Exhibit No.:
Issues: Rate of Return on Equity
Capital Structure
Witness: Pauline M. Ahern
Exhibit Type: Surrebuttal
Sponsoring Party: Missouri-American Water Company
Case No.: WR-2003-0500
and WC-2004-0168
Date: December 5, 2003

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. WR-2003-0500 and WC-2004-0168

SURREBUTTAL TESTIMONY

OF

PAULINE M. AHERN

ON BEHALF OF

MISSOURI-AMERICAN WATER COMPANY

JEFFERSON CITY, MISSOURI

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

IN THE MATTER OF MISSOURI-AMERICAN WATER COMPANY FOR AUTHORITY TO FILE TARIFFS REFLECTING INCREASED RATES FOR WATER SERVICE	)))))	**CASE NO. WR-2003-0500**

AFFIDAVIT OF PAULINE M. AHERN

Pauline M. Ahern, being first duly sworn, deposes and says that she is the witness who sponsors the accompanying surrebuttal testimony entitled "Surrebuttal Testimony of Insert Name"; that said surrebuttal testimony and schedule(s) were prepared by her and/or under her direction and supervision; that if inquires were made as to the facts in said surrebuttal testimony, she would respond as therein set forth; and that the aforesaid surrebuttal testimony and schedule(s) are true and correct to the best of her knowledge.

Pauline M. Ahern

State of New Jersey
County of Burlington
SUBSCRIBED and sworn to
before me this 2nd day of December 2003.

Notary Public

My commission expires:

SHARON M. KEEFE
NOTARY PUBLIC OF NEW JERSEY
MY COMMISSION EXPIRES JULY 9, 2006

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I. INTRODUCTION

Q. Please state your name, occupation and business address.

A. My name is Pauline M. Ahern and I am a Vice President of AUS Consultants – Utility Services. My business address is 155 Gaither Drive, P. O. Box 1050, Moorestown, New Jersey 08057.

Q. Are you the same Pauline M. Ahern who previously submitted prepared direct and rebuttal testimony in this proceeding?

A. Yes, I am.

Q. Have you prepared schedules which support your surrebuttal testimony?

A. Yes, I have. They have been marked for identification as Schedules PMA-23 through PMA- 25.

II. PURPOSE

Q. What is the purpose of this testimony?

A. The purpose of this testimony is to rebut certain aspects of the rebuttal testimonies of David Murray, Witness for the Missouri Public Service Commission Staff (Staff) concerning capital structure and common equity cost rate, Mark Burdette, Witness for the Office of the Public Counsel (OPC) concerning common equity cost rate, and Stephen D. Wurtzler, witness for the St. Joseph Water Rate Coalition concerning common equity cost rate. Specifically, I will address Mr. Murray's updated proposed capital structure and selected comments upon my direct testimony. I will also address selected comments of Mr. Burdette upon my direct testimony. Finally, I will address Mr. Wurtzler's recommended common equity cost rate.

III. REBUTTAL TESTIMONY OF OPC STAFF WITNESS DAVID MURRAY

Q. Is Mr. Murray's continued recommendation that the MoPSC adopt American Water Works Company's (American Water) updated consolidated capital structure ratios for ratemaking purposes to establish an allowed overall rate of return for Missouri-American Water Company (MAWC or the Company) appropriate?

A. No. It remains inappropriate that the MoPSC set rates for MAWC in this proceeding based upon American Water's consolidated capital structure ratios, even on an updated basis, for the same five reasons discussed at length in my rebuttal testimony on pages 2-13. Namely: 1) MAWC has an independently determined capital structure, 2) MAWC's stand-alone capital structure represents the actual capital financing of MAWC's jurisdictional rate base to which rates set in this proceeding will be applied; 3) MAWC's stand-alone capital structure is consistent with the capital structure ratios maintained, on average, by other water companies; 4) MAWC's stand-alone capital structure is consistent with Standard & Poor's (S&P) financial target ratios of total debt to total capital criteria; and 5) MAWC's stand-alone capital structure is consistent with the capital structures allowed by MoPSC precedent.

Q. Does the updated consolidated American Water capital structure now recommended by Mr. Murray reflect the financial risk of MAWC and the companies in his comparable group of four water companies?

A. No. As stated in my rebuttal testimony at page 20, lines 27 through page 21, line 2, the market data of Mr. Murray's comparable group of four water companies reflect investors' perception of the level of financial risk inherent in the capital structure of those water companies, which for the year 2002 contained an average common equity ratio of 45.95% as shown on Mr. Murray's Schedule 21. In contrast, Mr. Murray's updated recommended consolidated American Water common equity ratio is 35.28%, which is still

significantly lower than the average common equity ratio of his comparable group. And, yet again, his recommended capital structure continues to be significantly more financially risky than those of the companies upon which he based his common equity cost rate.

Q. Did Mr. Murray update his recommended common equity cost rate to reflect the greater financial risk inherent in his recommended updated consolidated American Water capital structure?

A. No. As discussed in my rebuttal testimony at page 21, line 20 through page 22, line 27, a study by Brigham, Gapenski and Aberwald[1] concluded that a 1 percentage point change in common equity cost ratio in the range of 40.0% to 50.0% results in an average 12 basis points change in common equity cost rate with the change approximately 15 basis points at the lower end, i.e., near 40.0%, and approximately 7 basis points at the higher end of the range, i.e., near 50.0%. Clearly, the lower the common equity ratio, the higher the common equity cost rate, all else equal. Once again, assuming that the relationship between common equity cost rate and common equity ratio is linear, a 1 percentage point change in common equity ratio near 30.0% would likely result in a 23 basis points change in common equity cost rate. Thus, an adjustment to Mr. Murray's recommended common equity cost rate range based upon the 1,067 basis points (10.67%) difference between the average common equity ratio of his comparable water companies, i.e., 45.95%, and his recommended 35.28% consolidated American Water common equity ratio can be derived as follows: 1.79% = [(45.95% - 40.00%) * 0.15%] + [(40.00% - 35.28%) * { (0.15% + 0.23%) / 2 }] = [5.95% * 0.15%] + [4.72% * 0.19%] = 0.89% + 0.90% = 1.79%

Adding this 1.79% financial risk adjustment to Mr. Murray's recommended range of common equity cost rate of 8.26% - 9.26% which is based upon the lower financial risk of his comparable water companies, results in a risk-adjusted common equity cost rate

range of 10.05% - 11.05%, with a midpoint of 10.55%, which would be properly applicable to a common equity ratio of 35.28%, and therefore more properly reflects the greater financial risk inherent in Mr. Murray's updated recommended consolidated American Water capital structure.

