R12-02B1.11-P-0011	FLORIDA ST MAIN REPLACEMENT	12/31/11	$ 332,618.52	6" DI	876	$ 99,785.56	30%	$ 113.91
R12-02B1.11-P-0011	FLORIDA ST MAIN REPLACEMENT	12/31/11	$ 332,618.52	8" DI	825	$ 166,309.26	50%	$ 201.59
2011 Total Replacement				**Total**	**7,017**	**$ 986,180.03**		**$ 140.54**
R12-02B1.09-P-0003	MAXWELL ST - ROSE TO WOODLAND	05/26/10	$ 378,598.24	8" DI	1,798	$ 230,944.93	61%	$ 128.45
R12-02B1.10-P-0005	REP 6" DI @ 105 N LIMESTONE	07/09/10	$ 12,598.04	6" DI	80	$ 12,598.04	100%	$ 157.48
R12-02B1.10-P-0007	WARNOCK ST MAIN REPLACEMENT	06/04/10	$ 33,829.32	4" DI	281	$ 33,829.32	100%	$ 120.39
R12-02B1.10-P-0008	REPL WEST SHORT ST	12/27/10	$ 107,800.07	8" DI	577	$ 98,098.06	91%	$ 170.01
R12-02B1.10-P-0010	FAYETTE PARK REPLACEMENT	11/11/10	$ 150,468.30	8" DI	791	$ 144,449.57	96%	$ 182.62
R12-02B1.10-P-0012	REP HANOVER COURT	12/31/10	$ 144,240.38	8" DI	623	$ 86,544.23	60%	$ 138.92
2010 Total Item B Only				**Total**	**4,150**	**$ 606,464.15**		**$ 146.14**
I12-020008-01	SOUTH LIMESTONE REPLACEMENT PH III	08/23/10	$ 549,959.27	4" DI	9	$ 10,999.19	2%	$ 1,222.13
I12-020008-01	SOUTH LIMESTONE REPLACEMENT PH III	08/23/10	$ 549,959.27	6" DI	38	$ 10,999.19	2%	$ 289.45
I12-020008-01	SOUTH LIMESTONE REPLACEMENT PH III	08/23/10	$ 549,959.27	8" DI	29	$ 16,498.78	3%	$ 568.92
I12-020008-01	SOUTH LIMESTONE REPLACEMENT PH III	08/23/10	$ 549,959.27	12" DI	2,676	$ 494,963.34	90%	$ 184.96
I12-020029-01	REP N BROADWAY WATER LINE	12/20/10	$ 3,059,378.25	6" DI	63	$ 45,890.67	2%	$ 728.42
I12-020029-01	REP N BROADWAY WATER LINE	12/20/10	$ 3,059,378.25	8" DI	1,591	$ 388,846.98	13%	$ 244.40
I12-020029-01	REP N BROADWAY WATER LINE	12/20/10	$ 3,059,378.25	12" DI	5,442	$ 2,071,505.01	68%	$ 380.65
2010 Total Replacement				**Total**	**13,998**	**$ 3,646,167.30**		**$ 260.48**
2010-2012 Item B Cost				**Total**	**14,399**	**$ 2,200,033**		**$ 152.79**
2010-2012 Total Replacement Cost				**Total**	**42,979**	**$ 7,372,774**		**$ 171.54**

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Lewis E. Keathley

21. For each of Kentucky-American's last five applications for general rate adjustment, state the percentage of purchased power expense and chemical expense to Kentucky-American's requested revenue requirement and the revenue requirement that the Commission found reasonable. Provide all work papers, state all assumptions, and show all calculations used to derive the response.

Response:

Please refer to the attachment. The attached lists the requested revenue, fuel and power, and chemical amounts for the five previous KAW rate cases, along with the percent of fuel and power to revenue and the percent of chemical to revenue. Additionally, the attached lists the authorized revenue amounts for the five previous rate cases. The percent of the requested fuel and power and chemical costs to commission authorized revenue was calculated.

Please note that the forecasted fuel and power and chemical costs are directly associated with the system delivery presented in each of the rate cases. If the authorized revenue is not using the same system delivery amounts associated with the requested fuel and power and chemical expenses, the ratio of expense to revenue will have limited value.

The information from previous rate cases that was used to prepare this response is attached.

KAW_R_PSCDR3_NUM21
Historic KAW Rate Requests

	2010 - 00036	2008 - 00427	2007 - 00143	2004 - 00103	2000 - 00120
Requested					
Revenue	$ 90,601,774	$ 75,355,346	$ 64,008,762	$ 50,015,105	$ 45,121,368
Fuel and Power	$ 4,375,584	$ 3,598,619	$ 2,986,277	$ 1,922,641	$ 1,946,339
Percent of Fuel and Power to Requested Revenue	4.83%	4.78%	4.67%	3.84%	4.31%
Chemical	$ 1,772,730	$ 2,745,061	$ 1,505,218	$ 1,220,296	$ 1,025,251
Percent of Chemical to Requested Revenue	1.96%	3.64%	2.35%	2.44%	2.27%
Authorized					
Revenue	$ 83,578,625	$ 67,160,712	$ 61,003,297	$ 47,000,964	$ 42,257,699
Authorized					
Fuel and Power	$ 4,375,584	$ 3,598,619	$ 2,986,277	$ 1,922,641	$ 1,946,339
Percent of Fuel and Power Requested to Ordered Revenue	5.24%	5.36%	4.90%	4.09%	4.61%
Chemical	$ 1,772,730	$ 2,745,061	$ 1,505,218	$ 1,220,296	$ 1,025,251
Percent of Chemical Requested to Ordered Revenue	2.12%	4.09%	2.47%	2.60%	2.43%

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ADJUSTMENT OF THE RATES OF KENTUCKY-AMERICAN WATER COMPANY	))	CASE NO. 2000-120

<u>O R D E R</u>

On November 27, 2000, the Commission entered an Order in this proceeding in which it addressed the reasonableness of Kentucky-American Water Company's ("Kentucky-American") proposed rate adjustment and established new rates for water service. Having discovered certain errors concerning the calculation of those rates, the Commission amends its Order to reflect changes discussed below. These amendments reduce the authorized increase in Kentucky-American's annual operating revenues from $2,517,651, or 6.49 percent, to $2,170,680, or 5.57 percent.

<u>Net Investment Rate Base.</u> During the proceeding, Kentucky-American proposed a net adjustment to increase forecasted contributions in aid of construction ("CIAC") by $377,000 to reflect changes in its construction schedules. In our Order of November 27, 2000, we accepted this adjustment.[1] In calculating Kentucky-American's net investment rate base, we decreased rather than increased CIAC by this amount.[2] A revised calculation of Kentucky-American's net investment rate base is set forth in Appendix A to this Order.

[1] Order of November 27, 2000 at 12.

[2] <u>Id.</u> at 33.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO: 2000-120
OVERALL FINANCIAL SUMMARY
FOR THE TWELVE MONTHS ENDED: NOVEMBER 30, 2001

DATA: ___ BASE PERIOD _X_ FORECASTED PERIOD
TYPE OF FILING: _X_ ORIGINAL ___ UPDATED ___ REVISED
WORKPAPER REFERENCE NO(S).: W/P-1

SCHEDULE A
Page 1 of 1
Witness Responsible: C. D. Bush/E. J. Grubb

Line No.	Description	Supporting Schedule Reference	Forecast Jurisdictional Rev Req	Base Period Jurisdictional Rev Req
4	RATE BASE	B-1	$142,427,511	$143,478,120
6	FORECASTED OPERATING INCOME AT CURRENT RATES	C-1	10,661,141	11,216,691
8	EARNED RATE OF RETURN		7.49%	7.82%
10	RATE OF RETURN	J-1	9.58%	9.56%
12	REQUIRED OPERATING INCOME		13,644,556	13,716,508
14	OPERATING INCOME DEFICIENCY		2,983,415	2,499,817
16	GROSS REVENUE CONVERSION FACTOR	H-1	1.6874450	1.6874450
18	REVENUE DEFICIENCY (1)		5,034,349	4,218,304
20	ADJUSTED OPERATING REVENUES	C-1	40,087,019	38,779,879
22	REVENUE REQUIREMENT		$45,121,368	$42,998,183

31 (1) THE COMPANY'S PROPOSED RATES PER EXHIBIT 2 ARE DESIGNED TO PRODUCE
32 ADDITIONAL REVENUES OF APPROXIMATELY $5,034,349

KENTUCKY-AMERICAN WATER COMPANY
CASE NO: 2000-120
OVERALL FINANCIAL SUMMARY
FOR THE TWELVE MONTHS ENDED: NOVEMBER 30, 2001

DATA: ___ BASE PERIOD _X_ FORECASTED PERIOD
TYPE OF FILING: _X_ ORIGINAL ___ UPDATED ___ REVISED
WORKPAPER REFERENCE NO(S).: SCH C-2

SCHEDULE C-1, PAGE 1 OF 1
C. D. Bush/E. J. Grubb

Line No.	Description	Forecasted Return at Current Rates	Proposed Increase	Forecasted Return at Proposed Rates
1				
2				
3	Operating Revenues	$40,087,019	$5,034,349	$45,121,368
4				
5	Operating Expenses			
6				
7	Operation and Maintenance	18,204,761	22,967	18,227,728
8				
9	Depreciation and Amortization	6,071,349	0	6,071,349
10				
11	Taxes Other Than Income	1,867,001	8,800	1,875,801
12				
13	State Income Taxes	692,636	412,713	1,105,349
14				
15	Federal Income Taxes	2,590,131	1,606,454	4,196,585
16				
17	Total Operating Expenses	29,425,878	2,050,934	31,476,812
18				
19	Utility Operating Income	$10,661,141	$2,983,415	$13,644,556
20				
21				
22	Rate Base	$142,427,511		$142,427,511
23				
24				
25	Rate of Return	7.49%		9.58%
26				
27				
28				
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30				
31				
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KENTUCKY-AMERICAN WATER COMPANY
CASE NO: 2000-120
OVERALL FINANCIAL SUMMARY
FOR THE TWELVE MONTHS ENDED: NOVEMBER 30, 2001

DATA: _X_ BASE PERIOD _X_ FORECASTED PERIOD
TYPE OF FILING: _X_ ORIGINAL ___ UPDATED ___ REVISED
WORKPAPER REFERENCE NO(S).: W/P-2,3,4,5 & 6

SCHEDULE C-2, PAGE 1 OF 1

C. D. Bush/E. J. Grubb/S. J. Hopkins

Line No.	Major Group Classification	Base Year Revenues & Expenses	Adjustments	Schedule Reference	Forecasted Revenues & Expenses
1					
2	**Operating Revenues**				
3	Water Sales	$37,837,739	$957,820	Sch D-1	$ 38,795,559
4	Other Operating Revenues	942,140	349,320	Sch D-1	1,291,460
5		38,779,879	1,307,140		40,087,019
6	**Operating Expenses**				
7	Labor	5,972,546	144,802	Sch D-1	6,117,348
8	Purchased Water	234,116	9,383	Sch D-1	243,499
9	Fuel and Power	1,614,184	332,155	Sch D-1	1,946,339
10	Chemicals	981,102	44,149	Sch D-1	1,025,251
11	Waste Disposal	67,460	61,690	Sch D-1	129,150
12	Management Fees	440,916	492,052	Sch D-1	932,968
13	Group Insurance	1,337,176	55,105	Sch D-1	1,392,281
14	Pensions	180,782	(175,582)	Sch D-1	5,200
15	Regulatory Expense	56,048	124,657	Sch D-1	180,705
16	Insurance Other than Group	292,731	32,089	Sch D-1	324,820
17	Customer Accounting	1,068,427	39,960	Sch D-1	1,108,387
18	Rents	90,800	(1,046)	Sch D-1	89,754
19	General Office Expense	442,455	29,386	Sch D-1	471,841
20	Miscellaneous	2,276,494	488,044	Sch D-1	2,764,538
21	Maintenance - Other	1,316,851	155,829	Sch D-1	1,472,680
22					
23	Total O & M Expenses	16,372,088	1,832,673		18,204,761
24					
25	Depreciation	5,021,465	387,928	Sch D-1	5,409,393
26	Amortization	25,728	636,228	Sch D-1	661,956
27	General Taxes				
28	Property and Capital Stock	1,304,507	20,626	Sch D-1	1,325,133
29	Gross Receipts and Sales	69,029	451	Sch D-1	69,480
30	Payroll	465,497	6,891	Sch D-1	472,388
31	Miscellaneous	0	0	Sch D-1	0
32	State Income Taxes				
33	Current	484,484	134,419	Sch E-1.5	618,903
34	Deferred	407,265	(333,532)	Sch E-1.5	73,733
35					
36					
37	Federal Income Taxes				
38	Current	1,909,421	520,293	Sch E-1.5	2,429,714
39	Deferred	1,585,535	(1,340,321)	Sch E-1.5	245,214
40	Deferred - ITC	(81,831)	(2,966)	Sch E-1.5	(84,797)
41					
42					
43					
44	Total Operating Expenses	27,563,188	1,862,690		29,425,878
45					
46	Utility Operating Income	$11,216,691	($555,550)		$10,661,141
47					
48					
49					
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COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ADJUSTMENT OF THE RATES OF)
KENTUCKY-AMERICAN WATER COMPANY) CASE NO. 2004-00103

O R D E R

Kentucky-American Water Company ("Kentucky-American" or "KAWC") has applied for an adjustment in its base rates for water service to generate additional annual revenues of $6,625,443,[1] an activation charge that would generate annual revenues of $672,000, a discount to certain low-income ratepayers, and an increase in its tap-on fees.[2] By this Order, the Commission establishes rates for water service that will produce an annual increase in revenues from water sales of $3,611,302 and approves the requested increase in tap-on fees and the proposed activation charge.

BACKGROUND

Kentucky-American, a Kentucky corporation, owns and operates facilities that treat and distribute water to the public for compensation in Bourbon, Clark, Fayette, Gallatin, Grant, Harrison, Jessamine, Owen, Scott, and Woodford counties. It provides wholesale water service to the cities of Georgetown, Midway, Versailles, and

[1] KAWC's Application, Exhibit 37, Schedule A at 1. $7,297,443 (Revenue Deficiency) - $672,000 (Activation Charge) = $6,625,443.

[2] In its original application, Kentucky-American requested rates that would generate an additional $6,625,443 from water sales annually. During the course of this proceeding, it amended its initial request to correct errors in its calculations and reduced its request to $6,618,776. *See, e.g.*, KAWC Brief at 5.

TABLE VI[96]

Rate Base Component	Kentucky-American Proposed 13-Month Average	Commission	
		Adjustments	Approved
UPIS	$ 287,861,620	$ (8,165)	$ 287,853,455
Utility Plant Acquisition Adj.	391,650	(314,433)	77,217
Accumulated Depreciation	(68,958,343)	(198,121)	(69,156,464)
Accumulated Amortization	+ (7,674)	+ 0	+ (7,674)
Net Utility Plant In Service	$ 219,287,253	$ (520,719)	$218,766,534
CWIP	6,124,953	(595,297)	5,529,656
Working Capital	2,495,000	(783,541)	1,711,459
Other Working Capital	462,149	0	462,149
CIAC	(34,547,915)	1,483,855	(33,064,060)
Customer Advances	(15,220,324)	(139,049)	(15,359,373)
Deferred Income Taxes	(26,561,822)	1,934,880	(24,626,942)
Deferred Income Tax Credits	(117,518)	0	(117,518)
Deferred Maintenance	2,453,718	0	2,453,718
Deferred Debits	6,737,667	(4,685,839)	2,051,828
Other Rate Base Elements	+ (2,154,343)	+ 609,399	+ (1,544,944)
Net Original Cost Rate Base	$ 158,958,818	$ (2,696,311)	$ 156,262,507

Income Statement

For the base period, Kentucky-American reported operating revenues and expenses of $44,246,522 and $33,460,201, respectively.[97] Kentucky-American proposed several adjustments to revenues and expenses to reflect the anticipated operating conditions during the forecasted period, resulting in forecasted operating revenues and expenses of $43,389,662 and $34,597,380, respectively.[98] The Commission's review of Kentucky-American's forecasted operations is set forth below.

[96] The amount set forth in Table VI for Deferred Income Taxes differs from that in Table II due to rounding differences.

[97] KAWC's Application, Exhibit 37 C, Schedule C-3 at 1.