Correcting Mr. Murray's recommended cost rate of common equity range to reflect the greater financial risk inherent in his recommended consolidated American Water capital structure is summarized below:

Mr. Murray's recommended cost rate of common equity range:	8.26% - 9.26%
Adjustment to reflect the greater financial risk of a 35.28% common equity ratio:	1.79%
Mr. Murray's recommended cost rate of common equity range corrected to reflect the greater financial risk of a 31.85% common equity ratio:	10.05% - 11.05%

Q. On pages 5-8 of his rebuttal testimony, Mr. Murray again states his reasons for proposing that American Water's consolidated capital structure be used for ratemaking purposes in the current proceeding. Please comment.

A. Mr. Murray is incorrect when he states that "MAWC no longer issues all of its own debt" at line 19 on page 5. MAWC does issue its own debt. It issues debt either through the State of Missouri's EIERA program or to AWCC. Mr. Murray does not recognize that although MAWC no longer issues all of its own debt to outside funding sources, the vast majority of its total permanent capital outstanding, nearly 90% as indicated on page 3 of my rebuttal testimony, is not provided through loan agreements with American Water Capital Corporation (AWCC).

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[1] Eugene F. Brigham, Louis C. Gapenski, and Dana A. Aberwald, "Capital Structure, Cost of Capital, and Revenue Requirements":, Public Utilities Fortnightly, January 8, 1987, pp. 15-24.

Mr. Murray also seems to believe that AWCC issues debt and then merely dispenses the proceeds to American Water's subsidiaries. In reality, when MAWC needs to borrow debt capital, it makes a management decision as to whether to enter a loan agreement with AWCC or to seek funding through the State of Missouri's EIERA funding program depending upon which source of debt financing is lowest cost. Moreover, MAWC must then receive authorization from the MoPSC for funding from either AWCC or through the EIERA program. If MAWC does borrow from AWCC, it enters a loan agreement which obligates it to service that debt. Hence, AWCC is no different than any other possible funding source for MAWC. MAWC, in turn, is as obligated to AWCC as it would be to any other funding source. The existence of AWCC merely allows MAWC to borrow at a possibly lower cost than through private placement or possibly through the EIERA program. This was clearly stated in MAWC's Application in Case No. WF-2002-1096 cited by Mr. Murray on pages 6 and 7 of his rebuttal testimony. As Mr. Murray notes in lines 16-24 on page 7, Paragraph 14 of the Application states:

> However, borrowers can derive the benefits of the public market only if the amounts they borrow are large enough, and their credit rating high enough, to meet that market's significant entry level requirements. Standing alone, Applicant [MAWC] does not have the borrowing requirements large enough to finance in the public markets. However, by financing through AWCC, Applicant and its sister companies in other states have sufficient borrowing power to finance in the public market and thereby obtain the advantageous terms available therein. (emphasis added)

In view of the foregoing, MAWC should not be penalized, through the imposition of American Water's consolidated capital structure for ratemaking purposes, because a minor portion of its debt financing is obtained through an affiliate in order to obtain a lower debt cost rate which reduces the cost of capital.

Q. Mr. Murray states on page 8 at lines 25-27, that "AWCC is more or less acting like the treasury for American Water, the inflows and outflows of funds at AWCC become commingled with those funds that are being used for all sorts of purposes at America Water and its subsidiaries." Please comment on the relevance of this statement to

determining an appropriate ratemaking capital structure for MAWC in the current proceeding.

A. That AWCC acts "more or less" like the treasury for American Water is of no relevance to the current proceeding as MAWC's capital structure consists of nearly 90% of capital from sources other than AWCC as stated above and discussed in my rebuttal testimony at page 3, lines 2-14. Moreover, MAWC received none of the $450 million cited by Mr. Murray on lines 29-30 of page 8 of his rebuttal testimony as being used for equity infusions into American Water's subsidiaries. The totality of the $1.2 billion debt issuance of November 6, 2001, of which the referenced $450 million was a part, was secondarily issued to American Water and subsidiaries other than MAWC, primarily to finance the November 7, 2001 acquisition of Azurix and the January 15, 2002 acquisition of Citizens water and wastewater assets. MAWC received none of the proceeds from this issuance. What equity capital MAWC did receive from American Water came from issuing new shares of common stock to American Water in March 2000 and April 2002.

Q. On page 9, at lines 2-4 of his rebuttal testimony, Mr. Murray implies that American Water is manipulating the capital structures of it operating water subsidiaries, such as MAWC. Please comment.

A. Mr. Murray's exact words are:

> By carrying some of this debt at the parent company level rather than at the subsidiaries, American Water is able to produce subsidiary capital structures that are more heavily weighted in equity, which would not be the case otherwise.

Mr. Murray has provided no evidence that American Water has indeed manipulated the capital structure of MAWC. In fact, in view of all of the foregoing, there is no evidence that debt at the American Water parent level is artificially inflating MAWC's common equity ratio. Mr. Murray also says that if the subsidiaries had truly independent capital

structures, then the debt incurred for this acquisition would have been carried at the subsidiary level. This defies common sense, logic and basic financial precepts. It is not sound financial management for a non-related affiliate, MAWC, to bear the debt burden for the acquisition of entities unrelated to MAWC's provision of water service to customers within its service territory. In other words, MAWC's capital structure should not reflect any capital which is not financing its jurisdictional rate base. To suggest otherwise is clearly illogical and contrary to both rate base / rate of return regulation and basic financial precepts.

In addition, Mr. Murray has provided no evidence that MAWC's stand-alone capital structure contains a heavily weighted common equity ratio. To the contrary, it is clearly demonstrated in my rebuttal testimony that MAWC's proposed common equity ratio of 43.099% is consistent with both the average common equity ratio maintained by my proxy group of water companies and with S&P financial target benchmark ratios for a utility whose bonds are rated in the A bond rating category and is assigned a business position of "2" or "3". (see page 6, line 12 through page 8, line 12) Moreover, MAWC's proposed common equity ratio of 43.099% is lower than the average common equity ratio of Mr. Murray's group of comparable water companies, 45.95% (see Mr. Murray's Schedule 21). Clearly, then, MAWC's capital structure is not heavily weighted in common equity.

Q. On page 11, lines 8-15 of his rebuttal testimony, Mr. Murray once again cites the support agreement between AWCC and American Water as evidence that using American Water's consolidated capital structure is appropriate for ratemaking purposes for MAWC. Please comment.

A. Notwithstanding the agreement and the statement in American Water's 2002 Annual Report that the securities of AWCC are "fully and unconditionally guaranteed" by American Water, if AWCC is in danger of defaulting on its debt obligations and American

Water assumes responsibility to service that debt, MAWC is still obligated to AWCC to honor its loan agreements with AWCC. MAWC's debt is and would remain an MAWC obligation. As discussed in my rebuttal testimony on page 3, line 23 through page 4, line 20, MAWC's long-term debt, including that received from AWCC is secured by its own assets. And, the support agreement between American Water and AWCC is silent regarding the debt obligations of its operating water subsidiaries, including MAWC. In fact, Mr. Hartnett was clear in the September 20, 2003 interview, cited extensively by Mr. Murray in his rebuttal testimony, that while American Water, under the support agreement:

> "would have to provide any necessary funds to meet any shortfalls. . . it would not preclude certainly continuing to pursue Missouri American to meet its obligations. Missouri American is the primary obligor to Capital Corp. They have signed a note whenever they make a borrowing."

In contrast to the statement in American Water's 2002 Annual Report, S&P indicated in its August 1, 2003 Research Report on American Water, which was attached to my rebuttal testimony as Schedule PMA-13, that:

> "There is a support agreement between American Water Works and AWCC, which links the two entities, but American Water Works does not guarantee debt issued by AWCC." (emphasis added)

Notwithstanding American Water's characterization of the support agreement as a guarantee, it is clear from the above citation from S&P's August 1, 2003 Research Report that bond rating agencies do not consider the support agreement a full and complete guarantee. As stated in my rebuttal testimony on page 4, lines 17-20, bond rating agencies, such as S&P, are investor influencing and their opinion regarding the non-existence of a guarantee of AWCC's debt by American Water are likely to affect investors' perceptions of the true nature of the support agreement between American Water and AWCC.

Q. On page 22, lines 6-8 of his rebuttal testimony, Mr. Murray contends that it is your testimony that "the DCF model result should not be relied upon as heavily because it results in downward-biased estimates of the cost of common equity." Please comment.

A. That is not my testimony. In actuality, in can be gleaned from Schedule PMA-1, that I relied more heavily upon the DCF model results than upon the results of the other cost of common equity models I utilized. The arithmetic mean of the results of all four models is 12.1%. Since, even the upper end of my range of recommended common equity cost rate of 11.75% - 12.00% is below 12.1%, I clearly relied upon the DCF model results more heavily, in a purely mathematical sense, than upon the results of the other cost of common equity models.

My testimony regarding the tendency of the DCF to understate investors' required rate of return on common equity in a market environment characterized by market-to-book ratios in excess of one speaks to exclusive reliance upon the DCF which is inconsistent with the Efficient Market Hypothesis (EMH) upon which the DCF model is predicated. Nor do I recommend that any adjustment be made to the DCF results in order to maintain market-to-book ratios above one.

Q. Throughout Mr. Murray's rebuttal testimony, specifically pages 22 through 31, Mr. Murray presumes a direct one-to-one relationship between market-to-book ratios and the earnings rate on book common equity. Please comment.

A. Mr. Murray specifically states at page 23, lines 6-8 of his rebuttal testimony that "if the market-to-book ratio is above one, then this means that a company is earning more than its cost of capital." The landmark U.S. Supreme Court *Hope* and *Bluefield* decisions, which will be discussed subsequently, state that investors are entitled to the opportunity to earn returns comparable to those expected in non-price regulated industries for assuming the same level of risk. Schedule PMA-23 demonstrates that there is no

evidence of a direct relationship between market-to-book ratios and the rates of earnings on book common equity. Schedule PMA-23 shows market-to-book and earnings / book ratios for the S&P Industrial Index for all the years for which they were available, 1947-2000. Also shown on Schedule PMA-23 are the same ratios for the S&P 500 Composite Index and the S&P Utilities Index for the years 1995-2002, all of the years for which those indices were available on a consistent basis.

The S&P Industrial Index had a market-to-book ratio of 1.00 in only one year, 1949, when the earnings / book ratio was 16.3%. In contrast, during 1961, the average market-to-book ratio of the Industrials was 2.01 and the earnings / book ratio was only 9.8%. On average during the period, 1949-2000, the S&P Industrials sold at 2.34 times their book value while earning an average of 14.9% on book common equity.

Likewise, the S&P Composite Index for the period 1995-2002 sold at substantial premiums in each and every year, averaging 3.68 times, while earning an average of 13.9% on book common equity. Note that in 2001, the average S&P Composite market-to-book ratio was 3.54 times while the earnings / book ratio averaged only 5.7%.

Similarly, the S&P Utilities Index sold above book value in each year during 1995-2002, averaging 1.76 times during the period while earning an average of only 9.5% on book common equity during the same period. Note that in 2002, the average S&P Utilities Index market-to-book ratio was 1.51 times and its earnings / book ratio averaged only 2.4%.

It is clear, then, that competitive, non-price regulated companies' common stocks have never sold below book value in more than half a century and at precisely book value only once, in 1949. In addition, a comparison of the S&P 500 Composite Index and the S&P Utilities Index shows no direct corollary between earnings / book ratios and market-to-book ratios. These data indicate that it is not realistic to attest that utilities would be earning a return over and above that required by the investor if their market-to-book ratios are greater than one, if regulation is a substitute for the competition of the marketplace.

Moreover, investors, consistent with the EMH, are aware of the statements of authors such as Bonbright who states: "market prices are beyond the control of rate regulation" (see page 20, lines 3-13 of my direct testimony) and Phillips, who states:

> Many question the assumption that market price should equal book value, believing that 'the earnings of utilities should be sufficient to achieve market-to-book ratios which are consistent with those prevailing for stocks of unregulated companies.' (see page 19, lines 22-26 of my direct testimony) (emphasis added)

In view of the foregoing, Mr. Murray's assertions of the relationship between market-to-book ratios and rates of return on book common equity, are erroneous and lead to false conclusions.