[98] *Id.*

Kentucky-American Water Company — **Forecasted Test Year Ended 11/2005**

Cost of Service Study Data - O & M Expenses

Line Number	Account Number	Description	Base Period	Present Rates Proforma Adjustments	Proposed Rates Proforma Adjustments	Proforma Total
	8/24	Labor	4,938,893	201,542	0	5,140,435
	9	Purchased Water	61,278	10,722	0	72,000
	10	Fuel and Power	2,039,507	(116,866)	0	1,922,641
	11	Chemicals	1,358,500	(138,204)	0	1,220,296
	12	Waste Disposal	166,669	72,327	0	238,996
	13	Management Fees	3,027,803	748,836	0	3,776,639
	14	Group Insurance	1,562,617	107,130	0	1,669,747
	15	Pension	963,675	(249,202)	0	714,473
	16	Regulatory Expense	19,712	210,404	0	230,116
	17	Insurance Other than Group	488,322	49,612	0	537,934
	18	Customer Accounting	849,113	128,713	35,720	1,013,546
	19	Rents	60,321	32,039	0	92,360
	20	General Office Expense	366,697	(20,742)	0	345,955
	21	Miscellaneous	3,022,892	(114,872)	0	2,908,020
	25	Other Maintenance	1,191,050	161,005	0	1,352,055
		Total O & M Expenses	20,117,049	1,082,444	35,720	21,235,213
	403000	Depreciation	6,045,715	907,986	0	6,953,701

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ADJUSTMENT OF RATES OF KENTUCKY-AMERICAN WATER COMPANY	) CASE NO. 2007-00143)

ORDER

The parties to this proceeding have submitted for Commission review and approval a Settlement Agreement that resolves all outstanding issues in this proceeding. By this Order, the Commission approves the terms of this agreement, including the agreed rates for water service.

On April 30, 2007, Kentucky-American Water Company ("Kentucky-American") applied for an adjustment of its rates for water service and certain non-recurring charges. The proposed rates, which Kentucky-American proposed to become effective on May 30, 2007 and which were based upon a fully forecasted test year ending November 30, 2008, would produce additional revenues of $11,005,465, or 20.8 percent, over forecasted operating revenues from existing rates of $53,003,297.[1]

The Commission established this docket[2] and permitted the following parties to intervene in this matter: the Attorney General of Kentucky ("AG"), Lexington-Fayette

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1 The original financial exhibits in Kentucky-American's application supported an annual revenue increase of $13,188,906, a 25.1 percent increase over forecasted operating revenues from present rates of $52,550,157. On June 25, 2007, Kentucky-American submitted revised financial exhibits that corrected certain errors and resulted in a lower requested revenue increase. The revisions did not affect the proposed rates.

2 On May 2, 2007, the Commission granted Kentucky-American's request for use of electronic filing procedures for this proceeding and directed that all documents and pleadings in this proceeding be filed with Commission and served electronically upon all parties. We continued to require the service of a paper copy upon all parties.

Urban County Government ("LFUCG"), Community Action Council for Lexington-Fayette, Bourbon, Harrison, and Nicholas Counties, Inc. ("CAC"), and Kentucky Industrial Utility Customers, Inc.

On May 12, 2007, the Commission, suspended the operation of the proposed rates for 6 months and established a schedule for their examination. Following extensive discovery and the submission of written testimony,[3] the Commission held a hearing on September 18, 2007. Nick O. Rowe, President of Kentucky-American, and Michael A. Miller, Kentucky-American's Assistant Treasurer, were the only persons to present testimony at this hearing.[4]

On September 14, 2007, Kentucky-American filed with the Commission a "Settlement Agreement, Stipulation, and Recommendation" which all parties had executed and which purported to resolve all outstanding issues in this proceeding. A copy of this Agreement is appended to this Order as Appendix B.

In their agreement, all parties agreed and recommend to the Commission that:

> 1. Kentucky-American should be authorized rates, effective December 1, 2007, that would permit the recovery of $8 million in annual revenues more than present rates permit. The agreed rates are set forth in Exhibit A to the Settlement Agreement.

---

[3] The following persons submitted written testimony on behalf of Kentucky-American: Patrick L. Baryenbruch; Linda C. Bridwell; Michael A. Miller; Nick O. Rowe; Shelia A. Miller; John J. Spandos; Dr. Edward L. Spitnagel, Jr.; and Dr. James H. Vander Weide. Michael J. Majoros, Jr., Scott J. Rubin, and Dr. J. Randall Woolridge submitted written testimony on the AG's behalf regarding the application in its entirety. Chief Robert G. Hendricks of the LFUCG Division of Fire and Emergency Services submitted written testimony on behalf of LFUCG regarding Kentucky-American's operation of fire hydrants in Fayette County, Kentucky. Jack E. Burch submitted written testimony on behalf of CAC regarding the effect of the proposed rates on low-income ratepayers.

[4] This testimony was limited to the merits of the Settlement Agreement.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO: 2007-00143
OVERALL FINANCIAL SUMMARY
FOR THE TWELVE MONTHS ENDED: NOVEBER 30, 2008

DATA: _X_ BASE PERIOD _X_ FORECASTED PERIOD
TYPE OF FILING: _X_ ORIGINAL ___ UPDATED ___ REVISED
WORKPAPER REFERENCE NO(S).: W/P-2,3,4,5 & 6 (TOTAL COMPANY)

SCHEDULE C-2, PAGE 1 OF 5
Witness Responsible: M.A. Miller/. S. A. Miller

Line No.	Major Group Classification	Base Year Revenues & Expenses	Adjustments	Schedule Reference	Forecasted Revenues & Expenses
1					
2	**Operating Revenues**				
3	Water Sales	$47,733,686	$1,056,079	Sch D-1	$ 48,789,765
4	Other Operating Revenues	1,911,202	1,849,190	Sch D-1	3,760,392
5		49,644,888	2,905,269		52,550,157
6	**Operating Expenses**				
7	Labor	5,643,875	674,705	Sch D-1	6,318,580
8	Purchased Water	528,893	(51,430)	Sch D-1	477,463
9	Fuel and Power	2,597,296	388,981	Sch D-1	2,986,277
10	Chemicals	1,628,233	(123,015)	Sch D-1	1,505,218
11	Waste Disposal	353,536	(91,299)	Sch D-1	262,237
12	Management Fees	7,176,100	(929,383)	Sch D-1	6,246,717
13	Group Insurance	1,668,447	219,465	Sch D-1	1,887,912
14	Pensions	581,250	(77,517)	Sch D-1	503,733
15	Regulatory Expense	361,526	(69,331)	Sch D-1	292,195
16	Insurance Other than Group	669,350	1,981	Sch D-1	671,331
17	Customer Accounting	1,433,179	28,355	Sch D-1	1,461,534
18	Rents	53,990	(1,825)	Sch D-1	52,165
19	General Office Expense	499,308	(24,112)	Sch D-1	475,196
20	Miscellaneous	3,045,194	(10,401)	Sch D-1	3,034,793
21	Maintenance - Other	1,311,815	195,395	Sch D-1	1,507,210
22					
23	Total O & M Expenses	27,551,992	130,570		27,682,562
24					
25	Depreciation	7,930,331	108,322	Sch D-1	8,038,653
26	Amortization	498,920	(47,949)	Sch D-1	450,971
27	General Taxes				
28	Property and Capital Stock	2,338,982	715,097	Sch D-1	3,054,079
29	Gross Receipts and Sales	47,418	37,746	Sch D-1	85,164
30	Payroll	473,579	14,339	Sch D-1	487,918
31	Miscellaneous	112,230	(112,230)	Sch D-1	0
32	State Income Taxes				
33	Current	(207,809)	431,018	Sch E-1.5	223,209
34	Deferred	734,069	(559,015)	Sch E-1.5	175,054
35					
36					
37	Federal Income Taxes				
38	Current	(963,252)	2,187,183	Sch E-1.5	1,223,931
39	Deferred	2,565,286	(1,657,803)	Sch E-1.5	907,483
40	Deferred - ITC	(84,792)	(5)	Sch E-1.5	(84,797)
41					
42					
43					
44	Total Operating Expenses	40,996,954	1,247,273		42,244,227
45					
46	Utility Operating Income	$8,647,934	$1,657,996		$10,305,930
47					
48					
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COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ADJUSTMENT OF RATES OF KENTUCKY-AMERICAN WATER COMPANY	))	CASE NO. 2008-00427

ORDER

The parties to this proceeding have submitted for Commission review and approval a Settlement Agreement that resolves all outstanding issues in this proceeding. By this Order, the Commission approves the terms of this agreement, including the agreed rates for water service.

On October 31, 2008, Kentucky-American Water Company ("Kentucky-American") applied for an adjustment of its rates for water service and certain non-recurring charges. The proposed rates, which Kentucky-American proposed to become effective on June 1, 2009 and which were based upon a fully forecasted test period ending May, 31, 2010, would produce additional revenues of $18,494,634, or 32.5 percent, over forecasted operating revenues from existing rates of $56,860,712.[1]

The Commission established this docket[2] and permitted the following parties to intervene in this matter: the Attorney General of Kentucky ("AG"), Lexington Fayette

[1] On March 10, 2009, Kentucky-American submitted revised financial exhibits that correct certain errors resulting in a revised revenue increase of $18,871,578, $376,944 above the increase originally requested. Kentucky-American, however, did not amend its Application to request rates that would produce additional revenues.

[2] On October 30, 2008, the Commission granted Kentucky-American's request for use of electronic filing procedures for this proceeding. All parties, moreover, have waived their right to service by paper medium of all documents, including Commission Orders, and have received service through electronic means.

Urban County Government ("LFUCG"), and Community Action Council for Lexington-Fayette, Bourbon, Harrison, and Nicholas Counties, Inc. ("CAC").

On November 26, 2008, the Commission suspended the operation of the proposed rates for six months and established a schedule for their examination. Following extensive discovery, the submission of written testimony[3] and a public comment hearing, the Commission held an evidentiary hearing on April 14, 2009. Nick O. Rowe, President of Kentucky-American, Michael A. Miller, Kentucky-American's Assistant Treasurer, and Jack E. Burch, CAC's Executive Director were the only persons to testify at this hearing.[4]

Prior to this hearing, Kentucky-American, on April 1, 2009, filed with the Commission a "Settlement Agreement, Stipulation, and Recommendation" that all parties had executed and that purported to resolve all outstanding issues in this proceeding. A copy of this Agreement is found at Appendix A of this Order. Kentucky-American subsequently moved for Commission approval of this Settlement Agreement.

In the Agreement, the signatories agreed that:

> 1. Kentucky-American should be authorized rates effective June 1, 2009 that permit Kentucky-American the opportunity to earn an additional $10,300,000 in annual revenues, an increase of approximately 18.1 percent over forecasted revenues of $56,860,712.

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[3] The following persons submitted written testimony on behalf of Kentucky-American: Patrick L. Brayenbruch; Linda C. Bridwell; Keith Carter; Paul R. Herbert; Michael A. Miller; Shelia A. Miller; Nick O. Rowe; Dr. Edward L. Spitznagel, Jr.; and Dr. James H. Vander Weide. Robert J. Henkes and Stephen G. Hill submitted written testimony on the AG's behalf regarding the application in its entirety. Jack E. Burch submitted written testimony on behalf of CAC regarding the effect of the proposed rates on low-income ratepayers.

[4] This testimony was limited to the merits of the Settlement Agreement.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO: 2008-00427
OVERALL FINANCIAL SUMMARY
FOR THE TWELVE MONTHS ENDED: MAY 31, 2010

DATA: _X_ BASE PERIOD _X_ FORECASTED PERIOD
TYPE OF FILING: _X_ ORIGINAL ___ UPDATED ___ REVISED
WORKPAPER REFERENCE NO(S).: W/P-2,3,4,5 & 6 (TOTAL COMPANY)

SCHEDULE C-2, PAGE 1 OF 1
Witness Responsible: M.A. Miller/S. A. Miller

Line No.	Major Group Classification	Base Year Revenues & Expenses	Adjustments	Schedule Reference	Forecasted Revenues & Expenses
1					
2	**Operating Revenues**				
3	Water Sales	$57,201,459	($340,745)	Sch D-1	$ 56,860,714
4	Other Operating Revenues	2,269,162	3,115,398	Sch D-1	5,384,560
5		59,470,621	2,774,653		62,245,274
6	**Operating Expenses**				
7	Labor	6,630,142	432,406	Sch D-1	7,062,548
8	Purchased Water	326,689	(212,103)	Sch D-1	114,586
9	Fuel and Power	2,958,624	639,995	Sch D-1	3,598,619
10	Chemicals	1,654,395	1,090,666	Sch D-1	2,745,061
11	Waste Disposal	254,519	42,712	Sch D-1	297,231
12	Management Fees	7,670,470	(57,878)	Sch D-1	7,612,592
13	Group Insurance	1,818,349	(8,079)	Sch D-1	1,810,270
14	Pensions	600,317	(18,616)	Sch D-1	581,701
15	Regulatory Expense	353,239	2,343	Sch D-1	355,582
16	Insurance Other than Group	565,537	129,061	Sch D-1	694,598
17	Customer Accounting	1,554,943	43,842	Sch D-1	1,598,785
18	Rents	34,970	(3,002)	Sch D-1	31,968
19	General Office Expense	507,707	68,549	Sch D-1	576,256
20	Miscellaneous	2,813,226	475,628	Sch D-1	3,288,854
21	Maintenance - Other	1,163,615	228,503	Sch D-1	1,392,118
22					
23	Total O & M Expenses	28,906,742	2,854,026		31,760,768
24					
25	Depreciation	7,851,307	#REF!	Sch D-1	#REF!
26	Amortization	471,177	25,412	Sch D-1	496,589
27	General Taxes				
28	Property and Capital Stock	2,637,334	476,268	Sch D-1	3,113,602
29	Gross Receipts and Sales	0	97,656	Sch D-1	97,656
30	Payroll	532,391	8,894	Sch D-1	541,285
31	Miscellaneous	95,356	(95,356)	Sch D-1	0
32	State Income Taxes				
33	Current	517,861	#REF!	Sch E-1.5	#REF!
34	Deferred	353,738	#REF!	Sch E-1.5	#REF!
35					
36					
37	Federal Income Taxes				
38	Current	2,939,576	#REF!	Sch E-1.5	#REF!
39	Deferred	1,910,207	#REF!	Sch E-1.5	#REF!
40	Deferred - ITC	(84,795)	(2)	Sch E-1.5	(84,797)
41					
42					
43					
44	Total Operating Expenses	46,130,894	#REF!		#REF!
45					
46	Utility Operating Income	$13,339,727	#REF!		#REF!
47					
48					
49					

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

APPLICATION OF KENTUCKY-AMERICAN WATER COMPANY FOR AN ADJUSTMENT OF RATES SUPPORTED BY A FULLY FORECASTED TEST YEAR	)	CASE NO. 2010-00036

ORDER

Kentucky-American Water Company ("Kentucky-American") proposes to adjust its base rates for water service and increase its tap-on fees. The proposed rates, which were based upon a fully forecasted test period ending September 30, 2011, would produce additional revenues of $25,848,286, or 39.9 percent, over forecasted operating revenues from existing water rates of $64,753,488.[1] By this Order, the Commission establishes rates for water service that will produce an annual increase in revenues from water sales of $18,825,137 and approves the requested increase in tap-on fees.

BACKGROUND

Kentucky-American, a Kentucky corporation, owns and operates facilities that treat and distribute water, for compensation, to approximately 118,759 customers in the counties of Bourbon, Clark, Fayette, Gallatin, Grant, Harrison, Jessamine, Owen, Scott,

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[1] As required by KRS 278.192(2)(b), Kentucky-American submitted its base period update on July 15, 2010 to report the actual results for the base period months that were originally forecasted. This update contains corrections of certain errors that result in a revised revenue increase of $25,302,362, or $545,924 below the originally proposed increase.

The Commission finds that, based upon the stated purpose of the program, the program primarily benefits shareholders. In the absence of clear and definitive quantitative evidence demonstrating a benefit to the utility's ratepayers, the ratepayers should not be required to bear the program's costs. Accordingly, we find that forecasted labor expense should be decreased by $27,288 to eliminate the stock-based compensation plan.

Fuel and Power. In its forecasted operations, Kentucky-American includes fuel and power expense of $4,375,584. It used an unaccounted-for water loss percentage of 14 percent to forecast pumpage.[100] Kentucky-American's present unaccounted-for water loss is 11.8 percent.[101] Using this percentage, Kentucky-American calculated a revised fuel and power expense of $4,297,587, which is $77,997 below its original forecast.[102] Accordingly, the Commission finds that Kentucky-American's forecasted fuel and power expense should be decreased by $77,997.

Chemicals. In its forecasted operations, Kentucky-American included chemical expense of $1,772,730. As with its forecasted fuel and power expense, Kentucky-American used an unaccounted-for water loss of 14 percent to forecast chemical

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[100] Kentucky-American's Response to Commission Staff's First Request for Information, Item 1(a), WP 3-2, at 18.

[101] VR: 8/10/10; 15:45:45 -15:46:05. The present level represents a significant achievement for Kentucky-American. For the three-year period from January 1, 2006 through December 31, 2008, Kentucky-American's average line loss was 13.51 percent. For the year ending December 31, 2006, Kentucky-American experienced a line loss of approximately 14.94 percent. The Commission applauds Kentucky-American's efforts in this area.

[102] Kentucky-American's Response to Hearing Data Requests, Item 7, at 1.

expense.[103] Using the current water-loss percentage of 11.8 percent, Kentucky-American calculated a revised chemical expense of $1,729,077, which is $43,653 below its original estimate.[104] Accordingly, the Commission finds that Kentucky-American's forecasted chemical expense should be decreased by $43,653.