Q. On page 24, lines 21-24 of his rebuttal testimony, Mr. Murray states that it is your position that "the DCF model's growth rate should be adjusted upward because investors may expect the long-range market appreciation of a stock to be higher than the 'short range' forecasts of growth in accounting proxies." Please comment.

A. That is not my position. What I stated on page 20, lines 15-20 of my direct testimony was the following:

> In view of the foregoing, a mismatch results in the application of the DCF model as market prices reflect long range expectation of growth in market prices (consistent with the presumed infinite investment horizon of the standard DCF model), while the short range forecasts of growth in accounting proxies, i.e., EPS and DPS, do not reflect the full measure of growth (market price appreciation) expected in per share market value.

Nowhere in this citation do I suggest that the DCF model's growth rate be adjusted, nor do I adjust my growth rate recommendation. These comments relate to one source of the understatement / overstatement of investors' required return by the DCF model when market-to-book ratios are above / below one. Thus, multiple cost of common equity models should be relied upon when estimating investors' expectations.

Q. On page 25, lines 1-11 of his rebuttal testimony, Mr. Murray states that your reliance upon the referenced Wall Street Article to "discredit the DCF model is tenuous at best" because of the date of the article, March 30, 1999. Please comment.

A. First, I did not rely upon the article to "discredit" the DCF. It should be clear from my direct testimony, as well as previous discussed in this surrebuttal testimony, that I relied more heavily upon the DCF model results in reaching my recommended range of common equity cost rate of 11.75% - 12.00%. My reference to the article highlighted the fact that market prices are influenced by many factors in addition to earnings on book common equity. Mr. Murray felt it was "important to emphasize the date of the article since it occurred during the stock market boom of the late 1990's and early 2000." It should be noted that the Dow Jones Industrial Average closed at 9,913.30 on March 30, 1999 and at a very similar level, 9,899.05 on December 1, 2003. Clearly, the market has rebounded from the lows immediately post-September 11, 2001 and has climbed to similar levels as during the "boom of the late 1990's and early 2000."

Q. On page 27, lines 1-3 of his rebuttal testimony, Mr. Murray claims that you "discount" expected earnings growth when "attempting to discredit the results using the DCF model." Please comment.

A. Again, Mr. Murray has misrepresented my position. Earnings growth is essential to the health of any company, regulated and non-regulated alike. However, earnings growth is not the sole driver of market prices or the sole reason that market-to-book ratios greatly exceed one in the current market environment. Therefore, the DCF has a tendency to underestimate investors' required return when market-to-book ratios exceed one. Hence, it is necessary to utilize multiple cost of common equity models when estimating investors' required return rate on common equity, consistent with the EMH upon which the DCF is predicated.

Q. On pages 27 and 28 of his rebuttal testimony, Mr. Murray provides two citations from Roger A. Morin's Regulatory Finance: Utilities' Cost of Capital. Please comment.

A. Mr. Murray claims that these two citations are in conflict with one another. This is not true. Mr. Murray has misinterpreted the first citation to mean that Dr. Morin is stating that "the DCF model will result in an understatement of the cost of common equity to the company when market-to-book ratios are below one." However, Dr. Morin makes this observation only when the market-to-book ratio which is below one is expected to converge toward unity, i.e., to rise, because "[t]he expected increase in market-to-book ratio would result in the rate of price appreciation that exceeds the growth in earnings, contrary to the standard DCF model's assumptions that [a] firm's earnings per share grow at a constant rate forever and / or that the firm's price-to-earnings ratio is constant." In the second citation Dr. Morin discusses the capital market environment of the 1990s when utility stocks were trading at market-to-book ratios well above unity as they still are in the current market. In other words, in a market environment where market-to-book ratios are relatively stable and not moving up or down in a drastic fashion. Note that Dr. Morin is saying the same thing as I have in my direct testimony at page 21, lines 1-7,

> "when market values differ significantly from book values, a market-based DCF cost rate applied to the book value of common equity will not accurately reflect investor' expected common equity cost rate. It will either overstate or understate investors' expected common equity cost rate (without regard to any adjustment for flotation costs which may, at times, be appropriate on an ad hoc basis) depending upon whether market value is less than or greater than book value."

In Dr. Morin's words:

> As shown below, application of the standard DCF model to utility stocks understates the investor's expected return when the market-to-book ratio of a given stock exceed unity. . . The converse is also true, that is, the DCF model overstates the investor's return when the stock's M/B ratio is less than unity. The reason for the distortion is that the DCF market return is applied to a book value rate base by the regulator, that is, a utility's earnings are limited to earnings on a book value rate base.

Clearly, then, there is no confusion except in the selective interpretation of Dr. Morin's statements.

Q. On page 31, lines 1-2 of his rebuttal testimony, Mr. Murray states that he "disagree[s] that this renders the results using the DCF model less credible." Please comment.

A. Nowhere in either my direct or rebuttal testimonies did I claim that the DCF results were not credible or were less credible than the results of any other cost of common equity model. In fact, as discussed previously, it is clear that I relied more heavily upon the results of my application of the DCF. The point is that all cost of common equity models contain unrealistic assumptions and have shortcomings. Therefore, I recommend that no one cost of common equity model be relied upon exclusively. As stated in my direct testimony at page 25, lines 4 – 9:

> I have focused on the shortcomings of the DCF model because some regulatory commissions still place excessive or exclusive reliance upon it. Although the DCF model is useful, it is not a superior methodology that supplants financial theory and market evidence based upon other valid cost of common equity models. For these reasons, no model, including the DCF should be relied upon exclusively.

Q. On page 34, lines 16-18 of his rebuttal testimony, Mr. Murray states that "[t]he use of the CEM [Comparable Earnings Model] is an analysis of past actual returns and future expected returns on common equity. It has nothing to do with the cost of common equity to the company." Please comment.

A. Nothing could be further from the truth. Moreover, such a statement is inconsistent with his prior testimony on page 29, line 21 through page 30, line 11 regarding the historical returns on book common equity for my proxy group companies relative to their market-to-book ratios. It is also inconsistent with his presumption of a direct relationship between market-to-book ratios and earnings / book ratios. In addition, it is inconsistent with the

"corresponding risk" standard of the landmark U.S. Supreme Court cases, i.e., *Hope* and *Bluefield*. *Hope* states[2]:

> 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.

The CEM is also based upon the fundamental economic concept of the opportunity cost of capital which maintains that the true cost of an investment is equal to the cost of the best available alternative use of the funds to be invested. This principle is also consistent with one of the fundamental principles upon which regulation rests: that regulation is intended to act as a surrogate for competition and to provide a fair rate of return to investors. The CEM is designed to measure the returns expected to be earned on the book common equity or similar risk enterprises. Moreover, since the selection criteria utilized in my application of the CEM are market based, i.e., unadjusted beta and standard error of the regression, the CEM results have everything to do with the cost of common equity, as the return on common equity authorized in the current proceeding will be applied to the common equity financed portion of book value rate base and become the authorized earnings rate on book common equity.

Q. On page 36, lines 2-3 of his rebuttal testimony, Mr. Murray claims that you may have made a mistake in calculating the 12-month market appreciation potential Please comment.

A. In checking my workpapers, I discovered that I did, indeed, make a mistake. Schedule PMA-24, shows that I used the wrong median appreciation potential for January 31, 2003, i.e., 75%, instead of the correct 80% shown in Workpapers No. 17. The corrected averages are shown in columns 2, 4 and 7 of Schedule PMA-24. The only average which is affected by this correction is the 6-month average show in Line No. 15. Note

[2] *FPC v. Hope Natural Gas Co.*, 320 U.S. 591 (1944).

that in Line No. 18, none of the averages change because of the correction to the January 31, 2003 appreciation potential. So while it does appear that I made a mistake, Mr. Murray's conclusion is incorrect and the forecasted 3-5 year total annual market return of 18.6% is correct.

IV. REBUTTAL TESTIMONY OF OPC WITNESS MARK BURDETTE

Q. On page 5, line 24 through page 6, line 2 of his rebuttal testimony, Mr. Burdette contends that it is your testimony that the MoPSC should authorize an ROE the supports market-to-book ratios. Please comment.

A. That is not my testimony at all. The Commission should authorize a return for MAWC which is consistent with the fair rate of return standards first enunciated in the *Hope* and *Bluefield* landmark U.S. Supreme Court decisions. In 1923, *Bluefield* stated[3]:

> 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.

In 1944, *Hope* endorsed the *Bluefield* standard and extended it one step further, establishing the "end result" standard when it stated[4]:

> 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.

Q. Mr. Burdette states at page 6, lines 5-6 of his rebuttal testimony that when a regulated utility trades at a market-to-book ratio greater than 1.0, it means that the utility is earning a return over and above that required by the investor. Please comment.

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3 *Bluefield Water Works and Improvement Co. v. West Virginia Public Service Commission*, 262 U.S. 679 (1923).

4 *FPC v. Hope Natural Gas Co.*, 320 U.S. 591 (1944).

A. The landmark U.S. Supreme Court decisions cited above state that investors are entitled to the opportunity to earn returns comparable to those expected in non-price regulated industries for assuming the same level of risk. As discussed previously, Schedule PMA-23 demonstrates that there is no evidence of a direct relationship between market-to-book ratios and the rates of earnings on book common equity. It is clear from Schedule PMA-23 that competitive, non-price regulated companies' common stocks have never sold below book value in more than half a century and at precisely book value only once, in 1949. In addition, a comparison of the S&P 500 Composite Index and the S&P Utilities Index shows no direct corollary between earnings / book ratios and market-to-book ratios. The data on Schedule PMA-23 indicate that it is not realistic to attest that utilities would be earning a return over and above that required by the investor if their market-to-book ratios are greater than one, if regulation is a substitute for the competition of the marketplace.

Moreover, as also discussed previously, consistent with the EMH, investors are aware of the statements of authors such as Bonbright who states: "market prices are beyond the control of rate regulation" (see page 20, lines 3-13 of my direct testimony) and Phillips, who states:

> Many question the assumption that market price should equal book value, believing that 'the earnings of utilities should be sufficient to achieve market-to-book ratios which are consistent with those prevailing for stocks of unregulated companies.' (see page 19, lines 22-26 of my direct testimony) (emphasis added)

Q. On page 12, line 16 of his rebuttal testimony, Mr. Burdette, reiterates his position that the existence of the ISRS reduces MAWC's business risk. Please comment.

A. To repeat my rebuttal testimony, although the existence of the ISRS is risk reducing in the absolute, it is does not significantly reduce MAWC's risk vis-à-vis the risk of the water companies in any of the proxy groups utilized by the rate of return witnesses in the current proceeding. It is the relative risk of MAWC vis-à-vis the proxy water companies

which is the relevant risk and not an absolute reduction in MAWC's business risk. A significant number of these water companies either have such a surcharge in place or have one available, if requested. And, the largest company in any of the proxy groups relied upon in this proceeding, Philadelphia Suburban Corp., has such a surcharge in place for three of its five largest operating water subsidiaries. Clearly, investors are aware of the existence of surcharges and the possibility that where they are currently in place any water company can request such a surcharge and where they are not currently in place, they may be put in place as the various regulatory commissions around the U. S. realize the benefits of such surcharges. Consistent with the Efficient Market Hypothesis, as previously discussed, the market has already taken into account the existence or the possibility of existence in the near future of such surcharges and any risk reduction due to such surcharges is already reflected in the prices investors are willing to pay for the common stock of water utilities. Therefore, the risk of MAWC is not reduced vis-à-vis the average risk of the water companies utilized by all the rate of return witnesses in the current proceeding, all else equal, i.e., giving consideration only to the impact on risk of the existence of the ISRS. Hence, it is not necessary to either reduce a cost of common equity determination for MAWC nor to "consider a return on equity in the lower portion of any range under consideration" as recommended by Mr. Burdette especially in light of the fact that Mr. Burdette's recommended common equity ratio for MAWC is lower than that of publicly traded water companies (see page 5 of his direct testimony) indicating that MAWC has greater financial risk than publicly traded water companies.