Waste Disposal. In its forecasted operations, Kentucky-American includes waste disposal expense of $340,226. This expense includes the amortization of the forecasted cost of $245,000 over a 24-month period, or $122,500, for the cleaning of Kentucky River Station I's lagoon in June 2011.[105] Kentucky-American developed its forecasted cost by averaging the three lowest bids received for lagoon cleaning in 2009.[106]

The AG offers two alternative methods to the forecasted expense. AG witness Smith argues that the most appropriate means to forecast the expense is to average the actual costs of the four lagoon cleanings that have occurred since 2001. He proposes an annual cost of $90,000, which is the average cost of the last four lagoon cleanings, amortized over 24 months.[107] The AG also suggests that this expense be based upon the lowest bid that Kentucky-American received for lagoon cleaning conducted in

[103] Kentucky-American's Response to Commission Staff's First Request for Information, Item 1(a), WP 3-3.

[104] Kentucky-American's Response to Hearing Data Requests, Item 7, at 1.

[105] Kentucky-American's Response to Commission Staff's First Request for Information, Item 1(a), WP 3-4.

[106] Rebuttal Testimony of Keith Cartier at 2.

[107] Public Direct Testimony of Ralph C. Smith at 76-77.

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COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Gary M. VerDouw

22. State whether Kentucky-American's proposed Power and Chemical Rider eliminates or reduces Kentucky-American's incentive to reduce its power and chemical costs through more efficient operations. Explain.

Response:

Please refer to the pre-filed direct testimony of Gary M. VerDouw at pages 30 and 31 which describes the procedures utilized by the Company to ensure it is procuring these commodities at the best possible pricing and is operating as efficiently as possible. The Company will continue to follow these procedures with or without the proposed PPACC Rider.

In addition, under the Company's proposal for a PPACC Tariff Rider, the burden remains on the Company to demonstrate that its expenditures were reasonable and prudent. The Commission will continue to have oversight into the prudency of the Company's expenditures on its chemical purchases. The Company purchases only those chemicals necessary to adhere to all water quality standards and is always incentivized to purchase at the least cost possible in an effort to control and wherever possible to lower overall operating and maintenance costs. Likewise, the Company is always incentivized to keep it customer rates as low as possible and given the pressure on rates from needed capital expenditures, controlling operating and maintenance costs is extremely important.

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Witness: Gary M. VerDouw

23. Refer to Kentucky-American's Response to the Commission Staff's Second Information Request, Item 65. State whether the harm to customers or shareholders resulting from over-recovery or under-recovery of a cost may be minimized if a utility files frequent rate cases. Explain.

Response:

Generally, in order to provide the best opportunity to minimize the potential over-recovery or under-recovery of a cost, a company would need to file base rate cases annually that establish new rates on an annual prospective basis. Annual base rate cases would be predicated upon the latest and best information then available with an annual opportunity to update such information. However, annual base rate case filings would be extremely costly and burdensome to all parties. Absent annual base rate case filings, the PPACC provides an opportunity to minimize such over/under recovery for the costs associated with purchased power and chemicals, and, therefore, minimize the effects on customers and shareholders.

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Witness: **Gary M. VerDouw**

24. Refer to Kentucky-American's Response to the Commission Staff's Second Information Request, Item 67.

a. In its response to Item 67c, Kentucky-American identifies six members of the Advisory Council. In "American Water Business Transformation May 2010,[8] which Kentucky-American submitted in response to Item 67a, 78 persons are identified as Advisory Council members. Explain the difference in the two responses.

b. The members of the BT Program Team identified in Kentucky-American's Response are not the same as those listed on page 14 of "American Water Business Transformation May 2010." Explain the differences in the two listings.

c. Only four of the 78 members of the Advisory Council listed in American Water Business Transformation May 2010" are identified as Kentucky-American employees. The other teams do not list any Kentucky-American employees members. Explain why, given the lack of Kentucky-American employee involvement in the process:

(1) Kentucky-American should be considered as an active participant in the Business Transformation program.

(2) Kentucky-American's interests and concerns should be considered as being adequately represented in the Business Transformation process.

d. List each employee who served on the Business Transformation Steering Committee, identify his or her position, title, and the American Water subsidiary which employed him or her.

e. Provide the minutes of each meeting of the Business Transformation Steering Committee.

Response:

a. The individuals identified in response to Item 67(c) of the Commission Staff's Second Information Request as the Advisory Council were the American Water employees who reviewed and approved the BT software and solution implementer recommendations. The 78 persons identified as Advisory Council members in the American Water Business Transformation May 2010,[8] PowerPoint identified in response to Item 67(b) of the Commission Staff's Second Information Request were the Business Transformation Process Area Advisory Council members (e.g., Hire to Retire, Procure to Pay, Record to Report, Order to Cash, Request to Close, Plan to Build).

b. From the early stages of the Business Transformation program through the present, the BT program team has grown in numbers, the structure of the BT program team has changed, and the roles and responsibilities of BT program team members have changed to meet the business and project needs at each stage of the program.

c. Kentucky American Water has been and continues to be an active participant in the Business Transformation program. Kentucky-American's interests and concerns have been adequately represented throughout the Business Transformation process. In addition to the Kentucky-American employees who served on the initial advisory councils in 2010, the following is a list of current and former Kentucky-American employees, or AW employees who are responsible for support to KAW as a large part of their responsibilities, and their roles throughout the Business transformation program:

- Nick Rowe – Senior VP, AW Central Division – BT Record to Report Process Council; BT Release 2 Business Lead (EAM)
- Cheryl Norton – President KAW – BT Request to Close Process Council (CIS/EAM)
- Keith Cartier - VP Operations KAW - BT Release 2 (CIS/EAM) Deployment Lead
- Deb Degillio - VP Finance, former AW Eastern Division VP Finance – BT Record to Report Process Council (ERP)
- Kurtis Strauel – HR Director Mid-Atlantic Division, former HR Director, AW Eastern Division - BT Hire to Retire Process Council (ERP)
- Lance Williams – former Director, Engineering KAW – BT Procure to Pay Process Council (ERP/EAM)
- Takisha Walker - Lead Technical Trainer, Customer Service KAW – BT Lead Technical Trainer
- Gary VerDouw – AW Central Division, Rates Director, BT Rates and Regulatory Council
- Linda Bridwell – Manager Rates and Regulation, KY & TN, BT Rates and Regulatory Council

- KAW Release 1 (ERP) Super Users
    - Desirae Hagan – Hire to Retire Time Entry
    - Debbie Fraley - Procure to Pay Inventory and Purchasing
    - Linda Whitt - Procure to Pay Purchasing
    - Mary Ellen Pugh - Procure to Pay Purchasing
    - Peter Yuan (Central Division based in KY)- Record to Report Reporting

  - Gina Money (Central Division based in KY) - Record to Report Reporting
  - Karin Ramey - Record to Report Capital Investment Management
  - Melissa Schwarzell (Central Division based in KY) - Record to Report Reporting and Rates Regulatory

- KAW Release 2 (CIS/EAM) Super Users
  - Bryan Siler – BT EAM Maintenance Planning & Master Data; Notifications, Dependencies, and Orders; CIS Device (Meter) Management
  - Doug Brooks– BT EAM Maintenance Planning & Master Data; Notifications, Dependencies, and Orders
  - Jarold Jackson– BT EAM Maintenance Planning & Master Data; Notifications, Dependencies, and Orders; Work with Mobile Device
  - Justin Sensabaugh – BT EAM Maintenance Planning & Master Data; Notifications, Dependencies, and Orders
  - Nathan Clark – BT EAM Maintenance Planning & Master Data; Work with Mobile Device; Dependencies, and Orders
  - Ken Roney – BT EAM Notifications, Dependencies, and Orders; CIS Cross Connection & Backflow
  - Richard Bliss – BT EAM Notifications, Dependencies, and Orders; Work with Mobile Device
  - Kelly Townsend - CIS Service Orders & Notifications; Process Meter Reading & Exception Handling; Customer Service
  - Angie True - CIS Service Orders & Notifications; Customer Service
  - Rachel Cole - CIS Service Orders & Notifications; Process Meter Reading & Exception Handling; Customer Service
  - Stacy Owens - CIS Service Orders & Notifications; New Construction Inquiries & Premise Creation; Process Meter Reading & Exception Handling; Customer Service
  - Melissa Schwarzell (Central Division based in KY) - CIS Rates; Billing Master Data

In addition to the roles and responsibilities identified above, numerous Kentucky-American employees participated in various BT workshops, testing, and training sessions throughout various stages of the BT program.

d. Throughout the course of the BT program, the Business Transformation Steering Committee has included:

- Walter Lynch - President and Chief Operating Officer of Regulated Operations, American Water Works Service Company
- Ellen Wolf - Senior Vice President and Chief Financial Officer, American Water Works Company

- Kellye Walker - Chief Administrative Officer and General Counsel, American Water Works Service Company
- John Bigelow - Senior Vice President Business Services, American Water Works Service Company
- John Young – (former Chief Operating Officer, American Water Works Service Company)
- Laura Monica – (former SVP Corporate Communications, American Water Works Service Company)
- Sean Burke – (former Vice President Human Resources, American Water Works Service Company)

e. The meeting minutes of the Business Transformation Steering Committee contain confidential information. Therefore, the Company has filed a Petition for Confidential Treatment contemporaneously with these responses. The Company will provide copies of the requested documents to all parties in this case upon execution of an appropriate confidentiality agreement.

This entire attachment is confidential and has been provided under seal pursuant to a Petition for Confidential Treatment.

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COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Gary M. VerDouw

25. In its Response to Item 69(a) of the Commission Staff's Second Information Request, Kentucky-American states: "Neither American Water nor Kentucky-American has performed any studies or analysis of the financial effects of the BT program on Kentucky-American." In Case No. 2008-00563,[1] the Commission disallowed the recovery of the allocation of the financial and billing software costs to the applicant because of the absence of any benefit analysis. Explain why the Commission should not make a similar finding in this proceeding.

Response:

The BT program supports and impacts myriad facets of the Company's operations, including human resources, finance and accounting, supply chain and procurement management, management of asset lifestyles (including the design, construction, commissioning, operations, maintenance and decommissioning or replacement of plant, equipment and facilities), work management for both customer service field work and transmission and distribution system work, billing and personal data about customers (including billing rates, water consumption, associated charges and meter information) and strategy for managing and nurturing interactions with customers. Given its breadth, the BT program can be fairly characterized as "a unique capital project in both scope and complexity."

The standards that should guide the Commission when considering whether BT costs should be borne by the customers are whether the Company's decision to incur the costs is reasonable and prudent, and whether the assets will be used and useful during the applicable rate case periods. As discussed further below, Kentucky-American's investment in Business Transformation is prudent, the level of costs are reasonable, and the Business Transformation assets used and useful in the test year.

The need for undertaking the BT program was well documented. The American Water ITS Comprehensive Planning Study clearly identified the aging status of Kentucky-American Water's information technology infrastructure and the need for the systems replacement. Kentucky-American's customers today expect more functionality than they once did, and more functionality than Kentucky-American's existing IT systems can readily support. Business Transformation will enable Kentucky-American to meet those expectations now, and evolve as technology evolves. The BT systems are anticipated to

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[1] Case No. 2008-00583, *Application of Water Service Corporation for an Adjustment of Rates* (Ky. PSC Nov. 9, 2009) at 3-6.

provide a host of benefits to Kentucky-American and its customers. In sum, the Business Transformation program is both necessary and beneficial.

American Water undertook the Business Transformation program in a reasonable manner, and the level of Business Transformation costs is reasonable. The selection of the ITS platform for the program was performed in an appropriate fashion using a competitive bidding and evaluation process. Likewise, the system integrator was selected with a similar bidding and evaluation process. American Water conducted extensive analyses of potential service providers, used competitive bidding processes to select key service providers and negotiated “not to exceed” fixed fee arrangements to ensure effective cost control. The project is on schedule, and projected costs are still within the budgeted amount and very reasonable given industry norms. American Water has carefully managed the BT costs at every stage to provide customers and other stakeholders with the greatest value at a reasonable cost.

The Business Transformation systems are used and useful in Kentucky-American’s test year. The Enterprise Resource Planning system was deployed enterprise-wide in August 2012; the Enterprise Asset Management system and Customer Information Systems will be deployed in May 2013.

Finally, the Company’s test year in this case reflects full retirement of the old computer systems that the BT program will replace. Disallowing the Kentucky-American’s BT program costs would result in the unreasonable position that the Company should receive no cost recovery for computer systems necessary in providing utility service.

Kentucky-American should not be reasonably expected to fully quantify potential benefits of BT before it has even fully implemented the new systems, which are designed to replace outdated, unsupported systems. To the extent that BT produces financial benefits, they will manifest themselves as the new solutions are fully implemented and employees have become acclimated to them. Notwithstanding the above, the Company has begun to realize some financial benefits from its Business Transformation program. For example, Kentucky-American has already incorporated into its filing in this case over $500,000 of financial benefits resulting from its organizational realignment undertaken in anticipation of the implementation of Business Transformation. These savings have already been included in the case filing. Please refer to the attachment to this response.

Kentucky-American’s historical (legacy) data was found in multiple systems and formats. The Business Transformation program is providing Kentucky-American with improved operational and financial information to guide its decisions. An underlying enabler that will provide Kentucky-American with improved information to guide its decisions is the data that will be in our new enterprise software systems – inventory, services, suppliers, assets, employee, and customer information. As part of the BT program, our legacy data has been and continues to be “rationalized” (i.e., collected & analyzed, defined, mapped, cleaned & converted) before loading into our new systems. As part of the Business Transformation data rationalization efforts, we have collected, standardized and consolidated our inventory, services, supplier, employee, customer, and asset information to create consistent and integrated information in the new SAP information system. For example, in the asset-intensive water utility industry, replacement parts can represent a significant portion of operating costs. Part number rationalization provides a standardized description format that crews, technicians, dispatchers, planners, and engineers can interpret to identify the needed parts. The BT program data rationalization efforts have reduced redundancy of parts in the current system, standardized part descriptions and applied a standardized part number assignment scheme. A financial benefit of the BT data rationalization efforts has been improved visibility into inventory and supplier information that has enabled Kentucky-American to more effectively leverage American Water's buying power to negotiate contracts for goods and services across the enterprise. For example, in 2013, it is anticipated that Kentucky-American will realize approximately $1,600,000 of financial benefits as a result of the improved visibility of inventory and supplier information across American Water that has enabled Kentucky-American to more effectively source materials and improve the efficiency of the Company's capital expenditures. These savings have been already included in the filing through reduced chemical costs, vehicle costs, and inventory costs. Please refer to the attachment for the estimated financial benefits through 2014.

Case No. 2012-00520
Response to Commission Staff's Third Request for Information, Item 25
BT Benefits

	Annualized 2012 Benefits	Annualized 2013 Benefits	Annualized 2014 Benefits
American Water Works Company			
FRCC	$1,010,909	$1,041,236	$1,072,472
Realignment	15,088,659	15,541,319	16,007,558
Supply Chain	18,032,152	18,030,000	18,030,000
Total Benefits	$34,131,720	$34,612,555	$35,110,030
Kentucky American Water Company			
FRCC	$39,628	$40,816	$42,041
Realignment	530,889	546,815	563,219
Supply Chain	1,858,582	1,600,000	1,590,000
Total Benefits	$2,429,099	$2,187,631	$2,195,260

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COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Gary M. VerDouw

26. Refer to Kentucky-American's Response to Commission Staff's Second Request for Information, Item 69(c). Explain why the expenditure of $12 million on the BT program would be reasonable for a company of Kentucky-American's size.

Response:

The expenditure of $12 million on the BT program is reasonable for a company of Kentucky-American's size. The BT program is much more than just the replacement of billing, collecting and financial software. It is a replacement of most of KAW's software with the exception of PowerPlant, which will also be enhanced because of the improvements the BT program will offer. The BT program includes an entirely new human resources/timekeeping module that KAW did not have in the past; it includes an asset management module that will allow KAW to track and maintain assets online and on a proactive basis rather than through a manual, paper system; and it includes a system that schedules and dispatches KAW crews to make their time more efficient. In addition to those examples, it provides a number of enhancements that the former financial and billing software did not have. In other words, it is much more than just a replacement of aging financial and billing software.

Please see Kentucky-American's response to Item 25 of Commission Staff's Third Request for Information for a full explanation of the process, benefits and reasonableness of the BT program and its cost. The $12 million equates to a cost of just over $100 per Kentucky-American customer, or approximately $10 per year per customer based on the anticipated ten year life of the BT assets. Please also see page 37, lines 11 through 19 of Gary VerDouw's direct testimony.

**KENTUCKY-AMERICAN WATER COMPANY
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COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION**

Witness: Linda C. Bridwell

27. Refer to Kentucky-American's Responses to Commission Staff's Second Request for Information, Items 73(b) and 73(c). Confirm that American Water Service Company ("Service Company") does not bill Kentucky-American directly for each call received at the Call Center, but allocates Call Center costs to each operating subsidiary based on the Call Center allocation formula, call frequency and call duration.