V. REBUTTAL TESTIMONY OF
ST. JOSEPH WATER RATE COALITION WITNESS STEPHEN D. WURTZLER

Q. Mr. Wurtzler uses a 5.9% average historical and projected growth rate in his application of the DCF model on page 3, line 20 through page 4, line 8 of his rebuttal testimony. Please comment.

A. The 5.9% average historical and projected growth rate is apparently based upon the average of all growth rates from Schedule PMA-8, page 1. However, it is not my recommendation that the 5.9% be used in isolation. In my opinion, greater weight should be given to forecasts of projected EPS growth which is why my DCF result is based upon the average of the DCF indicated common equity cost rate using historical and projected growth rates of 5.8% and the DCF indicated common equity cost rate using projected growth in EPS of 7.3%. Averaging these growth rates, i.e., 5.8% and 7.3%, results in an average growth rate of 6.6% which in my opinion represents a more appropriate growth rate for use in the DCF model. When added to the range of dividend yields of 3.40% and 3.54% (see page 3, line 22 of Mr. Wurtzler's rebuttal testimony), a growth rate of 6.6% results in DCF indicated common equity cost rates ranging from 10.00% - 10.14%. (10.00% = 3.40% + 6.60% and 10.14% = 3.54% + 6.60%)

Q. Do you have any comment on Mr. Wurtzler's application of the CAPM model?

A. Yes. Mr. Wurtzler utilizes a nearly one year-old 4.8% risk free rate, which was the then current (December 2002) estimate of the Long-term (20 year) U.S. Treasury Coupon Bond Yield. Hence, his risk free rate is outdated. Both ratemaking and the cost of capital are prospective. Therefore, it is more appropriate to utilize a forecasted bond yield, such as the consensus forecast of approximately 50 economists published in Blue Chip Financial Forecasts. As can be gleaned from the November 1, 2003 Blue Chip Financial Forecasts (Schedule PMA-25) the average consensus forecast of long-term Treasury bonds for the six calendar quarters ending with the first quarter 2005 is 5.6% which when added to Mr. Wurtzler's beta adjusted equity risk premium of 4.41% results in a CAPM indicated common equity cost rate of 10.01%.

Q. Do you have any comment regarding Mr. Wurtzler's application of the Risk Premium Model?

A. Yes. Mr. Wurtzler added a beta adjusted market equity risk premium to the unsourced expected yield on Aaa bonds of 6.30% to arrive at a 9.89% return on common equity he deems appropriate for a water utility such as MAWC. However, because there are no Aaa rated public utility bond indices, I assume that the 6.30% expected yield relates to Moody's Aaa corporate bonds. Hence, the 9.89% common equity cost rate does not fully reflect the risk of utility bonds. To properly reflect the credit risk of utility bonds, it is necessary to adjust the yield on Aaa corporate bonds upward to reflect the difference in yield between Aaa corporate bonds and A2 rated (the average bond rating of water companies – see Schedule PMA-9, page 2) public utility bonds. The current spread between Moody's Aaa corporate bond yields and Moody's A rated public utility bond yields is 0.73%, which is the difference between the October 2003 average Moody's Aaa rated corporate bond yield of 5.70% and average Moody's A rated public utility bond yield of 6.43%. Thus, 0.73% = 6.43% - 5.70%. Adding this yield spread to Mr. Wurtzler's Aaa bond yield of 6.30% results in a risk premium common equity cost rate of 10.62% (10.62% = 6.30% + 0.73 + 3.59%).

In view of all the foregoing, a more appropriate DCF indicated common equity cost rate range of 10.00% - 10.14%, a more appropriate CAPM indicated common equity cost rate of 10.01% and a Risk Premium indicated common equity cost rate of 10.62% which reflects the added credit risk of public utilities, do not support his recommended range of common equity cost rate for MAWC of 9.25% - 9.75%. Rather, these results support a range of 10.00% - 10.62%.

Q. Does that conclude your surrebuttal testimony?

A. Yes.

Exhibit No.:
Issues: Rate of Return on Equity
Capital Structure
Witness: Pauline M. Ahern
Exhibit Type: Surrebuttal
Sponsoring Party: Missouri-American Water Company
Case No.: WR-2003-0500
and WC-2004-0168
Date: December 5, 2003

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. WR-2003-0500 and WC-2004-0168

SCHEDULES TO ACCOMPANY THE SURREBUTTAL TESTIMONY OF PAULINE M. AHERN ON BEHALF OF MISSOURI-AMERICAN WATER COMPANY

JEFFERSON CITY, MISSOURI

Missouri-American Water Company
Market-to-Book Ratios, Earnings / Book Ratios and
Inflation for Standard & Poor's Industrial Index and
the Standard & Poor's 500 Composite Index
from 1947 through 2002