Response:

Kentucky American is being direct charged for the call handling costs it incurs at the Customer Call Center. Beginning in January of 2012, Kentucky-American (and its regulated utility affiliates) have been directly charged for their monthly call handling costs based on the number of calls and average call handle time. This amount is adjusted each month based on the previous month's call handling data.

The overhead component of Customer Service Center functions are charged to Kentucky-American and its regulated utility affiliates based on the percentage of each utility's customer count to the overall regulated utility customer count of American Water, as provided for in the Service Company Agreement.

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COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Linda Bridwell

28. In its response to Item 73(e) of the Commission Staff's Second Request for Information, Kentucky-American states that due to the implementation of the Business Transformation initiative in late 2012, the Service Company does not have a board-approved budget for 2014, and for this reason Kentucky-American was unable to respond to Commission Staff's inquiry.

    a. Confirm that Kentucky-American has a board-approved budget for 2014.

    b. Explain why, in light of the absence of a Service Company budget for 2014, Kentucky-American's proposed rate adjustment should not be based upon a historical test-period.

    c. Explain how the reasonableness of the forecasted Service Company charges can be reviewed without historical comparisons.

Response:

a. KAW does not have a "Board approved" budget for 2014 yet. The process for Board approval of the budget has always been and continues to be that the Board of Directors approves the budget in the 4th quarter of the current year for the following year. Multi-year strategic plans are developed and presented to the Board, however, no action is taken on the outlying years of business planning. In 2012, KAW prepared a 2013 and 2014 budget. This budget was the basis for the rate case development, with pro forma adjustments for known changes between the time of the budget development and the filing of the rate case. In accordance with the normal budget approval process, the 2013 budget was approved by the Board. The Board will approve a 2014 budget in the 4th quarter of 2013.

b. The fact that the Service Company does not have a budget for 2014 has no effect on what type of test period (historical vs. forecasted) KAW is permitted to use in this case, according to Kentucky regulations. When KAW filed its December 28, 2012 Application in this case, it included the required base period information. That base period information included six months of actual historical data (April 2012 – September 2012) and six months of estimated data (October 2012 – March 2013). KAW will file the actual results for the estimated months no later than 45 days after the base period ends in March 2013. Finally, the forecasted test period in this case is August 3012 – July 2014, all in accordance with the state regulations.

   KAW has also complied with Commission regulations governing the data KAW must submit in support of a forecasted test year rate case. These included the numerous informational requirements: a statement explaining why the rate increase is required; KAW's three-year forecast of capital construction expenditures; KAW's three-year financial forecast, a complete description of all factors used in preparing KAW's forecasted test period; KAW's annual and monthly budgets for the twelve months preceding the Application filing date, the base period and the forecasted period; a statement from KAW President Cheryl Norton that the forecast is reasonable, reliable and made in good faith; and numerous schedules and reports detailing the financial information for the base period and the forecasted period. KAW has chosen to utilize the forecasted test year option and has met all requirements for that option. KAW has been utilizing a forecasted test year in this manner for approximately 20 years.

The Service Company provides certain services to KAW and its affiliates. The lack of a 2014 budget for the Service Company should not somehow convert this case to a historical test year case. KAW's base period included expenses for all of its operating costs – everything from Service Company costs, to chemical costs, to electricity costs to office supplies costs. Based on that base period, KAW has projected its expenses for the forecasted test year. The lack of a 2014 budget for the Service Company does not affect KAW's ability to project forecasted test period for its Service Company expenses. Indeed, as explained in response to Item 93 of the Attorney General's First Information Request, KAW has been able to adjust its base period Service Company expenses to reflect its forecasted period Service Company expenses for known and measurable changes that will occur for: labor merit pay increases; inflation; information technology services expenses; Business Transformation cost projections; and forecasted changes in depreciation and capital lease interest expense. The lack of a 2014 budget from the Service Company poses no problem whatsoever in making those projections in the same way the lack of a budget from KAW's chemical supplier does not prohibit KAW from projecting its chemical expense.

c. KAW believes that historical Service Company expense should be reviewed in determining whether KAW's projected Service Company expense is reasonable and KAW's response to Item 73(e) was not intended to suggest otherwise. KAW will have in fact submitted twelve months of historical actual expense results for all expenses, including Service Company expense, for the base period when the Commission decides this case. At the time of filing its Application, KAW provided six months of actual expense data and six months of estimated expense data. In May 2013, before the hearing in this case, KAW will have filed the actual results for the estimated months. Therefore, before hearing and before the Commission decides this case, the record will contain sufficient historical Service Company expense data which may be used in determining the reasonableness of KAW's forecasted test period projections.

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COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Cheryl D. Norton

29. Provide all Steering Committee meeting minutes, electronic mail communications, written correspondence, memorandums, analyses, and studies that discuss the Steering Committee's decision to terminate all billing services provided to non-American Water Affiliates.

Response:

Attached are the BT Steering Committee meeting minutes and correspondence that discuss the Steering Committee's decision to terminate all billing services provided to non-American Water Affiliates. In addition, attached is a summary analysis of the municipal billing contracts. The BT Steering Committee meeting minutes contain confidential information. Therefore, the Company has filed a Petition for Confidential Treatment contemporaneously with these responses. The Company will provide copies of the requested minutes to all parties in this case upon execution of an appropriate confidentiality agreement.

From:	David K Baker/SERVCO/AWWSC
To:	Frank Kartmann/MOAWC/AWWSC@AWW, Karla A Teasley/ILAWC/AWWSC@AWW, Randy A Moore/IAWC/AWWSC@AWW, Paul G Townsley/CAWC/AWWSC@AWW, Robert G MacLean/ADMIN/CORP/AWWSC@AWW, Alan J DeBoy/INAWC/AWWSC@AWW, David K Little/OAWC/AWWSC@AWW, William Varley/LIWC/AWWSC@AWW, Deron E Allen/TAWC/AWWSC@AWW, William Walsh/VAWC/AWWSC@AWW, Wayne Morgan/ADMIN/CORP/AWWSC@AWW, Kathy L Pape/PAWC/AWWSC@AWW, John Bigelow/ADMIN/CORP/AWWSC@AWW, Nick Rowe/KAWC/AWWSC@AWW, Cheryl D Norton/ILAWC/AWWSC@AWW, Meg Neafsey/ADMIN/CORP/AWWSC@AWW,
Cc:	Walter Lynch/SERVCO/AWWSC@AWW, Ellen C Wolf/ADMIN/CORP/AWWSC@AWW, Kellye L Walker/LEGAL/SERVCO/AWWSC@AWW, Mark Strauss/AAET/AWWSC@AWW, Martin D Kerckhoff/MOAWC/AWWSC@AWW, Andrew S Twadelle/ADMIN/CORP/AWWSC@AWW, Tammy T MacLaughlin/CALLCTR/CORP/AWWSC@AWW, Jody E McCracken/SERVCO/AWWSC@AWW, John C Clarkson/SHARSVCS/AWWSC@AWW, Traci A Cross/PAWC/AWWSC@AWW, Trisha Etedali/SHARSVCS/AWWSC@AWW, Stacy Owens/KAWC/AWWSC@AWW, Doneen S Hobbs/ADMIN/CORP/AWWSC@AWW, David S Derr/PAWC/AWWSC@AWW, Emily A Ashworth/SERVCO/AWWSC@AWW, Mark S Smith/SERVCO/AWWSC@AWW
Date:	08/01/2011 04:32 PM
Subject:	Billing Services Plan
Sent by:	Debbie Hendrix

Presidents and other leaders: Per our recent meetings and emails, the decision has been made to exit all billing contracts within the regulated business. Your teams should begin contacting the clients now to prepare for exit. All contracts must be exited as soon as possible, but not later than the term expiration. By December 1, 2011, you must determine and notify Tammy MacLaughlin in Business Transformation of any contracts which cannot be terminated by October 31, 2012.

As promised, attached below is an instructions spreadsheet. Take a look at all the tabs. The tabs provide the expiration dates for your agreements and the time when you need to communicate and then terminate the service (see the billing contract terms calendar) . The IT work required to unwind the agreements is quite time-consuming; it is critical that the contracts are terminated based upon the billing contract terms calendar. Additionally, the multiple tabs provide other pertinent information. A communications plan is provided in the second attachment.

Due to the complexities and regulatory requirements, no standard price was developed system-wide for provision of shut-off services and data usage (meter reads). Each state should reconfirm or establish its standard pricing.

The ELT has decided that the total costs of retention of any of these contracts will be born by the states which retain them. This includes a pro-rata share of the SAP enabling (fixed = $500K) costs and the $40K variable set up costs per contract.

It is up to each state to execute this plan. Each Division's Customer Service Director worked on the team to develop this exit plan and is your contact person for assistance with the technical/IT aspects, scheduling questions, etc.

Thanks for your cooperation.

Walter Lynch and David Baker

American Water Billing Services Communications Plan

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2. Stakeholder analysis
3. Communications strategies
4. External & internal key messages
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8. Sample bill message
9. Sample internal messages

1. SITUATION ANALYSIS

Current Situation – American Water has decided to exit all billing agreements as soon as possible. Because of the complexity involved in implementing this decision, there is a need for standardized messaging and strategies to ensure a consistent approach to dealing with stakeholders and employees throughout the business.

2. STAKEHOLDER ANALYSIS

Internal stakeholders

- Employees
- Customer Service Center representatives
- Business Development and Management Teams

External stakeholders

- Municipalities /All Billing Clients
  - Government leadership including mayors, council presidents, clerks, etc.
- Public Utility Commissions/Public Service Commissions
  - Commissioners
  - Key staff
- Government
  - Other local government leaders
  - State government leaders
- Impacted Customers

3. COMMUNICATIONS STRATEGIES (CUSTOMIZE TO FIT STATE PLANS)

External Strategy

- Communicate to Clients and Regulatory Commissions that American Water has made a strategic decision to exit the billing services line of business.
- STATE American Water will work with each client to ensure a smooth and timely transaction, provide names of other billing services companies that may be able to assist, and continue offering data usage services and sewer shut-off services where permitted/applicable.
- There will need to be some customization of talking points and information for each affected state subsidiary based on local circumstances and issues surrounding this business process change.

Internal Strategy

- Use SplashPoints and "*News You Need to Know.*"
- Hold a national Communications Partner Network (CPN) call to update employees.
- Develop and distribute talking points for our Customer Service Center team and team leaders in the field for use at tailgate or other in-house meetings.
- Update progress of this initiative using the employee intranet site.
- Use Toughbook as a means to communicate with field employees when official announcement is made to ensure they are aware of the changes.
- Partner with Human Resources and Legal to communicate with employees concerning any staffing level impacts.

4. KEY MESSAGING (CUSTOMIZE TO FIT STATE PLANS)

Exit from Billing Services Agreements

Primary Message - American Water has made a strategic decision to exit the Billing Services line of business and will focus efforts on its core service of providing high-quality water service and reliable wastewater service to communities we serve.

- **Supporting Messages -** American Water's information technology systems are antiquated and need to be replaced. With the needed changes in company technology, the ability to support billing services for outside organizations will be limited.
- STATE American Water will work with each client to ensure a smooth and timely transaction and, if possible, provide names of other billing services companies that may be able to assist.
- We will also offer data usage services and sewer shut-off services, where permitted.

5. TIMELINE (CUSTOMIZE TO FIT STATE PLANS)

August and September 2011

- Create a list identifying the primary contact(s) at each municipality with whom an initial meeting should be held.
- Identify priority contacts that should be addressed first (due to contract terms, size of/relationship with municipality, etc.).
- Identify local operations/GA/BD/legal leads that should be present for each meeting and determine who will set up initial meetings.
- Reach out to local billing vendors to see if they are interested in being listed as for referral purposes.
- Begin holding personal meetings with municipalities explaining that the company will be exiting its billing services line and that we wish to work with them to ensure a smooth and timely transition. Discuss alternate vendors and costs associated with continuing to provide data usage information and shut-off services.
- Begin mailing official contract termination letters as required by contract terms and state needs.
- Where applicable, send letter of notification and/or meet with PSC/PUC staff and/or commissioners to inform them of the company's decision (this may need to occur prior to meeting with municipalities depending on state regulatory requirements and/or relationships).
- Determine the operational impact on local staff and/or CSC special accounts department with regards to sewer notifications, shut-off requests, etc.
- Notify employees of the company's plan to exit billing services contracts over time and send out talking points. Stress the need for confidentiality and the state subsidiary's timeline for communication with external stakeholders.

November and October 2011

- Hold follow-up meetings with municipal leaders to discuss process/timeline.
- Send out follow-up communications to employees regarding the company's exit from billing services agreements.

December 2011

- Submit to BT a final list of contracts that need to be converted to SAP until contract terms or other requirements can be satisfied.

January – October 2012 or as contracts come to a close

- Work with municipalities to notify customers of billing transitions.
- Send out follow-up communications to employees regarding the company's exit from billing services agreements.

6. SAMPLE CONTRACT TERMINATION LETTER (to be customized at the discretion of each state president with legal counsel guidance)

September 1, 2011

Dear Sewer Authority,

Please consider this letter as our official notice to terminate the billing agreement between STATE American Water and Sewer Authority on good terms ending December 31, 2011. This notification abides by Article III of the contract, which requires a 90-day written advance notice for either party to discontinue the automatic annual contract renewal.

As you are aware, American Water has made a strategic decision to exit the Billing Services line of business to better focus our efforts on our core service of providing high-quality water service and reliable wastewater service to communities we serve. American Water's information technology systems are antiquated and are in the process of being replaced. With the needed changes in company technology, our ability to support billing services for outside organizations is limited.

We value your business and will work with you ensure a smooth and timely transition for your billing services. We look forward to maintaining our partnership by continuing to provide usage data and sewer shut-off services.

If you have any questions about this contract termination, please contact __________ at (###) ###-####. Thank you.

Sincerely,

7. SAMPLE REGULATORY NOTIFICATION LETTER (to be customized by each state president with legal consultation to fit his or her state regulatory environment)

September 1, 2011

Dear __________,

This summer, American Water made a strategic decision to exit the Billing Services line of business. We have already held preliminary meetings with our partner sewer authorities throughout <STATE>, and will be working with each of them over the next few months to ensure a smooth and timely transition. We have provided each entity with information on alternative billing services companies, and have committed to continue offering data usage and sewer shut-off services.

The company's decision to exit the billing service business is, first and foremost, the result of American Water's constant reevaluation of its operations. We realized a need to better focus our efforts on our core business of providing high-quality water service and reliable wastewater service to communities we serve, rather than continuing to support outside billing services that are not part of our core business.

Furthermore, American Water's information technology systems are antiquated and are in the process of being replaced. With the needed changes in company technology, our ability to continue supporting billing services for outside entities is limited.

If you have any questions about this process, please contact _________ at (###) ###-####. Thank you.

Sincerely,

8. SAMPLE BILL MESSAGE

**Effective December 31, 2011, your charges from Sewer Authority will no longer appear on your STATE American Water bill. Rather, you will be billed separately for your monthly Sewer Authority charges by Billing Vendor or Sewer Authority Name. If you have any questions about your water bill, please contact STATE American Water's customer service center at 1-800-685-8660. If you have any questions about your sewer/municipal fees bill, please contact Sewer Authority at ~~###-###-####~~.

9. SAMPLE INTERNAL MESSAGES

Internal Draft Template 1

As you may be aware, American Water has made a strategic decision to exit the Billing Services line of business to better focus our efforts on our core service of providing high-quality water service and reliable wastewater service to communities we serve.

American Water's information technology systems are antiquated and are in the process of being replaced. With the needed changes in company technology, the ability to support billing services for outside organizations is limited. The company is working with affected municipalities to ensure a smooth and timely transition of these billing services.

In some communities, the company will maintain its valued partnerships by continuing to provide usage data and sewer shut-off services. As always, our goal at American Water is to maintain strong relationships with the customers and communities we serve across the country.

Internal Draft Template 2

This summer, American Water made a strategic decision to exit the Billing Services line of business. We have already held preliminary meetings with our partner sewer authorities throughout <state>, and will be working with each of them over the next few months to ensure a smooth and timely transition. We have provided each entity with information on alternative billing services companies, and have committed to continue offering data usage and sewer shut-off services.

The company's decision to exit the billing service business is, first and foremost, the result of American Water's constant re-evaluation of its operations. We realized a need to better focus our efforts on our core business of providing high-quality water service and reliable wastewater service to communities we serve, rather than continuing to support outside billing services that are not part of our core business.

Furthermore, American Water's information technology systems are antiquated and are in the process of being replaced. With the needed changes in company technology, our ability to continue supporting billing services for outside entities is limited.

Table of Contents

Goals and Targets
Documents the directive and goals concerning the decision to exit AW billing services agreements.

Contract and Terms
Documents key information concerning the billing agreements in each state including customer count and contract terms.

Planning Calendar
High level overview of billing services exit activities over the next 6 months

Billing Contract Terms Calendar
Documents the planned termination dates of all AW billing contracts. The next available termination date of each contract is populated in the corresponding month and year and highlighted in green. The red cells represent notification requirements of intent to terminate the contract. The calendar will be used to plan exit activities and coordinate with IT who will be responsible for transitioning the billing back to the municipalities or new service providers.

Usage Data and Sewer Shut-off
Recommendations on new usage data and sewer shut-off agreements.

IT Requirements & Constraints
Documents general guidelines, parameters and constraints impacting IT's ability to exit the contracts.

Billing Services Vendors
Documents potential vendors that may be able to offer billings services to the municipalities.

SAP Standard Offering
Describes billing services in current agreements and contrast them to the standard offering that will be available for those contracts that will need to be converted to SAP until they are eventually exited.

Issues Log
Documents questions and issues that arise during the process.

Term Dates Summary
Summarizes the contract exit dates by month and year terminating as well as customer count.

Decision and goals concerning Billing Contracts

1	**We will exit these agreements as soon as possible under the terms of the contracts.**
2	In an ideal world, all agreements would be exited to align with the deployment of the new CIS; this cannot happen, so **BT will have to enable SAP to handle the agreements.**
3	A standard SAP offering will be available - no exceptions. This means that we will perform the billing services exactly that way upon CIS deployment.
4	The SAP Fixed cost $500K will be charged directly to the states on a per contract pro-rata basis (if you set up no contracts in SAP, you pay nothing) and the variable cost of approx. $40K will also be charged to that state.
5	**The list of contracts which will remain after CIS deployment will need to be provided to BT by 12/31/11.**

American Water Billing Contract Agreements
(Collection For Other)

State	Municipality	State/Divisional Contact	# of Contracts	# of Customers	# Mutual Customer	# Non Mutual Customers	Original effective date	Term (length) of the contracts	Contract termination provision	other	Earliest Termination Date (month/day/year)	Regulatory / Statutory Restrictions (Yes / No)
CA	Descanso	Todd Brown / Chris Mattis	1						1 year extension clause		July 15, 2012	
		CA	1									
IA	Riverdale	Sonya Metcalfe	1	160	160	N/A	12/3/2002	1 yr - automatic renewal yr to yr	90 day written notice of intent not to renew. 60 day written notice to terminate for cause.		December 3, 2011	No
		IA	1									
IL	Metro East	Sonya Metcalfe	1	61	61	N/A	8/17/2010		120 day written notice of intent not to renew. 90 day written notice to terminate for cause.		August 17, 2015	NO
IL	Saunemin,	Sonya Metcalfe	1	160	160	N/A	11/10/2004	1 yr - automatic renewal yr to yr	90 day written notice of intent not to renew. 60 day written notice to terminate for cause.		November 10, 2011	NO
IL	Centreville	Sonya Metcalfe	1	220	220	N/A	12/31/2005	1 yr - automatic renewal yr to yr	90 day written notice of intent not to renew. 60 day written notice to terminate for cause.		November 1, 2011	NO
IL	Village of Fairmont	Sonya Metcalfe	1	725	725	N/A	7/15/2007	Contract until 7/1/12 then 1yr - automatic renewal year to year	60 day notice of termination of renewal. Town can terminate upon 60 days written notice. Company can terminate upon 90 days written notice.		July 15, 2012	NO
IL	Reading Twsp	Sonya Metcalfe	1	760	760	N/A	7/31/2009	1yr - automatic renewal yr to yr	60 day notice of termination of renewal. Town can terminate upon 60 days written notice. Company		July 31, 2010	NO
IL	City of Shiloh	Sonya Metcalfe	1	1,100	1,100	N/A	12/31/2005	1 yr - automatic renewal yr to yr	90 day written notice of intent not to renew. 60 day written notice to terminate for cause.		September 2, 2011	NO
IL	Wheaton	Sonya Metcalfe	1	1850	1850	N/A	3/31/2006	Contract until 9/30/11 then 1yr - automatic renewal yr to yr	60 day notice of termination of renewal. District can terminate upon 60 days written notice. Company can terminate upon 90 days written notice.		September 30, 2011	NO
IL	Sterling Sewer and Trash	Sonya Metcalfe	1	6,300	6,300	N/A	11/5/2002	1 yr automatic renewal yr to yr.	90 day written notice of intent not to renew. 60 day written notice to terminate for cause.		December 2, 2011	NO
IL	E. St. Louis	Sonya Metcalfe	1	7,150	7,150	N/A	4/1/1998	1 yr - automatic renewal yr to yr	90 day written notice of intent not to renew. 60 day written notice to terminate for cause.		April 1, 2011	NO

State	Municipality	State/Divisional Contact	# of Contracts	# of Customers	# Mutual Customer	# Non Mutual Customers	Original effective date	Term (length) of the contracts	Contract termination provision	other	Earliest Termination Date (month/day/year)	Regulatory / Statutory Restrictions (Yes / No)
IL	Alton - Sewer	Sonya Metcalfe	1	10,100	10,100	N/A	8/1/2008	Contract until 03/31/2012 then 1 yr automatic renewal yr to yr	60 day written notice prior to termination date		September 30,02011	NO
IL	Alton - Trash	Sonya Metcalfe	1	10,520	10,520	N/A	4/1/2007	Contract until 03/31/2012 then 1 yr automatic renewal yr to yr	60 day written notice prior to termination date		September 30,02011	NO
IL	Pekin	Sonya Metcalfe	1	13,000	13,000	N/A	11/26/2001	1 yr automatic renewal yr to yr.	90 day written notice of intent not to renew. 60 day written notice to terminate for cause.		August 1, 2012	NO
IL	Bolingbrook - Sewer	Sonya Metcalfe	1	20,380	20,380	N/A	7/25/2002	Contract until 12/31/2042 then 1 yr automatic renewal yr to yr	90 day written notice of intent not to renew. 60 day written notice to terminate for cause.		December 31, 2042	NO
IL	Bolingbrook - Storm water	Sonya Metcalfe	1	21,000	21,000	N/A	7/25/2002	Contract until 12/31/2042 then 1 yr automatic renewal yr to yr	90 day written notice of intent not to renew. 60 day written notice to terminate for cause.		December 31, 2042	NO
IL	Peoria - Trash	Sonya Metcalfe	1	34,720	34,720	N/A	12/26/2003	1 yr automatic renewal yr to yr	90 day written notice of intent not to renew. 120 day written notice to terminate for cause. If trash fee repealed by City, 30 days will		January 1, 2011	NO
IL	DLRPA Water Utilities - Water & Surcharge	Sonya Metcalfe	2	130/180	130/180	N/A	6/1/2009	Contract until 12/2/18 then renew for 3 successive terms of 10 years	120 day notice of termination of renewal. 30 days notice for material breach after 60 allowance to cure breach.		December 2, 2018	NO
		IL	17									
IN	Richmond	Jeff Henson	1	15,007	14,729	278.00	1/1/1994	Current term 1/1/05-12/31/14; renew by affirmative extension	Refuse to renew		December 31, 2014	No
IN	Farmersburg	Jeff Henson	1	514			1/1/1999	Current term 12/15/10-12/15/15; auto renewal	Mutual agreement		December 15, 2015	No
IN	Sullivan	Jeff Henson	1	2,000			5/1/1997	Current term 12/14/-06-12/14-11	End of term unless both parties agree to renew		December 14, 2011	No
IN	Newburgh	Jeff Henson	1	9,134	6,859	2,275.00	6/1/1997	Current term 5/31/02 with auto renewal	180 days notice		May 31, 2012	No

State	Municipality	State/Divisional Contact	# of Contracts	# of Customers	# Mutual Customer	# Non Mutual Customers	Original effective date	Term (length) of the contracts	Contract termination provision	other	Earliest Termination Date (month/day/year)	Regulatory / Statutory Restrictions (Yes / No)
IN	Summitville	Jeff Henson	1	366	366	-	5/28/1996	Current term 6/9/08-6/9/13 with auto renewal	60 days notice at end of term		June 9, 2013	No
IN	Wabash	Jeff Henson	1	4,364	4,318	46.00	7/1/1996	Through 12/31/01; Not renewed but services still provided	Terminated		Anytime	No
IN	Terre Haute	Jeff Henson	1	27,583	22,466	5,117.00	2/1/1995	Current term 4 years with auto 1-year renewals	180 days prior to end of term		February 1, 2012	No
IN	Winfield	Jeff Henson	1	1,187	1,109	78.00	9/30/2006	5 years with auto renewal for 1 year terms	60 days prior to end of a term		September 30, 2011	No
IN	Damons Run Conservatory	Jeff Henson	1	268	268	-	6/6/2008	5 years with auto renewal for 1 year terms	61 days prior to end of a term		June 6, 2013	No
IN	NW White Oak	Jeff Henson	1	18	18	-	None	None	None		None	No
IN	Crawfordsville Sewer	Jeff Henson	1	5,419	5,419	-	10/19/2009	5 years with auto renewal for 2 year terms	60 days notice		October 19, 2014	No
IN	Crawfordsville Storm	Jeff Henson	1	included in above	included in above	-	No separte agreement - see above	5 years with auto renewal for 2 year terms	60 days notice		October 19, 2014	No
IN	Greenwood	Jeff Henson	1	23,178	17,364	5,814.00	1/7/2010	5 years w/auto 2 year renewals	60 days notice		January 7, 2015	No
IN	Shorewood	Jeff Henson	1	825	825	-	11/20/2009	5 years w/auto 2 year renewals	60 days notice		January 20, 2014	No
		IN	14									
KY	Lexington-Fayette urban County Government (LFUCG) Sewer	Takisha Walker / Rachel Cole / Bryan Siler	1	104,422	104,422	0	10/1/2007	4 yrs. with automatic 1 yr renewals	90 day written notice of intent not to renew. 180 day written notice to terminate for any reason.		October 1, 2011	No
KY	LFUCG Landfill **(majority also sewer customers)**	Takisha Walker / Rachel Cole / Bryan Siler	1	82,157	82,157	0	10/1/2007	4 yrs. with automatic 1 yr renewals	90 day written notice of intent not to renew. 180 day written notice to terminate for any reason.		October 1, 2011	No
KY	LFUCG Storm Water **(majority also sewer customers)**	Takisha Walker / Rachel Cole / Bryan Siler	1	95,778	94,197	1,581	8/1/2009	2.2 yrs. With automatic 1 yr renewals	90 day written notice of intent not to renew. 60 day written notice to terminate for any reason.		October 1, 2011	No
KY	Treehaven	Takisha Walker / Rachel Cole / Bryan Siler	1	199	199	0	1/2/1997	Indeterminate	-- Remains in effect until either party may terminate -- Terminates when Rockwell Village system is connected to Winchester system.		July 11, 2011	No
KY	Verna Hills	Takisha Walker / Rachel Cole / Bryan Siler	1	154	154	0	11/21/1996	Indeterminate	Remains in effect until either party terminates 90 day written notice to terminate		July 11, 2011	No
KY	Sadieville	Takisha Walker / Rachel Cole / Bryan Siler	1	111	111	0	7/1/1997	1 yr. with an opportunity for annual renewals	60 day written notice		September 12, 2011	No
KY	Georgetown	Takisha Walker / Rachel Cole / Bryan Siler	1	75	75	0		3 yrs. With automatic 1 yr. renewals	60 day written notice of intent not to renew. 180 day written notice to terminate for any reason.		Either party may terminate with 60 days written notice of termination	No
		KY	7									

State	Municipality	State/Divisional Contact	# of Contracts	# of Customers	# Mutual Customer	# Non Mutual Customers	Original effective date	Term (length) of the contracts	Contract termination provision	other	Earliest Termination Date (month/day/year)	Regulatory / Statutory Restrictions (Yes / No)
MO	Silver Creek	Sonya Metcalfe	1	250	247	3	9/14/2010	1yr - automatic renewal yr to yr	60 day notice of termination of renewal. Village can terminate upon 60 days written notice. Company can terminate upon 90 days written notice.		September 13, 2012	No
MO	Brunswick Sewer & Trash	Sonya Metcalfe	1	390	390	N/A	9/25/1995	1yr - automatic renewal yr to yr	6 months written notice of intent not to renew.		September 1, 2012	No
MO	Village of Duquesne	Sonya Metcalfe	1	500	545	5	7/13/2009	1yr - automatic renewal yr to yr	60 day notice of termination of renewal. City can terminate upon 60 days written notice. Company can terminate upon 90 days written notice.		July 13, 2012	No
MO	Village of Country Club Surchg	Sonya Metcalfe	1	555	555	N/A	1/1/2009	Contract until 8/26/13 then 1 yr - automatic renewal yr to yr	60 day notice of termination of renewal. Village can terminate upon 60 days written notice. Company can terminate upon 90 days written notice.		August 26, 2013	No
MO	Riverside	Sonya Metcalfe	1	660	660	N/A	12/1/2002	1yr - automatic renewal yr to yr	6 month written notice of intent not to renew.		May 26, 2012	No
MO	City of Parkville	Sonya Metcalfe	1	1600	1600	N/A	5/10/2001	1yr - automatic renewal year to year	6 month written notice of intent not to renew.		May 10, 2012	No
MO	Warrensburg	Sonya Metcalfe	1	7,150	7,150	N/A	12/31/2005	1yr - automatic renewal yr to yr	60 days written notice of intent not to renew.		December 31, 2011	No
MO	Jefferson City	Sonya Metcalfe	1	10,730	10,730	N/A	5/1/2000	On month to month basis.	90 day written notice of intent not to renew.		December 1, 2011	No
MO	Joplin Garbage	Sonya Metcalfe	1	17,250	17,100	150	4/1/2004	1yr - automatic renewal yr to yr	90 day written notice of intent not to renew. 60 day written notice to terminate for cause.		Apr 1, 2012	No
MO	Joplin Sewer	Sonya Metcalfe	1	21,400	21,170	230	2/1/1998	1yr - automatic renewal yr to yr	6 months written notice of intent not to renew.		January 1, 2012	No
MO	St. Joseph	Sonya Metcalfe	1	26,820	26,820	N/A	1/1/1996	1yr - automatic renewal year to year	180 days advance notice + additional 180 days can be requested		December 31, 2011	No
		MO	11									
PA	Baldwin Twp	Cheryl DiSanti	1	940	940	0	3/1/2000	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 9/3/2011	03/01/12	NO
PA	Wallace boggs	Cheryl DiSanti	1	357	313	44	10/3/2001	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 4/6/2012	10/03/12	NO

State	Municipality	State/Divisional Contact	# of Contracts	# of Customers	# Mutual Customer	# Non Mutual Customers	Original effective date	Term (length) of the contracts	Contract termination provision	other	Earliest Termination Date (month/day/year)	Regulatory / Statutory Restrictions (Yes / No)
PA	Caln Twsp	Cheryl DiSanti	1	282	239	43	4/2/2002	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 10/5/2011	04/02/12	NO
PA	Carnegie	Cheryl DiSanti	1	3263	3263	0	3/14/2000	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 9/16/2011	03/14/12	NO
PA	Cecil Twsp	Cheryl DiSanti	1	2814	2804	10	1/25/2001	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 7/29/2012	1/25/2013	NO
PA	Clairton	Cheryl DiSanti	1	2981	2981	0	8/27/2003	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 2/29/2012	8/27/2012	NO
PA	Collier Twsp	Cheryl DiSanti	1	2808	2794	14	9/28/2001	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 4/2/2012	9/29/2012	NO
PA	Crafton	Cheryl DiSanti	1	2272	2272	0	2/15/2001	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 8/19/2011	2/15/2012	NO
PA	Castle Shannon	Cheryl DiSanti	1	3170	3170	0	6/29/2001	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 1/1/2012	6/29/2012	NO
PA	Dormont	Cheryl DiSanti	1	3292	3292	0	12/12/2000	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 6/15/2012	12/12/2012	NO
PA	Elizabeth	Cheryl DiSanti	1	640	640	0	4/17/1998	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 10/20/2011	4/17/2012	NO
PA	Greentree	Cheryl DiSanti	1	2057	2057	0	3/22/2001	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 9/24/2011	3/22/2012	NO
PA	Heidelbergh	Cheryl DiSanti	1	626	626	0	10/2/2002	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 4/5/2012	10/2/2012	NO
PA	Homestead	Cheryl DiSanti	1	1193	1193	0	2/14/2001	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 8/18/2011	2/14/2012	NO
PA	Ingram Bor	Cheryl DiSanti	1	1239	1239	0	1/9/2002	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 7/13/2012	1/9/2013	NO
PA	Kane Bor	Cheryl DiSanti	1	2970	2937	33	12/9/2002	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 6/12/2012	12/9/2012	NO
PA	McDonald	Cheryl DiSanti	1	1005	1005	0	4/20/2001	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 10/23/2011	4/20/2012	NO