Year	Market-to-Book Ratio (1)			Earnings/ Book Ratio (2)		
	S&P Industrial Index (3)	S&P 500 Composite Index (3)	S&P Utilities Index (3)	S&P Industrial Index (3)	S&P 500 Composite Index (3)	S&P Utilities Index (3)
1947	1 23 %	NA	NA	13 0 %	NA	NA
1948	1 13	NA	NA	17 3	NA	NA
1949	1 00	NA	NA	16.3	NA	NA
1950	1 16	NA	NA	18.3	NA	NA
1951	1 27	NA	NA	14.4	NA	NA
1952	1 29	NA	NA	12.7	NA	NA
1953	1 21	NA	NA	12 7	NA	NA
1954	1 45	NA	NA	13.5	NA	NA
1955	1 81	NA	NA	16.0	NA	NA
1956	1 92	NA	NA	13.7	NA	NA
1957	1 71	NA	NA	12.5	NA	NA
1958	1 70	NA	NA	9.8	NA	NA
1959	1 94	NA	NA	11 2	NA	NA
1960	1 82	NA	NA	10.3	NA	NA
1961	2.01	NA	NA	9 8	NA	NA
1962	1 83	NA	NA	10.9	NA	NA
1963	1 94	NA	NA	11 4	NA	NA
1964	2 18	NA	NA	12.3	NA	NA
1965	2.21	NA	NA	13.2	NA	NA
1966	2 00	NA	NA	13.2	NA	NA
1967	2.05	NA	NA	12.1	NA	NA
1968	2 17	NA	NA	12.6	NA	NA
1969	2 10	NA	NA	12.1	NA	NA
1970	1 71	NA	NA	10.4	NA	NA
1971	1 99	NA	NA	11 2	NA	NA
1972	2 16	NA	NA	12.0	NA	NA
1973	1 96	NA	NA	14 6	NA	NA
1974	1 39	NA	NA	14 8	NA	NA
1975	1 34	NA	NA	12.3	NA	NA
1976	1 51	NA	NA	14.5	NA	NA
1977	1 38	NA	NA	14 6	NA	NA
1978	1 25	NA	NA	15 3	NA	NA
1979	1 23	NA	NA	17 2	NA	NA
1980	1 31	NA	NA	15.6	NA	NA
1981	1 24	NA	NA	14 9	NA	NA
1982	1 17	NA	NA	11 3	NA	NA
1983	1 45	NA	NA	12.2	NA	NA
1984	1 46	NA	NA	14 6	NA	NA
1985	1 67	NA	NA	12 2	NA	NA
1986	2.02	NA	NA	11 5	NA	NA
1987	2.50	NA	NA	15.7	NA	NA
1988	2.13	NA	NA	19 0	NA	NA
1989	2.56	NA	NA	18 5	NA	NA
1990	2.63	NA	NA	16 3	NA	NA
1991	2.77	NA	NA	10 8	NA	NA
1992	3.29	NA	NA	13 0	NA	NA
1993	3.72	NA	NA	15.7	NA	NA
1994	3.73	NA	NA	23 0	NA	NA
1995	4.06	2 66	1 47	22.9	16 1 %	11 1 %
1996	4.79	3 02	1 54	24.8	16 9	11 5
1997	5.88	3 54	1 60	24 6	16 4	9 5
1998	7 13	4 22	1 89	21 3	14 8	9 8
1999	8.27	4 86	1 85	25 2	17 1	11 5
2000	7 51	4 61	2 15	23.9	15 6	7 7
2001	NA	3 54	2 10	NA	5 7	12 7
2002	NA	2.97	1.51	NA	8.7	2.4
Average	2.34	3.68	1.76	14.9 %	13.9 %	9.5 %

Notes: (1) Market-to-Book Ratio equals average of the high and low market price for the year divided by the average book value

(2) Earnings/Book equals earnings per share for the year divided by the average book value.

(3) On January 2. 2001 Standard & Poor's released Global Industry Classification Standard (GICS) price indexes for all Standard & Poor's U S. indexes As a result. all S&P Indexes have been calculated with a common base of 100 at a start date of December 31. 1994 Also. the GICS industrial sector is not comparable to the former S&P Industrial Index and data for the former S&P Industrial Index has been discontinued

Source of Information: Standard & Poor's Security Price Index Record, 2000 Edition. p. 40
Standard & Poor's Statistical Service. Current Statistics, August 2001, p 29
Standard & Poor's Statistical Service. Current Statistics. January 2001. p. 36
Standard & Poor's Compustat Services, Inc PC Plus Research Insight Data Base

Missouri-American Water Company
Corrected Value Line Forecasted Total Market Return

Line No.	Date of Value Line Summary & Index	1 Original Est. Median Appreciation Potential 3-5 Yrs. Hence	2 Corrected Est. Median Appreciation Potential 3-5 Yrs. Hence	3 Original Est. Median Annual Appreciation Potential	4 Corrected Est. Median Annual Appreciation Potential	5 Est. Median Dividend Yield	6 Original Est. Median Annual Total Return	7 Corrected Est. Median Annual Total Return
1.	09-May-03	80%	80%	15.83%	15.83%	2.10%	17.93%	17.93%
2.	25-Apr-03	85%	85%	16.63%	16.63%	2.20%	18.83%	18.83%
3.	28-Mar-03	95%	95%	18.17%	18.17%	2.30%	20.47%	20.47%
4.	28-Feb-03	90%	90%	17.41%	17.41%	2.30%	19.71%	19.71%
5.	31-Jan-03	**75%**	**80%**	**15.02%**	**15.83%**	2.10%	**17.12%**	**17.93%**
6.	27-Dec-02	80%	80%	15.83%	15.83%	2.10%	17.93%	17.93%
7.	29-Nov-02	80%	80%	15.83%	15.83%	2.10%	17.93%	17.93%
8.	25-Oct-02	95%	95%	18.17%	18.17%	2.20%	20.37%	20.37%
9.	27-Sep-02	90%	90%	17.41%	17.41%	2.00%	19.41%	19.41%
10.	30-Aug-02	80%	80%	15.83%	15.83%	1.90%	17.73%	17.73%
11.	26-Jul-02	85%	85%	16.63%	16.63%	1.90%	18.53%	18.53%
12.	28-Jun-02	65%	65%	13.34%	13.34%	1.70%	15.04%	15.04%
13.	31-May-02	60%	60%	12.47%	12.47%	1.60%	14.07%	14.07%
14.	12-Mo. Avg.	82%	82%	16.15%	16.15%	2.03%	18.18%	18.18%
15.	6-Mo. Avg.	**84%**	**85%**	**16.47%**	**16.63%**	2.18%	**18.65%**	**18.81%**
16.	3-Mo. Avg.	90%	90%	17.41%	17.41%	2.27%	19.68%	19.68%
17.	Spot	80%	80%	15.83%	15.83%	2.10%	17.93%	17.93%
18.	Average	84%	84%	16.47%	16.47%	2.15%	18.62%	18.62%

Source of Information: Value Line Investment Survey

Schedule PMA-24

Consensus Forecasts Of U.S. Interest Rates And Key Assumptions[1]