State	Municipality	State/Divisional Contact	# of Contracts	# of Customers	# Mutual Customer	# Non Mutual Customers	Original effective date	Term (length) of the contracts	Contract termination provision	other	Earliest Termination Date (month/day/year)	Regulatory / Statutory Restrictions (Yes / No)
PA	Mt. Lebanon	Cheryl DiSanti	1	11462	11462	0	1/22/2001	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 7/26/2012	1/22/2013	NO
PA	Mt. Oliver	Cheryl DiSanti	1	1290	1290	0	6/23/2003	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 12/26/2011	6/23/2012	NO
PA	W. Hanover	Cheryl DiSanti	1	2402	1649	753	3/18/2005	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 9/20/2011	3/18/2012	NO
PA	Rosslyn	Cheryl DiSanti	1	174	174	0	6/10/2003	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 12/13/2011	6/10/2012	NO
PA	Scott Twsp	Cheryl DiSanti	1	5493	5493	0	11/13/2002	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 5/17/2012	11/13/2012	NO
PA	S. Fayette	Cheryl DiSanti	1	5711	5699	12	3/5/2001	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 9/7/2011	3/5/2012	NO
PA	Warren City of	Cheryl DiSanti	1	4206	4193	13	no agreement on file	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.		no agreement on file	NO
PA	Glassport	Cheryl DiSanti	1	1962	1962	0	6/1/2004	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any	180 days notice 12/4/2011	6/1/2012	NO
PA	Whitaker	Cheryl DiSanti	1	528	528	0	8/7/2003	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 2/9/2012	8/7/2012	NO
PA	Yardley	Cheryl DiSanti	1	896	883	13	10/1/2001	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 4/4/2012	10/1/2012	NO
PA	Connoquenessing Bor	Cheryl DiSanti	1	191	191	0	10/23/2003	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 4/26/2012	10/23/2012	NO
PA	W. Homestead	Cheryl DiSanti	1	947	947	0	12/17/2003	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 6/20/2012	12/17/2012	NO
PA	Collier Twp Square	Cheryl DiSanti	1	combined with Collier Twp Municipal			9/28/2001	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 4/1/2012	9/29/2012	NO
PA	Thompson Bor	Cheryl DiSanti	1	109	0	109	4/5/2004	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 10/8/2011	4/5/2012	NO
PA	Spring Twsp	Cheryl DiSanti	1	8166	7898	268	9/3/2004	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 3/7/2012	9/3/2012	NO

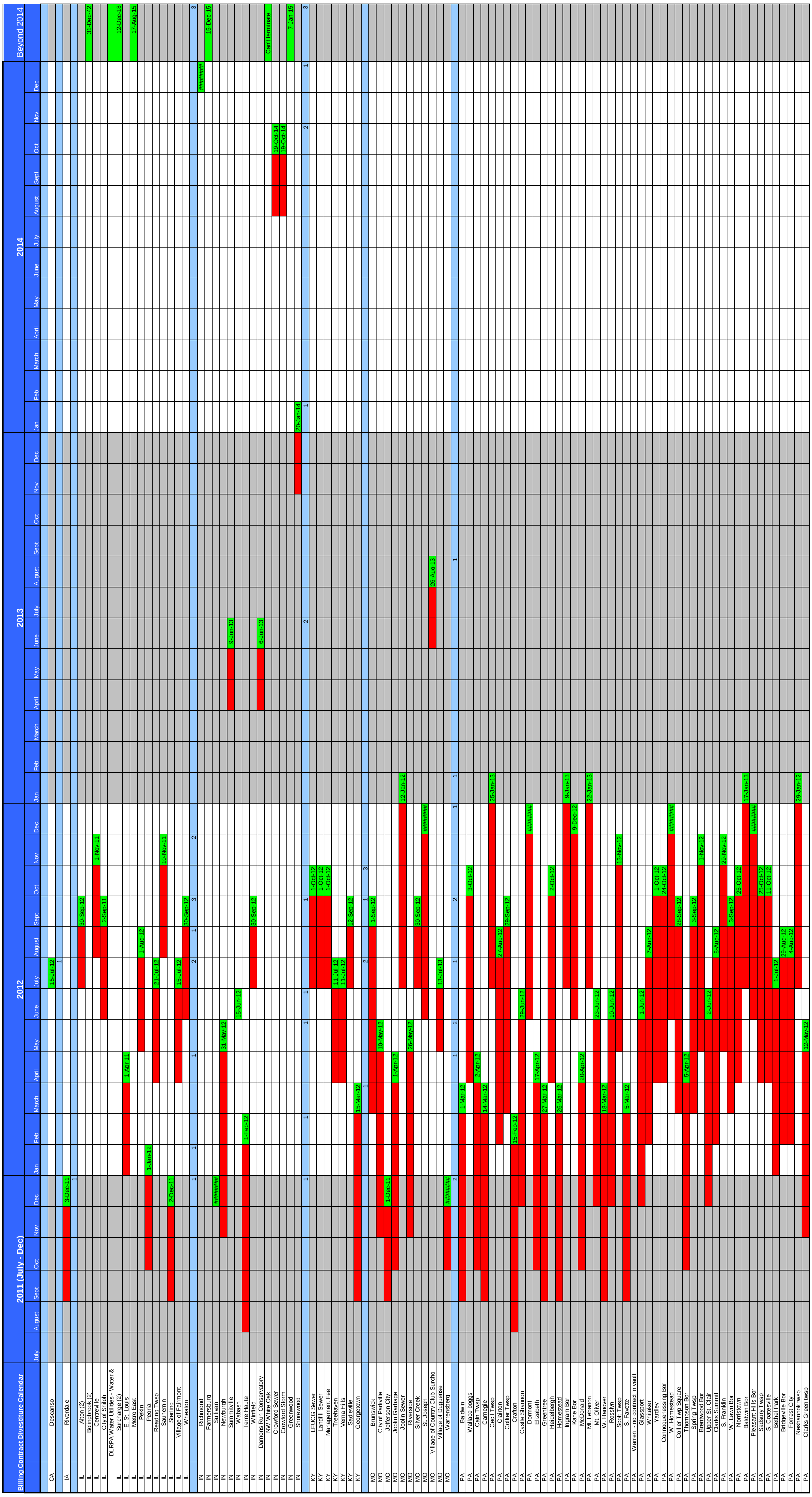
State	Municipality	State/Divisional Contact	# of Contracts	# of Customers	# Mutual Customer	# Non Mutual Customers	Original effective date	Term (length) of the contracts	Contract termination provision	other	Earliest Termination Date (month/day/year)	Regulatory / Statutory Restrictions (Yes / No)
PA	Brentwood Bor	Cheryl DiSanti	1	4008	4008	0	11/1/2004	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 5/5/2012	11/1/2012	NO
PA	Upper St. Clair	Cheryl DiSanti	1	6978	6978	0	6/2/2005	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 12/5/2011	6/2/2012	NO
PA	Clarks Summit	Cheryl DiSanti	1	2281	2248	33	8/8/2005	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 2/10/2012	8/8/2012	NO
PA	S. Franklin	Cheryl DiSanti	1	188	188	0	11/29/2005	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 6/2/2012	11/29/2012	NO
PA	W. Lawn Bor	Cheryl DiSanti	1	691	0	691	9/3/2004	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 3/7/2012	9/3/2012	NO
PA	Norristown	Cheryl DiSanti	1	9386	9369	17	10/25/2005	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 4/28/2012	10/25/2012	NO
PA	Baldwin Bor	Cheryl DiSanti	1	7799	7799	0	1/17/2006	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 7/21/2012	1/17/2013	NO
PA	Pleasant Hills Bor	Cheryl DiSanti	1	3119	3119	0	12/19/2005	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 6/22/2012	12/19/2012	NO
PA	Sadsury Twsp	Cheryl DiSanti	1	580	580	0	10/25/2006	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 4/28/2012	10/25/2012	NO
PA	S. Coatesville	Cheryl DiSanti	1	449	449	0	10/11/2006	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 4/14/2012	10/11/2012	NO
PA	Bethel Park	Cheryl DiSanti	1	12343	12331	12	7/1/2007	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 1/3/2012	7/1/2012	NO
PA	Bridgeville Bor	Cheryl DiSanti	1	2156	2156	0	8/29/2008	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 3/2/2012	8/29/2012	NO
PA	Forrest City	Cheryl DiSanti	1	713	713	0	8/4/2008	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 2/6/2012	8/4/2012	NO
PA	Neshannok twsp	Cheryl DiSanti	1	3383	3328	55	1/29/2009	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 8/2/2011	1/29/2012 (end of 3 year term)	NO
PA	Clarks Green twsp	Cheryl DiSanti	1	647	640	7	5/12/2009	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 11/14/2011	5/12/2012 (end of 3 year term)	NO

State	Municipality	State/Divisional Contact	# of Contracts	# of Customers	# Mutual Customer	# Non Mutual Customers	Original effective date	Term (length) of the contracts	Contract termination provision	other	Earliest Termination Date (month/day/year)	Regulatory / Statutory Restrictions (Yes / No)
PA	Palmer Twsp	Cheryl DiSanti	1	1296	1296	0	7/29/2009	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 1/31/2012	7/29/2012 (end of 3 year term)	NO
PA	N. Londonberry Twsp	Cheryl DiSanti	1	2425	2415	10	7/29/2009	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 1/31/2012	7/29/2012 (end of 3 year term)	NO
PA	Union twsp	Cheryl DiSanti	1	224	219	5	11/19/2009	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 5/23/2012	11/19/2012 (3 year term up)	NO
PA	Canonsburg	Cheryl DiSanti	1	4371	4368	3	2/25/2010	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 8/29/2012	2/25/2013 (end of 3 year term)	NO
PA	Upper Providence	Cheryl DiSanti	1	110	110	0	3/2/2010	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 9/3/2012	3/2/2013 (end of 3 year term)	NO
PA	New Castle/Union	Cheryl DiSanti	1	1957	1957	0	10/22/2010	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 4/25/2013	10/22/2013 (end of 3 year term)	NO
PA	Lemoyne Borough	Cheryl DiSanti	1	1810	1810	0	12/21/2010	3 year term contracts. Automatically renewed for successive one (1) year terms.	Written notice of termination at least (180) days prior to the expiration of initial term or any subsequent renewal term.	180 days notice 6/24/2013	12/21/2013 (end of 3 year term)	NO
		PA	54									
TN	Chattenooga	Rachel Bartley	1	50,684	50,684	-	4/22/1950	Automatic one year renewal.	6 month notice of cancellation		September 30, 2012	Yes
TN	Fort Oglethorpe Sewer	Rachel Bartley	1	723	723	-	3/20/1986	Automatic one year renewal.	6 month notice of cancellation		September 30, 2012	Yes
TN	Fort Oglethorpe Fixed Charge	Rachel Bartley	1	-	-	-		Automatic one year renewal.	6 month notice of cancellation		September 30, 2012	Yes
TN	Lookout Mountain GA Sewer	Rachel Bartley	1	597	597	-		Automatic one year renewal.	6 month notice of cancellation		September 30, 2012	Yes
TN	Lookout Mountain GA Fixed Charge	Rachel Bartley	1	-	-	-		Automatic one year renewal.	6 month notice of cancellation		September 30, 2012	Yes
TN	Rossville Sewer	Rachel Bartley	1	1,385	1,385	-	11/22/1994	Automatic one year renewal.	6 month notice of cancellation		September 30, 2012	Yes
TN	Rossville Fixed Chg	Rachel Bartley	1	-	-	-		Automatic one year renewal.	6 month notice of cancellation		September 30, 2012	Yes
TN	Rossville Admin Fee	Rachel Bartley	1	1,631	1,631	-		Automatic one year renewal.	6 month notice of cancellation		September 30, 2012	Yes
TN	Redbank Hamilton Sewer	Rachel Bartley	1	3,086	3,086	-	6/28/1972	Automatic one year renewal.	6 month notice of cancellation		September 30, 2012	Yes
TN	Redbank Hamilton Fixed Charge	Rachel Bartley	1	2,949	2,949	-		Automatic one year renewal.	6 month notice of cancellation		September 30, 2012	Yes
TN	Redbank Hamilton Garbage	Rachel Bartley	1	3,284	3,284	-		Automatic one year renewal.	6 month notice of cancellation		September 30, 2012	Yes
TN	E. Ridge Hamilton Sewer	Rachel Bartley	1	8,115	8,115	-	7/14/1983	Automatic one year renewal.	6 month notice of cancellation		November 30, 2012	Yes
TN	E. Ridge Hamilton Fixed Charge	Rachel Bartley	1	7,808	7,808	-		Automatic one year renewal.	6 month notice of cancellation		November 30, 2012	Yes
TN	E. Ridge Hamilton Garbage	Rachel Bartley	1	7,462	7,462	-		Automatic one year renewal.	6 month notice of cancellation		November 30, 2012	Yes
TN	Hamilton County Sewer	Rachel Bartley	1	352	352	-	12/5/1990	Automatic one year renewal.	6 month notice of cancellation		November 30, 2012	Yes
TN	Hamilton County Fixed charge	Rachel Bartley	1	346	346	-		Automatic one year renewal.	6 month notice of cancellation		November 30, 2012	Yes
TN	Ridgeside Hamilton Cty Sewer	Rachel Bartley	1	154	154	-		Automatic one year renewal.	6 month notice of cancellation		November 30, 2012	Yes
TN	Ridgeside Hamilton Cty fixed Charge	Rachel Bartley	1	7	7	-		Automatic one year renewal.	6 month notice of cancellation		November 30, 2012	Yes
TN	Walker County Sewer	Rachel Bartley	1	322	322	-		Automatic one year renewal.	6 month notice of cancellation		November 30, 2012	Yes
TN	E. Ridge Gtown Hamilton Sewer	Rachel Bartley	1	443	443	-		Automatic one year renewal.	6 month notice of cancellation		November 30, 2012	Yes

State	Municipality	State/Divisional Contact	# of Contracts	# of Customers	# Mutual Customer	# Non Mutual Customers	Original effective date	Term (length) of the contracts	Contract termination provision	other	Earliest Termination Date (month/day/year)	Regulatory / Statutory Restrictions (Yes / No)
TN	E. Ridge Gtown Hamilton Fixed Charge	Rachel Bartley	1	7,808	7,808	-		Automatic one year renewal.	6 month notice of cancellation		November 30, 2012	Yes
TN	E. Ridge Gtown Hamilton Garbage	Rachel Bartley	1	442	442	-		Automatic one year renewal.	6 month notice of cancellation		November 30, 2012	Yes
TN	Ringgold Sewer	Rachel Bartley	1	12	12	-	5/27/2004	30 years from the date of the first billing of sewer charges	Self renewing for periods of 5 yrs thereafter. Agreement date: 5/27/2004		December 31, 2012	Yes
TN	Lookout Mountain TN Hamilton Sewer	Rachel Bartley	1	837	837	-	5/3/2006	Automatic one year renewal.	6 month notice of cancellation		December 31, 2012	Yes
TN	Lookout Mountain TN Hamilton Fixed Charge	Rachel Bartley	1	828	828	-	9/1/1999	Automatic one year renewal.	6 month notice of cancellation		December 31, 2012	Yes
TN	Lookout Mountain TN Hamilton Garbage	Rachel Bartley	1	-	-	-		Automatic one year renewal.	6 month notice of cancellation		December 31, 2012	Yes
TN	Lone Oak	Rachel Bartley	1	126	-	126		Automatic one year renewal.	6 month notice of cancellation		December 31, 2012	Yes
		TN	27									
VA	Hopewell Sewer & Refuse	Tonni Monk / Linda Bouvette	1	8,017	8,017	0	9/19/1986	10 yr. w/ automatic renewal	Either party may terminate with 1 yr. written notice of termination		Either party may terminate with 1 yr. written notice of termination	No
VA	Hopewell Tax	Tonni Monk / Linda Bouvette										Yes
VA	Alexandria Sewer	Tonni Monk / Linda Bouvette	2	25,304	25,304	0	9/1/1954	10 yr. w/ automatic renewal	Either party may terminate with 1 yr. written notice of termination		Either party may terminate with 1 yr. written notice of termination	No
VA	Alexandria Refuse	Tonni Monk / Linda Bouvette	1	298	298	0						
VA	Alexandria Tax & Sewer	Tonni Monk / Linda Bouvette										Yes
		VA	4									
WV	Huntington Sewer	Jeff Ferrell/Linda Bouvette	1	21,545	21,545	0	10/1/1955	Automatic one year renewal.	30 day notice of termination required.		December 31, 2011	Yes
WV	Barboursville	Jeff Ferrell/Linda Bouvette	1	1,791	1,791	0	10/1/1998	Automatic one year renewal.	30 day notice of termination required.		December 31, 2011	Yes
WV	Green Acres	Jeff Ferrell/Linda Bouvette	1	103	103	0	10/6/1997	Automatic one year renewal.	30 day notice of termination required.		December 31, 2011	Yes
WV	Spring valley	Jeff Ferrell/Linda Bouvette	1	528	528	0	10/1/1998	Automatic one year renewal.	30 day notice of termination required.		December 31, 2011	Yes
WV	Sissonville	Jeff Ferrell/Linda Bouvette	1	1644	1644	0	10/1/1998	Automatic one year renewal.	90 day notice of termination required.		December 31, 2011	Yes
WV	Linmont	Jeff Ferrell/Linda Bouvette	1	85	85	0	10/1/1998	Automatic one year renewal.	90 day notice of termination required.		December 31, 2011	Yes
WV	Chestnut	Jeff Ferrell/Linda Bouvette	1	80	80	0	10/1/1998	Automatic one year renewal.	90 day notice of termination required.		December 31, 2011	Yes
WV	Hinton	Jeff Ferrell/Linda Bouvette	1	1,206	1,206	0	12/17/2004	Automatic one year renewal.	90 day notice of termination required.		December 31, 2011	Yes
WV	Esquire Est	Jeff Ferrell/Linda Bouvette	1	141	141	0	12/1/2001	Automatic one year renewal.	90 day notice of termination required.		December 31, 2011	Yes