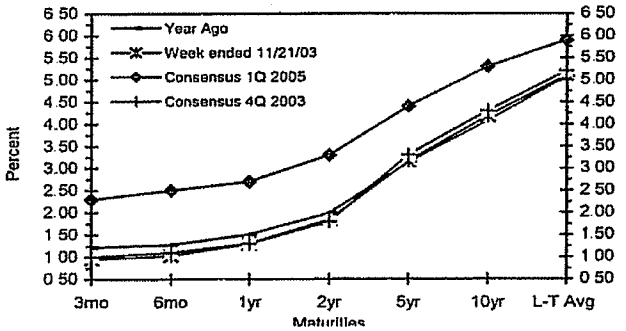
	History								Consensus Forecasts-Quarterly Avg.					
	Average For Week Ending				Average For Month			Latest Q	4Q	1Q	2Q	3Q	4Q	1Q
Interest Rates	Nov.21	Nov.14	Nov.7	Oct.31	Oct.	Sept.	August	3Q 2003	2003	2004	2004	2004	2004	2005
Federal Funds Rate	0 99	0 99	1.01	1 00	1.01	1 01	1 03	1.02	1.0	1.0	1.1	1.4	1.8	2.3
Prime Rate	4.00	4.00	4 00	4 00	4 00	4.00	4 00	4.00	4.0	4.0	4.1	4.4	4.8	5.3
LIBOR, 3-mo.	1 17	1.18	1 17	1.16	1 16	1 14	1 14	1.13	1.2	1.2	1.4	1.7	2.1	2.5
Commercial Paper, 1-mo.	1.02	1 03	1 02	1 03	1.02	1.02	1 03	1.02	1.1	1.1	1.3	1.6	2.0	2.4
Treasury bill, 3-mo.	0.95	0.95	0 96	0.96	0.94	0.96	0.97	0.95	1.0	1.0	1.2	1.5	1.9	2.3
Treasury bill, 6-mo.	1 03	1.05	1 05	1.04	1.02	1 03	1.05	1 02	1.1	1.2	1.3	1.7	2.1	2.5
Treasury bill, 1 yr.	1.30	1.36	1.35	1.30	1.25	1 24	1 31	1 22	1.3	1.4	1.6	2.0	2.3	2.7
Treasury note, 2 yr.	1.84	1 97	1.95	1.81	1.75	1 71	1 86	1.68	1.8	2.0	2.3	2.6	3.0	3.3
Treasury note, 5 yr	3 16	3.36	3.37	3 22	3 19	3 18	3.37	3.14	3.3	3.4	3.7	3.9	4.1	4.4
Treasury note, 10 yr.	4 18	4.36	4.41	4 31	4 29	4.27	4 45	4.23	4.3	4.5	4.7	4.9	5.1	5.3
Treasury Long-Term Avg	5.11	5.25	5 29	5 24	5 24	5.23	5.41	5.21	5.2	5.3	5.5	5.6	5.8	5.9
Corporate Aaa bond	5.56	5.70	5.74	5.69	5 70	5.72	5 88	5 70	5.8	5.9	6.1	6.2	6.4	6.6
Corporate Baa bond	6.57	6 71	6.75	6.69	6.73	6.79	7 01	6 81	6.8	6.9	7.1	7.2	7.3	7.5
State & Local bonds	4.77	4 77	4.83	4.88	4.89	4.92	5.10	4.92	4.9	5.0	5.1	5.2	5.3	5.4
Home mortgage rate	5 83	6.03	5.98	5.94	5 95	6 15	6 26	6.01	6.0	6.2	6.4	6.5	6.7	6.9

	History								Consensus Forecasts-Quarterly Avg.					
	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q
Key Assumptions	2001	2002	2002	2002	2002	2003	2003	2003	2003	2004	2004	2004	2004	2005
Major Currency Index	105.3	108.2	104.4	100.0	100 0	95 1	90.8	90 7	86.5	86.1	86.2	86.8	87.4	88.0
Real GDP	2.7	5 0	1 3	4.0	1.4	1.4	3.3	8 2	4.0	4.1	4.0	3.9	3.8	3.6
GDP Price Index	-0 5	1 3	1 2	1.0	1.6	2 4	1 0	1 7	1.4	1.6	1.6	1.7	1.8	1.9
Consumer Price Index	-0 7	1 4	3 4	2.2	2.0	3.8	0.7	2 4	1.8	1.8	1.9	2.1	2.2	2.3

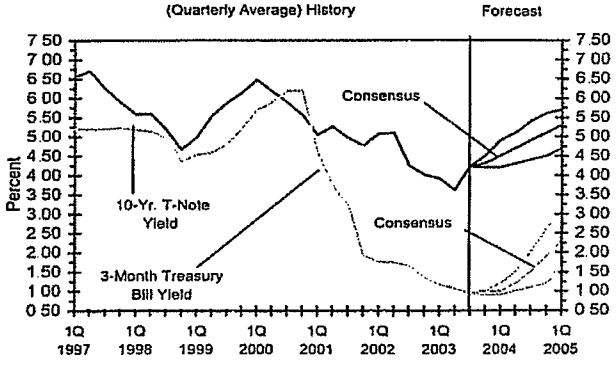
[1]Individual panel members' forecasts are on pages 4 through 9 Historical data for interest rates except LIBOR is from Federal Reserve Release (FRSR) H.15 LIBOR quotes available from *The Wall Street Journal* Definitions reported here are same as those in FRSR H.15. Treasury yields are reported on a constant maturity basis. Historical data for the U S Federal Reserve Board's Major Currency Index is from FRSR H 10 and G.5 Historical data for Real GDP and GDP Chained Price Index are from the Bureau of Economic Analysis (BEA) Consumer Price Index (CPI) history is from the Department of Labor's Bureau of Labor Statistics (BLS)

U.S. Treasury Yield Curve

Week ended November 21, 2003 and Year Ago vs
4Q 2003 and 1Q 2005 Consensus forecasts

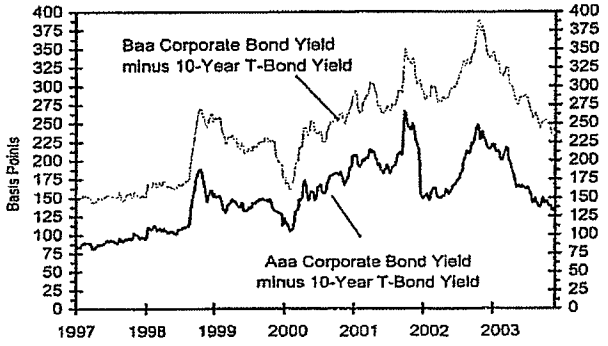


U.S. 3-Mo. T-Bills & 10-Yr. T-Note Yield



Corporate Bond Spreads

As of week ended November 21, 2003



U.S. Treasury Yield Curve

As of week ended November 21, 2003