State	Municipality	State/Divisional Contact	# of Contracts	# of Customers	# Mutual Customer	# Non Mutual Customers	Original effective date	Term (length) of the contracts	Contract termination provision	other	Earliest Termination Date (month/day/year)	Regulatory / Statutory Restrictions (Yes / No)
WV	Belle	Jeff Ferrell/Linda Bouvette	1	625	625	0	11/16/1998	Automatic one year renewal.	90 day notice of termination required.		December 31, 2011	Yes
WV	Marmet	Jeff Ferrell/Linda Bouvette	1	688	688	0	11/16/1998	Automatic one year renewal.	90 day notice of termination required.		December 31, 2011	Yes
WV	Chesapeak	Jeff Ferrell/Linda Bouvette	1	700	700	0	11/16/1998	Automatic one year renewal.			December 31, 2011	Yes
WV	Elk Valley	Jeff Ferrell/Linda Bouvette	1	4,137	4,137	0	7/20/1998	Automatic one year renewal.	90 day notice of termination required.		December 31, 2011	Yes
WV	WV Bluefield	Jeff Ferrell/Linda Bouvette	1	4822	4822	0	11/12/2004	Automatic one year renewal.	90 day notice of termination required.		December 31, 2011	Yes
WV	Smithers Sanit Bd	Jeff Ferrell/Linda Bouvette	1	380	380	0	4/5/2004	Automatic one year renewal.	90 day notice of termination required.		December 31, 2011	Yes
WV	Big Bend	Jeff Ferrell/Linda Bouvette	1	107	107	0	1/26/2004	Automatic one year renewal.	90 day notice of termination required.		December 31, 2011	Yes
WV	Culloden	Jeff Ferrell/Linda Bouvette	1	1211	1211	0	7/1/2007	Automatic one year renewal.	90 day notice of termination required.		December 31, 2011	Yes
WV	Holiday Park	Jeff Ferrell/Linda Bouvette	1	28	28	0	9/25/2007	Automatic one year renewal.	90 day notice of termination required.		December 31, 2011	Yes
WV	Town of Anstead	Jeff Ferrell/Linda Bouvette	1	629	629	0	9/7/2010	Automatic one year renewal.	90 day notice of termination required.		June 20, 2012	Yes
WV	Montgomery Sanit Bd	Jeff Ferrell/Linda Bouvette	1	711	711	0	1/10/2011	Automatic one year renewal.	90 day notice of termination required.		December 31, 2011	Yes
WV	Surcharge (64 Districts)	Jeff Ferrell/Linda Bouvette		Not in scope								Yes
WV	2% Taxes (36 Districts)	Jeff Ferrell/Linda Bouvette		Not in scope						Statutory		Yes
WV	Huntington Rev.	Jeff Ferrell/Linda Bouvette		Not in scope						Statutory		Yes
		WV	20									
	Total		156									

Planning Calendar - Remainder of 2011			2011																									Beyond 2011
			July				August				September					October				November				December					
#	Activitiy Description	Owner	w/e July 08	w/e Jul 15	w/e July 22	w/e July 29	w/e Aug 05	w/e Aug 12	w/e Aug 19	w/e Aug 26	w/e Sept 02	w/e Sept 09	w/e Sept 16	w/e Sept 23	w/e Sept 30	w/e Oct 07	w/e Oct 14	w/e Oct 21	w/e Oct 28	w/e Nov 04	w/e Nov 11	w/e Nov 18	w/e Nov 25	w/e Dec 02	w/e Dec 09	w/e Dec 16	w/e Dec 23	w/e Dec 30	
	Preliminary communication to Presidents and Customer Relations leads on decision to exit billing contracts.	David Baker	######																									
	Submit completed AW Billing Contract information to David Baker. Spreadsheet should include: · Contract term dates and provisions · List of potential vendors · Statutory and regulatory restrictions	Customer Relations Directors	07/11/11																									
	Prepare information packet to exit billing agreements. Packet to include: · Flow chart which shows the timing of each agreements exit date · For those contract that need to be converted to SAP, explanation of services not included in SAP offering (SAP service package provided by BT) · List of potential alternative vendors for each contract · Confirmation that data usage and billing shut-off services are available to munis? · Explanation of statutory and regulatory restrictions for each state's contracts · IT constraints and solutions to exit the contracts	Customer Relations Directors	Due 7/29/2011																									
	Develop communications plan for use by the state teams to approach municipalities.	EA Team (Joe Loughmiller)	Due 7/29/2011																									
	AW Billing Contract Spreadsheet and Commuincation Plan provided to state teams with information for planning and communicating exit strategies. Package to include: · Communications plan developed by Joe Loughmiller and EA team members · Contract term dates and provisions · Statutory and regulatory restrictions, if any, governing billing services to municipalities · List of potential service providers	Customer Relations Directors					08/01/11																					
	Discussions between state operations and municipalities to notify them of termination dates and provide alternative options.	State Teams					08/01/11 - 11/29/11																					
	Continue to develop and modify contract exiting schedule based on contract terms, resource capacity and feedback from state teams.	IT and Customer Relations team					08/01/11 - 11/30/11																					
	Final list of contracts that need to be converted to SAP until contract terms or other requirements can be satisfied submitted to BT.	IT and Customer Relations team																					12/01/11					


Billing Contract Divestiture Calendar
2011 (July - Dec)
2012
2013
2014
Beyond 2014

Billing Contract Divestiture Calendar

State	Contract	Termination Date
PA	Palmer Twsp	29-Jul-12
PA	N. Londonberry Twsp	29-Jul-12
PA	Union twsp	19-Nov-12
PA	Canonsburg	25-Feb-13
PA	Upper Providence	2-Mar-13
PA	New Castle/Union	22-Oct-13
PA	Lemoyne Borough	########
TN	Chattenooga	30-Jul-12
TN	Fort Oglethorpe Sewer	15-Jul-12
TN	Fort Oglethorpe Fixed Charge	15-Jul-12
TN	Lookout Mountain GA Sewer	15-Jul-12
TN	Lookout Mountain GA Fixed Charge	15-Jul-12
TN	Rossville Sewer	15-Aug-12
TN	Rossville Fixed Chg	15-Aug-12
TN	Rossville Admin Fee	15-Aug-12
TN	Redbank Hamilton Sewer	25-Aug-12
TN	Redbank Hamilton Fixed Charge	25-Aug-12
TN	Redbank Hamilton Garbage	25-Aug-12
TN	E. Ridge Hamilton Sewer	15-Jun-12
TN	E. Ridge Hamilton Fixed Charge	15-Jun-12
TN	E. Ridge Hamilton Garbage	15-Jun-12
TN	Hamilton County Sewer	30-Nov-12
TN	Hamilton County Fixed charge	30-Nov-12
TN	Ridgeside Hamilton Cty Sewer	30-Nov-12
TN	Ridgeside Hamilton Cty fixed Charge	30-Nov-12
TN	Walker County Sewer	30-Nov-12
TN	E. Ridge Gtown Hamilton Sewer	30-Nov-12
TN	E. Ridge Gtown Hamilton Fixed Charge	30-Nov-12
TN	E. Ridge Gtown Hamilton Garbage	30-Nov-12
TN	Ringgold Sewer	########
TN	Lookout Mountain TN Hamilton Sewer	########
TN	Lookout Mountain TN Hamilton Fixed Charge	########
TN	Lookout Mountain TN Hamilton Garbage	########
TN	Lone Oak	31-Dec-12
VA	Hopewell Sewer & Refuse	1-Sep-12
VA	Hopewell Tax	
VA	Alexandria Sewer	1-Oct-12
VA	Alexandria Refuse	
VA	Alexandria Tax & Sewer	
WV	Huntington Sewer	28-Feb-12
WV	Barboursville	15-Jan-12
WV	Green Acres	15-Jan-12
WV	Spring valley	15-Jan-12
WV	Sissonville	15-Jan-12
WV	Linmont	20-Jan-12
WV	Chestnut	20-Jan-12
WV	Hinton	20-Jan-12
WV	Esquire Est	1-Feb-12
WV	Belle	1-Feb-12
WV	Marmet	1-Feb-12
WV	Chesapeak	1-Feb-12
WV	Elk Valley	30-Jan-12
WV	WV Bluefield	15-Feb-12
WV	Smithers Sanit Bd	15-Feb-12
WV	Big Bend	15-Feb-12
WV	Culloden	30-Jan-12
WV	Holiday Park	30-Jan-12
WV	Town of Anstead	20-Jun-12
WV	Montgomery Sanit Bd	28-Feb-12
WV	Princeton Sanitary Bd	
WV	Surcharge (64 Districts)	
WV	2% Taxes (36 Districts)	
WV	Huntington Rev.	

Period	Month	PA	TN	VA	WV	Total
2011 (July - Dec)	July					0
	August					0
	Sept					0
	Oct					0
	Nov					0
	Dec					5
2012	Jan				10	11
	Feb	1			9	11
	March	6				7
	April	3	1			6
	May	3	1			7
	June	4	3		1	9
	July	3	5			14
	August	5	6			12
	Sept	4	0	1		12
	Oct	7	0	1		11
	Nov	4	7			13
	Dec	4	4			9
2013	Jan	5				6
	Feb	1				1
	March	1				1
	April					0
	May					0
	June					2
	July					0
	August					1
	Sept					0
	Oct	1				1
	Nov					0
	Dec	1				1
2014	Jan					1
	Feb					0
	March					0
	April					0
	May					0
	June					0
	July					0
	August					0
	Sept					0
	Oct					2
	Nov					0
	Dec					1
Beyond 2014					0	6

2011 = 5
2012 = 122
2013 = 13
2014 = 4
2015+ = 6

Termination Date
Notification Requirement

Cost Analysis for Data Usage Customers

Each state must decide its individual strategy/pricing for these agreements. No standard AW system wide pricing or policy will be generated.

Sewer Shut-Off Agreements

Each state must decide upon its costs charged for sewer shut off agreements. There will be no standard, system wide rate; regulatory and cost differences drive this decision.

IT Requirements & Constraints

Description	Impact	Potential Solution
Takes approximately 30 days to exit one billing contract	With 170 contracts and approximately 14 months to work with before the end of 2012, that's 12 contracts a month Contracts greater that 5k should be handled one at a time Contracts between 1k and 5k = 2 at a time Contracts less than 1k can be handled 4 at a time	Hire additional resources Use resources currently asigned to BT
Need to define how outstanding A/R balances will be handled.	Will all A/R balances for O&M utility types be handled the same way? In the past we have typically issued adjustments to zero out any balances when doing divestitures. If this is the way that these will be handled as well, need to determine a standard process for billing these adjustments in order to prevent additional payments from posting after the balances are zeroed out.	Once decision is made on what will happen with balances, develop standard process with billing and Operations. Standard process should include handling any pending misc charges as well.
Need to identify any accounts that are O&M only and review for additional updates.	There are some areas with O&M Water and O&M Sewer which means that after divestiture, the entire account will be inactive. These accounts will need additional action taken to close pending serivce orders, prevent the creation of new service orders, prevent incorrect collection activity, scrapping O&M Water meters, etc.	Identify areas where this is a concern, create separate process for handling and prevent scheduling the divestiture of these contracts too close together. WSS will also need to be considered and web accounts deactivated
Bad debt balances	Will any consideration need to be made for bad debt balances on O&M Utility Types?	
Additional time will be required for any authority that does not currently receive usage data, but will need to going forward.	Additional configuration will be needed for authorities that need to be set up to receive usage data.	Create process for setting up divested authorities on usage data and prevent scheduling the divestiture of these contracts too close together.
Indentify reporting needs	Will we need to provide any reports to the authorities at the time of divestiture? If standard information will need to be provided at each divestiture, should develop standard reports instead of utilizing query.	Determine if standard information can be provided to all authorities. This is critical to keeping within the estimates provided. Custom data requirements for each contract will increase the time to divest.
Will any communciations be necessary - letters, bill messages, etc.	If there will be letters or bill messages needed prior to these divestitures, need to determine if a standard template can be developed and how much time prior to divestiture communication should occur.	

Vendor name	Available Services	Contact Information	PA	NJ	NY	WV	VA	KY	TN	IN	IL	IA	MO	AZ	CA	MI
Western																
Locis	Muni Code Billing										X					
Keystone Software	Muni Code Bill Print									X						
Water Systems Incorparted	Utility Services Provides a variety of utility billing services in over 30 states.	800-679-2837 www.watersystems.com														
Pennsylvania																
Jordan Tax Service	Billing/Collections	724-731-2300 or 412-835-5243	X													
Pennsylvania Municipal Services	Billing/Collections	412-828-5586	X													
Legal Tax Service	Billing/Collections	412-464-2425	X													
Eastern Division																
Locis	Muni Code Billing										X					
Keystone Software	Muni Code Bill Print									X						
Billtrust	All Services	http://www.billtrust.com/index.php	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ACS	All Services	http://www.acs-inc.com/customer-service-outsourcing.aspx	X	X	X	X	X	X	X	X	X	X	X	X	X	X
BestBill	All Services	http://www.bestbill.com/billing-services.html	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Process	Description	Examples of Current Exceptions that will not be offered in SAP (this is not all inclusive and is to be used as an example for comparison of current contracts)
Services Billed	Municipal services (i.e. sewer, garbage, stormwater) can be added and billed to premises with company owned services. The revenue associated with municipal charges can be easily separated from company owned revenue.	
Mutual/Non Mutual Premises	Only premises associated with a company owned service (mutual) will be billed. Non-mutual premises, including accepting reads from a 3rd party water utility, are not part of the standard offering as this requires a system enhancement and AW will be left with needing to maintain premises and business partners who are not part of the AW system. Business partner, once set up cannot be deleted or removed.	AW currently receives meter readings from another water utility in some areas such as Chandler & Evansville, IN (bill for Town of Newburgh sewer), Seelyville, IN (bill for Terre Haute sewer), Bargersville, IN (bill for Greenwood sewer), Shillington, PA. There are also areas that bill non mutual customers at a flat rate or information provided by the city - some examples are Joplin, MO (sewer and trash), Richmond, IN (sewer)
Billing	Billing will occur on active American Water accounts, we will not be able to continue billing for municipal services when the AW owned water service is not active.	
Billing Schedule	Billing will be in accordance with AW meter read/bill dates and will include AW standard proration where applicable. (i.e. opening and closing bills are prorated)	
Account Set Up	AW Company owned and municipal charges will be billed to the same account holder	All charges applicable to a connection object/premise will be billed to the customer taking responsibility for the water. Example of exception - Joplin currently has separate trash only premises set up to bill the owner of the property, this will not be part of the standard offering in SAP.
Winter Averaging	One method of winter averaging will be configured, which mirrors that of regulated sewer services	Currently each city that observes winter averaging has their own set up in ECIS to calculate the average as well as when to bill the average. Will have one method of calculation as well as when the average is billed in SAP.
Payment Application	Payments allocation matrix will pay American Water receivables first including current charges. Once all AW balances are paid, municipal receivables will be paid starting with oldest first. Must be able to maintain integrity of municipality receivables ensuring they will be identifible based on main/sub, G/L, & document type	There are several different payment allocation matrices set up in ECIS based on the specific contracts. Examples of exception to the standard SAP offering are - IL (all contracts except E. StL, Centreville & Reading) partial payments are prorated across water & sewer based on amount owed then trash is paid any remaining dollars (if applicable), IN - partial payments are prorated across all utilities based on amount owed, MO - water is paid first then sewer & trash prorated if applicable, in some areas that have more than one sewer charge (Village of County Club) water is paid first, then St. Joe sewer, then Village sewer collection charge.
Late Fee Application	Late fees to be assessed on the same timeline as American Water. If a state does not assess late fees, sewer late fees will be assessed during the dunning process and applied to contracts at billing. Late fee assessment should be based on a percentage value calculated against most recent past due charge (not entire past due amount.) We will not be able to provide 'recurring' late charge calculations.	We currently provide recurring late fee assessment in IL (Sterling) and MO (St. Joseph & Jefferson City).
Installment Plans	Payment arrangements created will include municipal services (Except where not allowed by Commission, ex. PA)	
Bill Adjustments	American Water will make adjustments to the sewer billing charges in accordance with American Water's adjustment policies unless the adjusted consumption occurred during one of the billed winter average months. Additional adjustments for sewer approved by the City can be submitted to and processed by American Water Special Accounts Department.	
Disbursements	Recommendation is for one disbursement cycle (i.e. weekly/monthly) based on the amount collected, not the amount billed. The cost of providing the billing services will be deducted from the disbursement amount, not invoiced.	Current disbursements are done as follows - IN - daily, MO - monthly, IL - weekly, biweekly & monthly, IA - monthly. All are based on amount collected. IL, MO & IA - fees are withheld from disbursement, IN - fees are billed through MI.
Collections	Closed municipal accounts with balances will not be sent to Third Party Collections. The same applies for sending closed municipal accounts with balances to the First Party Agency prior to write off reversal.	Currently IL, IA, IN & MO balances are sent to the first party agency prior to write off reversal.
Collections	The unpaid municipal billing must be reversed and balance information returned to the municipality.	IL, IA & IN - balances are brought back from agency prior to reversal and are not sent to the third party agency. MO - balances are sent to third party agency for collection.
Online Account Manager	New Interfaces and File layouts will be developed for placement on existing OAM. File format will continue to be Excel or CSV.	

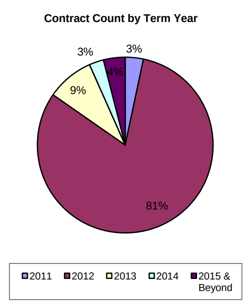
Issue / Question	Response
Are Arizona contracts in scope? There are three contracts that are operated by the non regulated business in the regulated ECIS system.	To be handled by AWE.
Are the CA contracts in scope? East Paloalto is operated by AWE in a separate non-regulated ECIS environment?	To be handled by AWE.
Are the NJ contracts in scope? Liberty is operated by AWE in a separate non-regulated ECIS environment. Avalon is also operated by AWE in a separate non-regulated ECIS environment.	To be handled by AWE.
Are the Michigan contracts is scope? These contracts are operated in a separate billing system, not ECIS?	No. Michigan contracts will remain at the discretion of Indiana/Michigan management team.
Some Service Company functions are currently preparing 2012 budgets. Should these functions anticipate some budget reductions as a result of exiting the billing arrangements?	2012 budgets should be submitted based on current billing contracts needs and support. Resource requirements will eventually need to be adjusted as contracts exit the business.
Issues common to all groups: • Maintaining these critical relationships with municipalities and various political entities • Planning to offset the revenue stream resulting from contract sewer billing	To be addressed by states teams.
Will there be an analysis of the cost to exit the billing contracts?	As it stands now, this is not part of our analysis but we should be able to track billing contract exit costs.
Term dates are estimations based on legalities and discussions that must occur prior to notification of termination can occur. Some concern regarding setting incorrect expectation.	Term dates for most municipalities are identified in the contracts. These should be the starting point for exiting target dates. In the event there is no designated termination or renewal dates in contracts but there are provisions governing termination where either party can terminate the agreement if specific provisions are satisfied (e.g. 6 month notification, regulatory approval, etc), then states should determine reasonable termination dates allowing for notifications and approvals.
Total customer count drives decisions regarding resources, timelines, costs and the ability to transition smoothly. Need to consider current set up in Ecis, as not all accounts have usage data sewer authority codes impacting count (data cleansing). Also need consistency across the business on how total customers are reported.	**Agreed**
Considerations for sewer shut offs: 1 master contract, 1 process, provisions for loss revenue and fee will vary by state municipalities	
Do we have the ability to exit a large numebr of contracts in the event many municipalities decide to exit early, assuming it is not prohited by the terms of the contract.	**Per Dave Derr and Kim Nye, IT could probably adjust if necessary if some months end up with a large number of unplanned contracts wanting to exit prior to their scheduled time.**
The "Term Calendar" currently has some open months in September, October and November of 2011.	**It would be beneficial overall if we could get some of the contracts to exit earlier and fill some the months of Sept., Oct. and Nov. 2011.**
There are a few municipalities in which AW bills more than one service. Some of those have separate agreements for each service with differing term dates. How will those be handled.	**The preference would be to have municipalities under that scenario exit all services at the same time.**
How will special authorization accounts (franchise agreements or free water for municipal accounts), e.g, Swansea, IL - usage is tracked until minimum volume is	

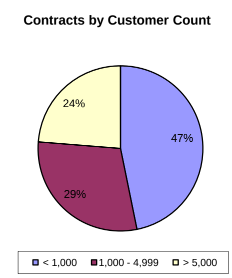
Year	# of Contracts Expiring	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2011	5												5
2012	122	11	11	7	6	7	9	14	12	12	11	13	9
2013	13	6	1	1	0	0	2	0	1	0	1	0	1
2014	4	1	0	0	0	0	0	0	0	0	2	0	1
2015 & Beyond	6	Various dates from 01/07/15 through 12/31/42											
	150												

# of customers	Number of Contracts	Percent
< 1,000	73	
1,000 - 4,999	46	
> 5,000	37	
	156	

Deliver

Year	# of Contracts Expiring
2011	3%
2012	81%
2013	9%
2014	3%
2015 & Beyond	4%





The remainder of this attachment is confidential and has been provided under seal pursuant to a Petition for Confidential Treatment.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Cheryl D. Norton

30. Explain how, given that Kentucky-American's decision to terminate billing services for Lexington-Fayette Urban County Government has increased Kentucky-American's revenue requirements and increased Lexington-Fayette Urban County Government's cost to bill for sewer and garbage services, the decision benefited Kentucky-American's customers.

Response:

As explained in Ms. Norton's Direct Testimony at pages 4-5, KAW's decision not to renew the contract it had with LFUCG to perform billing and collection services was not an easy one. The LFUCG has no system in place for billing and collecting for the governmental services it provides for sewer, landfill and stormwater. Thus, since 1995, KAW performed those billing and collection services and KAW treated the revenues received from performing those billing services in an "above the line" fashion. Customers benefitted from this because these third-party billing revenues decreased the need for water service revenues.

In this case, KAW's forecast does not include billing services revenues because KAW no longer received those revenues. However, the requested revenue requirement in this case is based on the reasonably and prudently incurred costs of operating a water utility and KAW should be allowed recovery of those costs irrespective of its decision not to renew the LFUCG billing services contract.

KAW has been able to minimize the effect of the loss of the billing services revenue in a number of ways. For example, KAW has been able to eliminate a full-time position associated with managing the contract, and was able to avoid additional Business Transformation software costs (please see response Item 78 of Commission Staff's Second Data Request). Ultimately, as the challenges and disadvantages of continuing to provide the billing services increased, KAW had to decide whether it should continue to bill for government-provided services or whether the benefits from terminating those services outweighed the benefits from continuing to provide them. KAW determined that termination of the services was the best choice.

The most significant benefits to the customers are the increased transparency of the bill and the ability of KAW to remain focused on its core business of providing high quality water service. Over the years, increases to LFUCG fees have exceeded rate increases by KAW and were diluting our customers' ability to understand the true cost and value of the water service provided. Continued investment needs for both water and wastewater systems would most likely perpetuate this confusion in the future, particularly when it has become clear that LFUCG will have to spend $500-600 million dollars in the next approximately eleven years to comply with the consent decree it has reached with the US EPA for wastewater system upgrades. Increases in individual fees not related to water usage such as stormwater fees could also result in misperceptions regarding the effectiveness of conservation. Given the fact of these looming and significant LFUCG fee increases, KAW believes it is critical that its customers understand what they are paying for water service and what they are paying for government-provided services. Termination of the billing services helps provide customers with a clearer sense of the true cost of KAW services.

The decision to terminate the billing services coincided with the expiration of the existing contract. Had KAW decided to renew the agreements, costs to continue the existing process would have increased as part of the contract renewal process to account for cost increases for labor, material, postage, etc. By terminating the agreements, several costs were avoided. Please refer to the responses to Item 76 and Item 78 of the Commission Staff's Second Data Request dated February 20, 2013. Impending changes to KAW processes as a result of Business Transformation would also have resulted in additional cost increases to customers related to system configuration, data cleansing, testing, implementation and on-going program and server maintenance. The advantages to the customers of eliminating the billing agreements were vital and the challenges of continuing the billing agreements were significant, therefore, the agreements were terminated.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Linda C. Bridwell

31. Refer to Kentucky-American's Response to Commission Staff's Second Request for Information, Item 77.

Response:

Per discussion with Commission Staff, a response to this Item is not required.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Scott W. Rungren

32. Refer to Kentucky-American's Response to the Commission Staff's Second Information Request, Item 98. The Commission has not historically recognized the preferred stock dividend in the calculation of interest-synchronization and the dividend was not included in Case No. 2010-00036.[10] Explain why Kentucky-American is proposing to included preferred stock dividend as a component of interest expense in the current proceeding.

Response:

The Company included Dividends on Preferred Stock with Mandatory Redemption because it is deductible for both federal and state income taxes and therefore included with the interest expense as a book deduction as part of the income tax calculation on Exhibit 37, Schedule E.

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[10] Case No. 2010-00036, *Application of Kentucky-American Water Company for an Adjustment of Rates Supported by a Fully Forecasted Test Year* (Ky. PSC filed Feb. 26, 2010).

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Keith Cartier

33. Provide the total amount of unaccounted-for water loss in gallons and as a percentage of total water produced and purchased for the Northern Division for 2011 and 2012.

Response:

The Northern Division unaccounted-for water loss volume in gallons and percentage of total water produced and purchased was 148,008,000 gallons and 38.7% for 2011 and 129,067,000 gallons and 38.5% for 2012.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Keith Cartier

34. State whether Kentucky-American has a written water loss prevention/leak detection plan for the Northern Division. If yes, provide this plan.

Response:

Kentucky American documented and updated its Water Loss Control Strategy in 2012 for its entire service area including the Northern Division that is attached.

Kentucky American Water Company

2012 Water Loss Control Strategy

Executive Summary

KAWC's 2012 Water Loss Control Strategy incorporates industry best practices from AWWA Water Audit and Loss Control Program manual. The strategy also includes recommendations from an analysis of non-revenue water conducted by Gannett Fleming Company in 2009. The two above resources combined provide a foundation for a comprehensive program that allows us to be proactive and effectively manage our water losses. The strategy also tries to balance having a cost effective program while minimizing water losses.

The program requires the tracking, reporting and analysis of all types of water losses such as unbilled authorized consumption, apparent losses and real losses. Regular activities to mitigate these losses include:

- Leak detection
- Repair of main and service leaks
- Pressure management
- Meter testing and replacement
- Main rehabilitation and replacement
- Completion of NRW Service Orders
- Billing of Third Party Damages
- Communicating with Municipalities, fire departments and other parties
- NRW tracking and reporting
  - Sub Meter Zones
  - Daily, weekly and monthly tracking of water losses
  - Monthly Kentucky PSC Water Loss report
  - AWWA Water Audit

No program can be effective unless all stakeholders are involved and there are actionable outcomes from their involvement. Our program engages a team of employees from all parts of the company including Operations, Production, Water Quality and Engineering. The team meets regularly to review all aspects of NRW and discuss the monthly results and actions for the following month(s). Recent outcomes from past meetings include items such:

- Lowered pressure at the Richmond Road Production Facility by 10 PSI
- To delay/postpone the annual system flushing (estimated NRW savings 16 million gallons)
- Used System modeling to develop standard operating procedures to reduce surges/water hammers
- Standardized testing procedures for system delivery meters

All of these current activities have contributed to the following 2012 results:

- No backlog of main leaks
- Backlog of only 15 pending box and service leaks
- Approximately 11,000 manual leak soundings
    - 17 leaks found
        - With a prevention of an estimated annual loss of 45.2 million gallons
- High NRW Service Order completion rate (93 -100%)

As we continue to look ways to improve our program we have started to look at NRW at the division level within the state. This perspective allows us to assess the different needs of both the Central and Northern divisions and allows us to develop activities for those specific plans for each. With that in mind we have identified the following strategy to address all three areas of water loss.

Unbilled Authorized Consumption

- Continued close monitoring of blow offs running for water quality purposes
- Review Cost of Study for Fire Services so usage can be included into sales volume.

Apparent Losses

- Locking 2" Meter Bypasses
- Make changes to CIS to include bulk water sales
- Pilot of replacing turbine meters with compound meters for low flow losses. Pilot accounts UK Commonwealth Stadium 2 – 6" and Keeneland 3 – 4"
- Investigate the feasibility of installing Protectus meters on identified special connections. Identified accounts are Kentucky Horse Park, Blue Grass Airport and LexMark. Note: this will address both apparent and real losses.

Real Losses

- Right of Way Sounding
- Creek Crossing Sounding
- Walking of River Lines
- Sounding of Downtown Lexington
- Sounding of one Region (1 of 5 regions)
- Special Connection Soundings
- Sounding of High Pressure Areas with Pep Services
- Set up 5 sub meter zones in Northern Division

- Assess the feasibility of reducing pressure in the following three areas: Glenco, Sparta and Monterey
- Main replacement on Shady Lane – Owen County
- Send communication to the owners of all properties served by special connections reminding them that all water usage must be metered except that used for the extinguishment of fires.
- Communicate to developers what constitutes theft and encourage them to be on the lookout for unauthorized usage in areas of new development
- Developed system modeling of pressures through out the service area.

Appendix

2012 Water Loss Actions

Action #	Action	Type of Loss	Start Date	100% Complete
1	**Right of Way Sounding** (60) Central Division	Real	04/27/12	7/30/12
2	**Creek Crossing Sounding** (43) Central Division	Real	04/27/12	07/30/12
3	**Walking of River Lines** Central Division	Real	04/24/12	6/11/12
4	**Sounding of Downtown** Lexington Central Division	Real	09/1/12	09/30/12
5	**Sounding of one Region (1 of 5 regions)** Central Division	Real	01/1/12	12/31/12
6	**Special Connection Soundings** (120) Central Division	Real	05/21/12	12/31/12
7	**Locking 2" Meter Bypasses** (496) Central Division	Apparent	5/14/12	6/15/12
8	**Sounding of High Pressure Areas with Pep Services** Central Division	Real	5/7/12	9/1/12
9	**Make changes to CIS to include bulk water sales** Northern Division	Apparent	4/1/12	5/31/12
10	**Set up 5 sub meter zones in Northern Division** Northern Division	Real	4/1/12	5/31/12
11	**Assess the feasibility of reducing pressure in the following three areas: Glenco, Sparta and Monterey** Northern Division	Real	6/1/12	8/1/12
12	**Main replacement on Shady Lane – Owen County** Northern Division	Real	TBD	12/31/12
13	**Pilot of replacing turbine meters with compound meters for low flow losses. Pilot accounts UK Commonwealth Stadium 2 – 6" and Keeneland 3 – 4"** Central Division	Apparent	5/1/12	6/15/12
14	**Investigate the feasibility of installing Protectus meters on identified special connections. Identified accounts are Kentucky Horse Park, Blue Grass Airport and LexMark.** Central Division	Real and Apparent	6/1/12	10/31/12
15	**Continued close monitoring of blowoffs running for water quality purposes** Central Division	Unbilled Authorized Consumption		Ongoing
16	**Send communication to the owners of all properties**	Real	7/1/12	10/31/12

	served by special connections reminding them that all water usage must be metered except that used for the extinguishment of fires. Central Division			
17	**Communicate to developers what constitutes theft and encourage them to be on the lookout for unauthorized usage in areas of new development** Central and Northern Division	Real	7/1/12	10/31/12
18	**Review Cost of Study for Fire Services so usage can be included into sales volume.** Central and Northern Division	Unbilled Authorized Consumption	6/1/12	9/1/12
19	**Develop more comprehensive system modeling of pressures through out the service area.** Central Division	Real		12/31/12

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Keith Cartier

35. State, if the Northern Division's unaccounted-for water loss exceeds 15 percent of total water produced and purchased for that Division, the cost of infrastructure replacement or rehabilitation necessary to reduce unaccounted-for water to 15 percent.

Response:

Any estimate of cost would be purely speculative as there are not known, identified issues that are not being addressed. Repairs are made as issues are identified. For context, the volume of water loss above 15% averaged 99,659,264 gallons for 2011-2012. The variable production related expense of producing that volume of water once the Northern Connection is completed is projected to be $40,362 (based upon unit production costs at KRS II of $405/MG). The nature of the Northern Division operation – largely rural water service with cross country mains that are primarily plastic pipe - creates unique challenges in regard to identifying leaks within the system. KAW practice has been to apply resources strategically to address NRW across all KAW service area. To date KAW has not applied a full time resource in Northern Division as a full time equivalent position is projected to be in the $65,000 to 75,000 range. As noted in the response to Item 34 of this same Request for Information, the NRW management plan for Northern Division includes establishing and monitoring 5 pressure zones to help focus NRW related activities. Identifying sub meter zones with higher NRW is expected to allow resources to be deployed more effectively in Northern Division by limiting the amount of area and mains to be evaluated for potential leaks.